



Board members

Joe Donat, City Administrator | Rebecca Valk, Corporation Counsel | Dr. Brian Martinez, Commissioner of Finance | Chris Gent, Commissioner of Public Works | Rich DuPilka, Engineer

I. Old Business

1. Bids Opened:

2. Bids – Award Recommendation:

- a. RFQ-COP-06-24-03 Fallkill Trunk Sewer Engineer-Barton and Loguidice
- b. RFQ-COP-08-24-03 -Engineering Services Secondary Clarifiers-Wright-Pierce
- c. RFQ-COP-08-24-04-Choice Neighborhood Planning Coordinator. -Wallace, Roberts and Todd

3. Notice to Proceed Issued

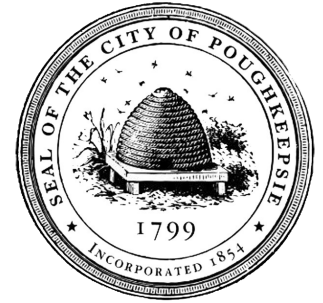
II. New Business

1. Bids currently in circulation. – Bid packages available on City Website and Bidnet Direct, or the Office of the Purchasing Agent

- a. RFB-COP-08-24-01 Bottled Water Service -Opens Oct 7th

2. Bids to be Renewed-for Discussion

III. Executive Session-None



RFQ-COP-06-2403

City of Poughkeepsie

Engineering Services for Fallkill Trunk Sewer Rehabilitation Project

Cost Proposal

September 11, 2024



Cost Proposal

As discussed in our Project Management Plan the exact timing of the construction is currently unknown based on the timing of funding availability. Funding aside, based on similar projects B&L has managed through construction we see no reason that this work cannot be done during one construction season.

Typically, B&L has our own inspectors that act more as an agent of B&L and make certain level of field decisions. To meet the DBE requirements for the BIL funding B&L would need to subcontract a minimum of 20% of our contract fee to a DBE firm. To do this we would have to hire a firm for construction observation. We have listed two firms we have subcontracted with numerous times and a third who would be new to B&L but local to the Poughkeepsie area. The technical skills of the construction inspector can impact the time needed by our Construction Manager to facilitate the project.

The second topic is contractor speed that will impact CA/CO cost. With the four City of Rye projects we are managing in 2024, we had one contractor use one crew and plans to use the entire year long duration allowed, a second contractor brought in 3 crews and worked in 3 distinct areas of the City simultaneously causing us to need to bring on additional inspectors, and a third contractor requested to do four, 10-hours days as their crews came from out of state also resulting in staffing implications. All of these decisions can be within the City of Poughkeepsie’s control to allow B&L to manage the inspection staff appropriately.

The rates for inspectors vary significantly and the local firm had the highest rate, while the other firms require travel time to the project site. At this point without a firm start date and anticipated schedule, neither of the three firms can commit that specific field staff will be available in the Spring of 2025, but we are confident that we can secure one of the three firms.

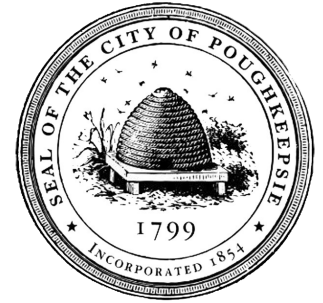
We hope that Poughkeepsie considers our recommendation that we proceed with obtaining firm quotes and staff resumes from each of these firms following the contractor bidding period and a preliminary understanding on how the contractor would approach the project. We can then assess the impact on our construction managers’ time to manage the observation firm as well as the hours needed for the construction observation.

To provide a baseline for negotiation we provide the following:

Task	Estimated Fee
Construction Administration January – December 2025	\$160,000
Construction Observation April 2025 to Sept 30, 2025 (26 weeks) Assumes a 9 hour day plus travel time and mileage/tolls	\$171,000
Additional CA per month to manage contractor delays, defective work	\$9,300



The Experience to **Listen**. The Power to **Solve**.
bartonandloguidice.com



RFQ-COP-06-2403

City of Poughkeepsie

Engineering Services for Fallkill Trunk Sewer Rehabilitation Project

September 11, 2024





September 11, 2024

Shirley Davidson
Purchasing Agent
City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, New York 12601

Re: RFQ-COP-06-24-03
Engineering Services for Fallkill Trunk Sewer Rehabilitation Project
File: 702.5112

Dear Ms. Davidson:

Barton & Loguidice, D.P.C. (B&L) is pleased to present our professional qualifications to the City of Poughkeepsie for Engineering Services for the Fallkill Trunk Rehabilitation Project. We have provided wastewater consulting services since B&L's founding in 1961 for a wide variety of systems and facilities, including services similar to those requested by the City of Poughkeepsie. The proposed team for your project is in the final stages of 4 fast track sewer rehabilitation projects in the City of Rye totaling approximately \$12.5 million in construction funded by a \$10,000,000 WQIP grant. We can bring this experience to City of Poughkeepsie to effectively manage the contractor as well as the funding agency requirements.

Through our current and previous work with Poughkeepsie, we have developed strong working relationships with City staff, local regulatory and funding agency staff. We understand the importance of communication in any successful project, and as part of this, our project team is made up of individuals you already know and trust. Since our staff is already familiar with your trunk sewer rehabilitation project and have been intimately involved in the final design as well as coordination with regulatory funding agencies to get the necessary approvals, we can save the City staff the time and money that would otherwise be spent educating a new team about your system.

We are proud to be a consultant that you can trust, and we look forward to expanding our relationship with the City.

Our team for this endeavor will be led by **Karen W. Clark, P.E., as Project Manager, Nicola Gosselin, as Construction Manager** and me, **Donald H. Fletcher, P.E., as Officer-in-Charge**.

Should you wish to speak with us further regarding this project and our qualifications, please contact Karen Clark kclark@bartonandloguidice.com or me at dfletcher@bartonandloguidice.com. Thank you for your consideration of our qualifications.

Sincerely,

Barton & Loguidice, D.P.C.

A handwritten signature in blue ink, appearing to read 'Donald H. Fletcher'.

Donald H. Fletcher, P.E.
Principal

A handwritten signature in blue ink, appearing to read 'Karen W. Clark'.

Karen W. Clark
Senior Associate

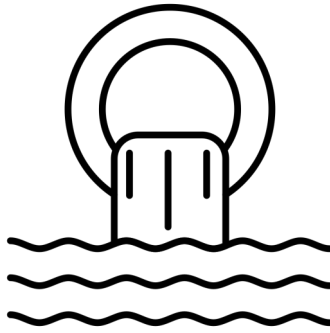


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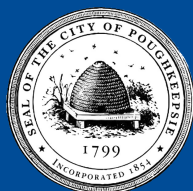
Project Management Plan

Schedule

Funding Agency Experience

Prepared for:

City of Poughkeepsie
Purchasing Department
62 Civic Center Plaza
Poughkeepsie, New York 12601



Prepared by:

Barton & Loguidice, D.P.C.
10 Airline Drive, Suite 200
Albany, New York 12205
518-218-1801





SECTION 1
QUALIFICATIONS PROPOSAL

CITY OF POUGHKEEPSIE
FALLKILL TRUNK SEWER
REHABILITATION PROJECT

Section 1: Qualifications Proposal

Firm Introduction

Barton & Loguidice, D.P.C., (B&L) has been engaged in the practice of professional engineering since 1961. B&L is a highly diversified planning, engineering, environmental science, and landscape architecture firm with a broad range of experience and expertise. Since our founding 63 years ago in Syracuse, New York, the firm has opened offices in Somers, Albany, Buffalo, Rochester, Watertown, Binghamton, Plattsburgh, and Utica, New York; Camp Hill and Pittsburgh, Pennsylvania; Annapolis and Baltimore, Maryland; Hartford, Connecticut; and Portland, Maine.

B&L employs a staff of approximately 350, about one quarter of which are licensed professional engineers, and includes landscape architects, planners, geologists, green infrastructure specialists, environmental scientists, and construction support personnel.

Throughout our history, B&L has built its business primarily serving public sector clients ranging from the local municipal level (cities, towns, and villages) to county, state, and federal agencies. The firm operates within eight core practice areas as shown in the graphic below.



Wastewater Engineering

B&L has been providing wastewater engineering services to municipalities since our founding in 1961. We can provide our clients with tailored services throughout the entire project process, including:

- System planning, design, and rehabilitation;
- Inflow/Infiltration analysis and reduction;
- Wastewater collection systems;
- Wet weather flow management;
- Regulatory and permitting assistance;

- Financial analysis and grantsmanship;
- Pumping stations;
- Wastewater treatment plants;
- Instrumentation and control;
- Supervisory Control and Data Acquisition (SCADA) implementation;
- Sludge management;
- Process and energy optimization;
- Sewer separation;
- Combined sewer overflow and sanitary sewer overflow evaluation and planning;
- Sewer rehabilitation;
- Interceptor sewers;
- Operations and maintenance manuals; and
- Preventative maintenance programs.

Sewers and Collection Systems Sanitary Sewer Collection System Evaluation and Design

B&L has provided planning, final design, and construction phase services for sanitary sewer system studies and implementations, including gravity and low pressure pipes and pump station force mains.

Our expertise includes:

- Collection systems analysis, including equipment inspections, existing flow and load conditions, and future flows and loads;
- Water quality issues;
- Facilities planning;
- Collection systems;
- Sewage pump stations design, rehabilitation, and demolition;
- Inflow/infiltration (I/I) investigations;
- Hydraulic modeling;
- Potential locations for treatment facilities identification; and
- Cost estimation and financing methods.



Our engineers routinely use LIDAR and GIS to develop planning level collection system layouts and cost estimates. We use AutoCAD Civil 3D for final design drawings, generating sewer plan profiles that often integrate GIS orthoimagery to enhance drawing details.

Implementation of Sanitary Sewer Rehabilitation and Inflow/Infiltration Reduction

B&L's wastewater engineers have helped numerous municipal clients secure funding for and implement sanitary sewer rehabilitation projects focused on inflow/infiltration (I/I) reduction. Our services during the implementation phase of a project usually include design, bid, and construction phase services. B&L's team assists clients throughout this process by:

- Preparing contract documents for bidding, such as drawings, specifications, and front end requirements;
- Providing bid assistance for contractor procurement;
- Providing construction administration services, such as submittal review, pay app review, contractor coordination, and progress meetings; and
- Performing spot, part, and full-time construction inspection.

Collection Systems and Trenchless Sewer Rehabilitation

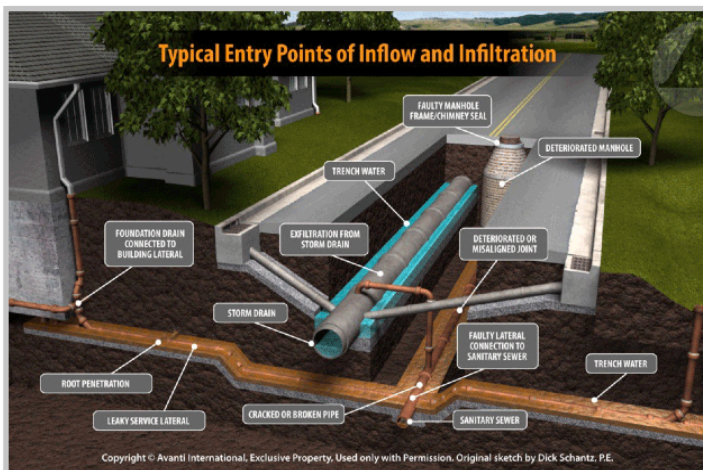
We understand that the City intends to demolish an existing sewer pump station and replace it with a new gravity sewer that will discharge to an adjacent pump station. B&L's team has worked on many trenchless pipeline applications, including horizontal directional drilling, pipe bursting, and cured-in-place lining systems (full length and point repair sleeves). We have also specified and overseen application of various manhole coating systems, including chemical grout sealing, cementitious coatings, and 2-part epoxy hydrogen sulfide-resistant systems.

Construction Phase Services

Construction administration and construction inspection (CA/CI) help ensure that projects are constructed according to their plans and specifications and in compliance with applicable building codes, regulations, and best practices. We have provided construction phases services for a wide variety of projects, including water and wastewater facilities and systems. Our CA/CI services include:

- Attending and preparing documentation for preconstruction meetings,
- On site construction observation,
- Providing documentation of all activities,
- Reviewing submittals to determine compliance with plans and specifications,
- Collaborating with department heads,
- Preparing and reviewing change orders,
- Final reviews for release of funds on letters of credit,
- Punch lists, and
- Final certifications of project completion.

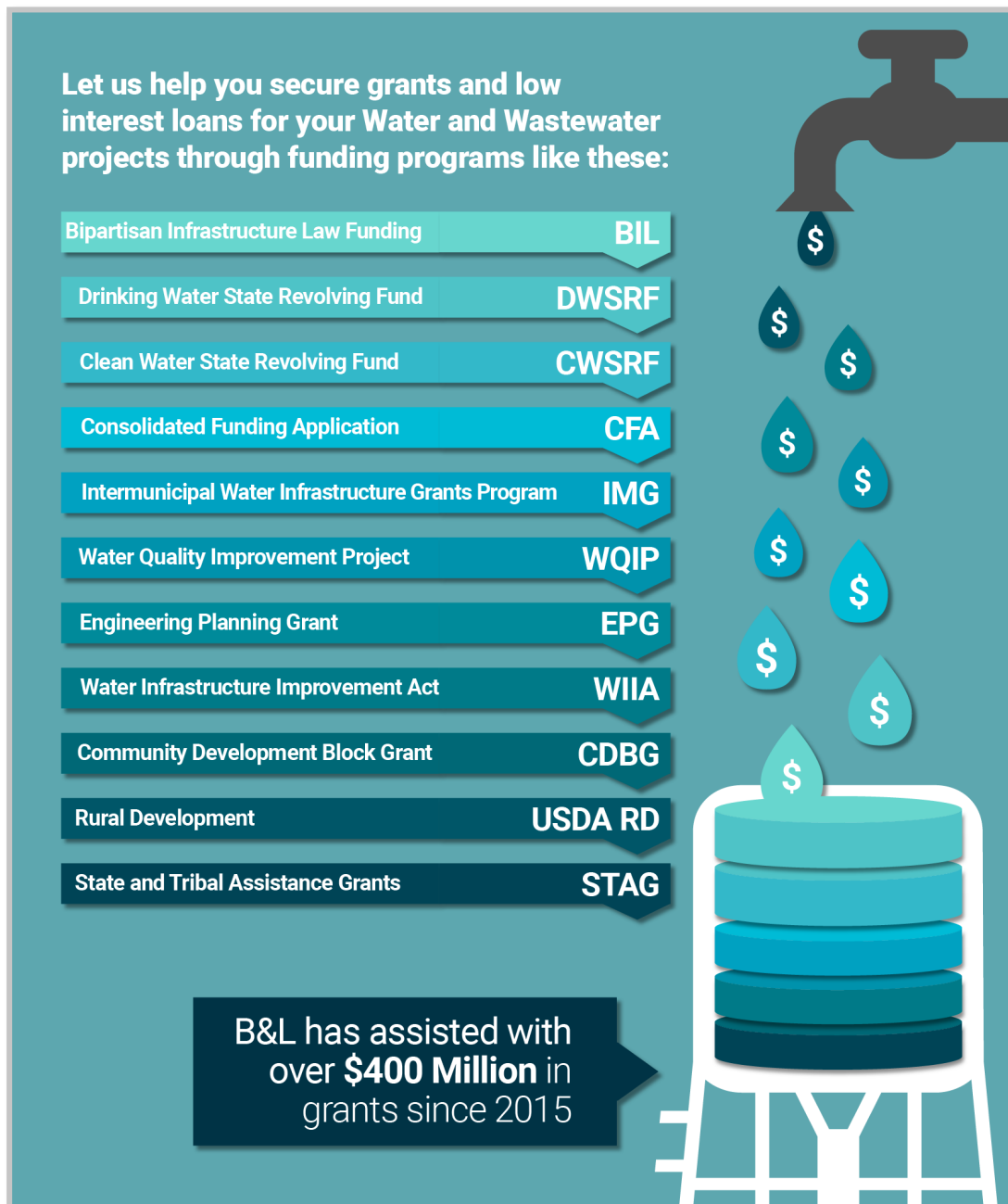
We pride ourselves on our ability to understand both the owner's objectives and the contractor's construction methods. This understanding helps us anticipate potential misinterpretations and unforeseen field conditions. By maintaining open communication with the owner and the contractor, we can limit misinterpretations and brainstorm solutions to project obstacles while minimizing or eliminating costly project overruns. With this approach, we can also respond to issues in a timely manner and save our clients' money by sending the nearest inspector to the project site.



Funding Assistance

Municipal wastewater projects are prohibitively expensive to system users. Because of this, B&L provides funding assistance services through grant writing and administration. Our engineers have worked with New York State Revolving Fund programs for sewer and water projects, such as the New York State Environmental Facilities Corporation's (NYSEFC) and Clean Water State Revolving Fund (CWSRF) programs, to obtain funding and help our client's implement it upon its award. Once funding is obtained—whether through grant programs, loans, or co-funding—our team often assists with funding program administration throughout project development, construction, and closeout.

B&L has helped countless communities obtain funding for their water and wastewater projects through NYSEFC programs. Because of this, we work with the EFC fairly often and maintain strong working relationships with their staff. This helps up stay up to date on regulatory and funding requirements, so our clients' projects can be progressed quickly and efficiently while remaining in compliance with permitting and funding stipulations.



Let us help you secure grants and low interest loans for your Water and Wastewater projects through funding programs like these:

Bipartisan Infrastructure Law Funding	BIL
Drinking Water State Revolving Fund	DWSRF
Clean Water State Revolving Fund	CWSRF
Consolidated Funding Application	CFA
Intermunicipal Water Infrastructure Grants Program	IMG
Water Quality Improvement Project	WQIP
Engineering Planning Grant	EPG
Water Infrastructure Improvement Act	WIIA
Community Development Block Grant	CDBG
Rural Development	USDA RD
State and Tribal Assistance Grants	STAG

B&L has assisted with over \$400 Million in grants since 2015

The infographic features a water tower on the right with several dollar signs (\$ symbols) falling from it, symbolizing the flow of funding. The background is a teal gradient.

Proposed Team

The selection of B&L as your project consultant will give the City of Poughkeepsie an experienced team. B&L will also be teaming with qualified and technically competent subcontractors that are outlined in the organizational chart below. The qualifications and experience of our team members can be found on the following pages.



PROJECT MANAGER	OFFICER-IN-CHARGE
Karen W. Clark, P.E. Senior Associate	Donald Fletcher, P.E. Principal
CONSTRUCTION ADMINISTRATION SERVICES	SUBCONSULTANTS— CONSTRUCTION OBSERVATION
Nicola J. Gosselin, I.E. Senior Staff Engineer Allan M. Gilbert, I.E. Staff Engineer Dylan Curran, P.E. Project Engineer	Geovation Engineering, P.C. (Geovation)  Civil Tec Engineering & Surveying, P.C. (CivilTec)  KARC Planning Consultants, Inc. 

Staff Resumes

Summary

Mr. Fletcher has 33 years of extensive experience as a municipal engineer and has progressed hundreds of projects from planning through construction. These projects have included the following:

- Potable water systems including source development, treatment, storage, metering and distribution
- Wastewater management systems including gravity and pressure collection, pumping stations and treatment
- His experience includes preparation of feasibility studies, maps, plans and reports for formation of utility districts, facilities plans for water and wastewater systems, grant and funding applications, environmental review documents, permit applications, right-of-way and easement services and contract design drawings and specifications.



Donald Fletcher, P.E.
Principal

Relevant Project Experience

West Trunk Sewer Collapse, City of Newburgh, New York

Mr. Fletcher was officer-in-charge for an emergency project for the City of Newburgh that resulted from a major trunk sewer structural failure at the Mill Street Bridge along a portion of the West Trunk Sewer. B&L was retained by the City to provide technical knowledge for an emergency sewer repair and evaluation of an aging 54-inch brick sewer. As a result of the evaluation, B&L has designed, permitted, and oversaw construction for the rehabilitation of approximately 2,550 linear feet of 54-inch brick sewer with CIPP methods, as well as 1,600 linear feet of 60-inch brick overflow and 1,200 linear foot of a 5-foot by 6-foot box culvert with a cementitious lining system. The final stage of this project involves the design, permitting, and construction management for relocation of the Quassaick Creek to prevent future infiltration and potential damage to the sewer.

Inflow and Infiltration Monitoring - Phases 1, 2, and 3 SSES, City of Rye, New York

This project consisted of three phase SSES for the City to develop a comprehensive plan to address excess inflow and infiltration into their collection system in response to an order on consent. Phase 1 consisted of an extensive flow monitoring program with the installation of 37 flow monitors to identify areas within the City that exceeded the County's flow guidelines per capita. From the flow monitoring program the 37 areas were prioritized in a Phase 1 report and additional field investigation were identified. Phase 2 consisted of focused smoke testing in the higher priority areas, some manhole inspections and approximately 30,000 feet of CCTV inspections. A Phase 2 report was developed outlining high priority sewer improvements at a capital cost of \$2.7 million. Phase 3

consisted of smoke testing the remainder the high flow areas, inspection of 1,100 manholes and CCTV inspection of approximately 90,000 lf. The Phase 3 investigations identified \$12.3 million in high-priority sewer and manhole rehabilitation projects which will be completed over the next five to seven years. Mr. Fletcher was officer-in-charge.

EPG Infiltration and Inflow Studies I, II, III, and IV, Village of Ellenville, New York

The sanitary collection system has historically conveyed elevated levels of extraneous flow, or inflow and infiltration, to the wastewater treatment plant. The elevated levels of inflow and infiltration suggest the sanitary collection system has numerous pipe and manhole deficiencies. During investigation, numerous structural defects were found, including cracks in sewer pipe, crumbling manholes, and large holes in pipes. Implementation of a sewer rehabilitation program is necessary to address major structural defects found during the investigation and to reduce inflow and infiltration within the system. The deficiencies and repairs necessary were summarize in a preliminary engineering report (PER). Mr. Fletcher was officer-in-charge.

Sewer Rehabilitation, Poughkeepsie, New York

Mr. Fletcher worked on a sewer rehabilitation project estimated at \$4.6 million for I/I prevention for the City of Poughkeepsie. The City has a 42-inch interceptor main which was determined to have severe I/I, both within this large interceptor as well as in smaller sewer mains tributary to it. Mr. Fletcher oversaw the design for replacement and rehabilitation of this system. This included development of a 3D model of the 42 inch main using LiDAR technology.

Summary

Ms. Clark has 35 years of extensive experience with sewer system evaluations, pump station evaluations and design, WWTP capacity analysis, upgrades, industrial wastewater treatment, disinfection systems, energy conservation studies, and feasibility studies. She has evaluated and designed wastewater treatment systems for various industrial wastes including chromium removal from ground water, bakeries, auto manufacturers, landfill leachate, chemical manufacturing, cheese manufacturing and pharmaceutical industries.

Ms. Clark excels at coordinating between process/equipment, structural, electrical, mechanical and plumbing disciplines and has implemented energy efficient improvements at wastewater treatment plants throughout New York State.



Karen W. Clark, P.E.
Senior Associate

Relevant Project Experience

Sewer Rehabilitation, Poughkeepsie, New York

Ms. Clark served as a project manager on a sewer rehabilitation project estimated at \$4.6 million for I/I prevention for the City of Poughkeepsie. The City has a 42-inch interceptor main which was determined to have severe I/I, both within this large interceptor as well as in smaller sewer mains tributary to it. Ms. Clark oversaw the design for replacement and rehabilitation of this system. This included development of a 3D model of the 42 inch main using LIDAR technology. Using this 3D scan and CCTV footage of the sewer main existing conditions,

Inflow and Infiltration Study, City of Poughkeepsie, New York

Ms. Clark was the project manager for the sewer evaluation to assist the City in solving their recent flow increases to the City wastewater treatment plant. With relatively little growth in the past five years in the sewershed it is apparent that the collection system is failing and flows have increased to the plant. The project team conducted an investigation including flow monitoring, CCTV inspection of the primary sewer mains, manhole inspections and dye testing. The investigation will culminate with a preliminary engineering report (PER) that will identify issues, recommend various solutions and include advantages, disadvantages and capital costs. B&L assisted the City in securing a \$100,000 engineering planning grant to fund a portion of the project. This project is ongoing.

Sewer Rehabilitation Phase 1-3, Rye, New York

Ms. Clark was the project manager for the design and construction phase services for five construction contracts for the City of Rye (Westchester County, NY) to rehabilitate its sanitary sewer system to reduce infiltration and inflow (I&I). These contracts included manhole rehabilitation, sewer main spot repairs, sewer main open cut repairs, and Cured-in-Place Pipe (CIPP) lining and were

prepared in accordance with WQIP funding requirements. Project included contract drawings, technical specifications, and coordinated with Westchester County DOH and DOT to gain regulatory approval for construction of the project. B&L provided bidding and construction administration services, including execution of contract documents, kickoff and pre-construction meetings, progress meetings, field and change orders, daily coordination between contractors, the City, and other project stakeholders, and interfacing with local residents to coordinate work impacting road access and keep impacted residents apprised of work status and timeframes. Manhole rehabilitation Contract 1 was designed and constructed in 2020. Project design for the remainder of the 4 contracts started in September 2023 with all 4 projects bid by February 2024, construction of the \$13.7 million project will be completed by December 2024.

City of Rye Phases 1, 2 and 3 SSES

Ms. Clark was the project manager for a three phase SSES for the City to develop a comprehensive plan to address excess inflow and infiltration into their collection system in response to an Order on Consent. Phase 1 consisted of an extensive flow monitoring program with the installation of 37 flow monitors to identify areas within the City that exceeded the County's flow guidelines per capita. From the flow monitoring program the 37 areas were prioritized in a Phase 1 report and additional field investigation were identified. Phase 2 consisted of focused smoke testing in the higher priority areas, some manhole inspections and approximately 30,000 feet of CCTV inspections. A Phase 2 report was developed outlining high priority sewer improvements at a capital cost of \$2.7 million. Phase 3 consisted of smoke testing the remainder the high flow areas, inspection of 1,100 manholes and CCTV inspection of approximately 90,000 LF. The Phase 3 investigations identified \$13 million in high-priority sewer and manhole rehabilitation projects.

Summary

Ms. Gosselin has 11 years of experience as a project manager and estimator for construction projects. She is proficient with all disciplines including permitting, stormwater compliance, estimating, budgeting, purchasing, shop drawings, contractor coordination, scheduling, payments, change orders, claims and project close out. She has the ability to team with the design staff and clients to anticipate problems, react proactively to reduce impacts to schedules and budgets, and drive construction projects to completion.



Nicola J. Gosselin, I.E.
Senior Staff Engineer

Relevant Project Experience

Dwaar Kill – Pine Bush Water Supply Project, Orange County Water Authority and Town of Crawford, New York

Ms. Gosselin is the construction manager for the project, which was initiated by the Orange County Water Authority (OCWA) to meet the demands of the Town and surrounding area's growing population. Construction was implemented by the Town of Crawford to meet the critical demands of the Pine Bush Water District. The project included establishing and testing production wells, design of a treatment building to address elevated levels of iron and manganese, design of 1.6 miles of transmission main to connect the proposed wellfield to the existing water supply system, and associated permitting and approvals. B&L was also responsible for development of the application which successfully secured a WIIA grant in the amount of \$3.85 million to fund construction of the project.

Saratoga County Sewer District #1, Mechanicville, New York

Ms. Gosselin is the construction manager for the project which includes the construction of new plant infrastructure to treat high-strength ammonia wastewater in cold and warm temperatures at the 43 MGD WWTP. B&L was responsible for the design of two new MLE aeration tanks on the south side, conversion of the existing 8 tanks to the MLE process with anoxic, swing and aerobic zones (to include mixers, an internal recycle pump and new diffused aeration), six new Turblex blowers, and a new chemical feed building and associated chemical storage tanks and feed equipment for an alkalinity and carbon source. Ms. Gosselin managed the paperwork for compliance with three funding agencies which include EFC, NYSDEC–WQIP, and Empire State Development.

Hill Street Drainage Improvements Project, City of Mechanicville, New York

Ms. Gosselin is the construction manager for a DOT Betterment project including the installation of approximately 230 linear feet of 18-inch HDPE storm pipe, two new manhole structures, and connections into two existing drainage structures. The project also includes restoration of the work area inclusive of ADA compliant sidewalks as well as improvement of a commercial driveway entrance.

Water System Improvements Project, City of Middletown, New York

Ms. Gosselin is the construction manager for the replacement of the City's existing 20-inch water transmission main from the Water Treatment Plant to the Middletown Community Campus as well as the replacement of a 12-inch diameter water transmission main. The project includes the planning, design, permitting, and construction of approximately 6,100 linear feet of 24-inch diameter main, 700 linear feet of 18-inch diameter main, and 2,800 linear feet of 12-inch diameter main.

Summary

Mr. Gilbert has seven years of experience and is a staff engineer in B&L's Water Resources Practice Area. He has been involved in various aspects of design including engineering reports, CAD drafting, GIS mapping, WaterCAD modeling, permitting, and SEQRA. His responsibilities include the development of design reports, evaluation of feasible alternatives, environmental permit applications, development of water main and site designs, analysis of cost estimates, preparation of construction plans and specifications for water and wastewater projects for public bid, and the review of submittals.

Relevant professional skills include:

- AutoCAD Civil 3D
- Microsoft Office Suite
- SolidWorks 2013
- Avantis Maintenance Management Software



Allan M. Gilbert, I.E.
Staff Engineer

Relevant Project Experience

Sewer Rehabilitation, City of Rye, New York

The City of Rye was under an Order on Consent to address excess inflow and infiltration entering their sewer collection system. Mr. Gilbert was project engineer for the first phase of manhole replacement and sewer rehabilitation as identified by a preliminary engineering report to reduce I&I. This included assembling construction drawings and technical specifications to advance the project to the bidding stage. Mr. Gilbert also conducted construction observations, including keeping daily inspection reports. Design and construction activities included frame/cover replacement, concrete patching, grouting/cementitious lining, bench/channel reformation, and complete manhole replacement.

Sewer Rehabilitation Construction Phase Services, Rye, New York

Mr. Gilbert evaluated bids and performed construction administration and observation activities for the City of Rye for upgrades to its municipal sewer system. These activities assisting the City with the bidding and award phase, facilitating project kickoff and progress meetings to keep the project on schedule, and day-to-day on site construction observation. Mr. Gilbert kept detailed daily logs, issued field orders and change orders, and reviewed payment requisitions. Mr. Gilbert was integral to coordinating four construction contracts in 2024. He managed submissions, reviews, documentation of quantities, field documentation, and resolution of issues, observation reports, and coordination with homeowners as needed.

Sewer Rehabilitation, Poughkeepsie, New York

Mr. Gilbert served as a staff engineer on a sewer rehabilitation project estimated at \$4.6 million for I&I prevention for the City of Poughkeepsie. The City has a 42-inch interceptor main which was determined to have severe Infiltration & Inflow (I&I), both within this large interceptor as well as in smaller sewer mains tributary to it. Mr. Gilbert oversaw the design for replacement and rehabilitation of this system. This included development of a 3D model of the 42 inch main using LIDAR technology. Using this 3D scan and CCTV footage of the sewer main existing conditions, Mr. Gilbert prepared an extensive list of recommended repairs targeted at the I&I sources. Mr. Gilbert developed plans and specifications for these repairs. This project is estimated to go into construction in Spring 2025.

Summary

Mr. Curran has five years of experience in the industry. He is proficient in AutoCAD Civil 3D, ArcGIS Pro, Excel VBA, Aquaveo GMS, and Visual Hydraulics, and possesses extensive knowledge of analytical equipment. He has been involved with various project types, including water and wastewater treatment plant design, sewer rehabilitation, and environmental planning. He has experience in emerging contaminant research, report writing, laboratory work, has performed field services including manhole inspection, smoke testing, construction inspection/observation, and environmental sampling.

Mr. Curran has assisted numerous municipalities in applying for and receiving funding for their water/wastewater, community development, environmental protection, and infrastructure improvement projects. He has written successful grants through the NYS Consolidated Funding Application (CFA) and the NYS EFC Water Infrastructure Improvement Act (WIIA), helping to secure tens of millions of dollars for municipalities seeking to improve or expand their infrastructure.



Dylan Curran, P.E.
Project Engineer

Relevant Project Experience

Manhole Rehabilitation, City of Rye, New York

The City of Rye was under an Order on Consent to address excess inflow and infiltration entering their sewer collection system. Mr. Curran was the project engineer for the first phase of manhole replacement and rehabilitation as identified by a preliminary engineering report to reduce I&I. This included assembling construction drawings and technical specifications to advance the project to the bidding stage. Mr. Curran also conducted construction observations, including keeping daily inspection reports. Design and construction activities included frame/cover replacement, concrete patching, grouting/cementitious lining, bench/channel reformation, and complete manhole replacement.

EPG Inflow and Infiltration Study, City of Poughkeepsie, New York

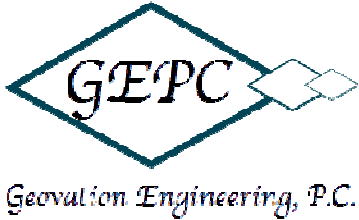
In the past several years, the City's 10 MGD WPCP has seen average flows rise from about 6 MGD to almost 9 MGD. Further, peak flows increased from the 9 MGD range to almost 13 MGD. With relatively little growth in the past 5 years in the sewershed, it is apparent that the collection system is failing and inflow and infiltration (I&I) has increased to the plant. Mr. Curran conducted manhole inspections on more than 200 manholes and reviewed CCTV video of the primary sewer mains. He initialized a draft of the Preliminary Engineering Report (PER) to identify issues, recommend various solutions, and include advantages, disadvantages, and capital costs. Mr. Curran also assisted the City in securing a \$100,000 engineering planning grant (EPG) to fund a portion of the project.

EPG Inflow and Infiltration Study, Village of Ellenville, New York

The sanitary collection system has historically conveyed elevated levels of flow to the wastewater treatment plant during wet weather periods. The elevated levels of I&I suggest the sanitary collection system has numerous pipe and manhole deficiencies. During investigation, numerous structural defects were found, including cracks in sewer pipe, crumbling manholes, and large holes in pipes. Implementation of a sewer rehabilitation program is necessary to address major structural defects found during the investigation and to reduce inflow and infiltration within the system. The deficiencies and repairs necessary were summarized in a PER. Prior to field work, Mr. Curran completed CFA applications that secured much needed funding for the Village. Mr. Curran then conducted smoke testing, manhole inspections, CCTV review, and PER drafting.

Review and Analysis of Dickerson Pond WWTP, Town of Cortlandt, New York

The Dickerson Pond WWTP has had multiple odor complaints, operational concerns, and SPDES permit violations in recent years. B&L will perform an investigation of each unit process of the MBR plant and make recommendations for short- and long-term improvement projects. Findings will be summarized in a technical memorandum to the Town. Areas of focus will include MBR operation, odor control methods, chemical storage requirements, and I&I analysis.



Corporate Capability Statement

Company Data

CAGE Code: 1RMB2

DUNS:15-990-6148

Corporate: P.C.

Woman-Owned Small Business

Certification:

**NYS WBE, NYC Small Business
Services WBE, NYSUCP DBE**

NAICS Codes

541620-Environmental Consulting

541330-Engineering Services

562910-Remediation Services

NYS & Other Commodity Codes

ESD I-1099 Regulatory Assistance

ESD I-2075 Permitting Assistance

NIGP 92535 Env. Engineering

**NIGP 92615 Air Quality Monitoring
Services**

NIGP 92623 Env. Auditing Svcs

NIGP 92683 Env. Site Assessment

NIGP 92685-Soil, Soil Vapor

Groundwater Sampling & Analysis

NIGP 92688 Storm Water

Discharge Testing Services

NIGP 96145 Inspection and

Certification Services

Contact Information

**Sheila McGroddy, P.E.
President**

Geovation Engineering, P.C.

2016 Route 284,

PO Box 513

Slate Hill, NY 10973

Tel: (845) 242-1352

Email:

smcgroddy@geovation.com

Company Profile

Geovation Engineering, P.C (GEPC) is a full-service environmental engineering firm offering comprehensive planning, evaluation, design, investigation, remediation and construction phase services . GEPC's clients include contractors, consultants, private industry and government agencies.

GEPC's services include:

- Environmental assessment, remedial investigation, design and implementation for Brownfields Redevelopment and other sites
- Erosion and sediment control design and inspection
- Regulatory Compliance and Permitting including water & wastewater treatment plant evaluation
- Environmental Monitoring (air, water, soil, sediment, soil-vapor) including Community Air Monitoring Programs (CAMP)
- Construction Oversight and Management

Company Principals

Sheila M. McGroddy, P.E.: President, Environmental Engineer with more than 30 years experience on commercial and municipal projects.
Robert L. Zimmer, P.E., P.G.: Vice President, Environmental Engineer and Geologist with more than 30 years experience. Chairman of Planning Board for Village of Greenwood Lake, NY.

Project Summary

Select Municipal Projects performed as WBE Subcontractor:

- Provided construction inspection services as sub-contractor to ARCADIS for the South Water Street Sewer Separation and Regulator No. 2 Improvements projects in City of Newburgh, NY.
- Provided construction inspection services as sub-contractor to Barton & Loguidice, D.P.C. for Liberty & Grand Street Sewer Improvement Project in the City of Newburgh, NY.
- Provided construction inspection services as sub-contractor to D&B Engineers and Architects, P.C. for Critical Facility Flood Mitigation Measures for the Town of Blooming Grove, NY.
- Provided construction inspection services as sub-contractor to D&B Engineers and Architects, P.C. for construction improvements to the existing Highway/Police Department Storage Building in the Town of Blooming Grove, NY to accommodate the relocation of the contents of their existing off-site Maintenance Garage

Teaming Partner



Firm Profile

Civil Tec Engineering & Surveying P.C. (CTE&S) is a woman owned and managed consulting engineering and land surveying firm providing a range of services including planning, design, engineering, construction management, inspection, and land surveying services. CTE&S has been successfully serving our clients in both public and private sectors for the past 8+ years. CTE&S is actively involved in a multitude of projects throughout the Hudson Valley area including, Site/Civil Engineering Design, Land Surveying, Construction Stakeout, Mapping, and Inspection. CTE&S maintains and staff's offices at our headquarters in Suffern, New York with branch offices in Chester and Latham, New York. This project would be managed from their Orange County office.

CTE&S understands the complexity and dynamics of modern projects and also the importance of bringing the projects to completion both on-time and within budget. Thus, CTE&S integrates its technical expertise with its experience to accurately determine the needs of each client and identify innovative, economically responsible, and environmentally sustainable solutions. To support their goals, we employ a multi-disciplined group of professionals experienced in developing and implementing practical solutions for their client's engineering/surveying projects.

CTE&S is currently certified by the following agencies:

- Port Authority of New York & New Jersey WBE firm.
- New York State Department of Transportation DBE firm.

Land Surveying and Mapping Services

CTE&S's Surveying and Mapping Division is a provider of Land Surveying & Mapping Services for Design Projects, Topographic Maps, Right-of-Way (ROW) Surveys, Utility Surveys, and Establishment of Boundary lines. Route Surveys, Geotechnical Surveys, Preliminary Development Investigation Surveys, Construction Layouts, Establishment of Horizontal and Vertical Controls (by Conventional and Global Positioning System (GPS) to coordinate and aid Aerial Photogrammetric, are part of the many Land Surveying services they are currently providing.

CTE&S maintains an in-house computer system and State-of-the-Art Software Programs. Their ability to provide complex computer calculations, as required, assists them in evaluating a variety of design conditions.

Their experienced field staff uses advanced surveying equipment such as, Total Stations, Geodimeter (Robotic Total Station), Auto Levels and GPS. Their surveying staff are knowledgeable and familiar with all the requirements described in the "Land Surveying Standards and Procedures Manual" as well as "CADD Standards and Procedures Manual" by various government agencies. They currently field three fully equipped survey crews and office staff to complete any project on time and within budget. To maintain a competitive edge in the industry, CTE&S always encourages the continuing education and training of field and office staff to broaden their knowledge in their respective fields.

Quality Assurance and Quality Control

Each project is under the direct supervision of licensed Land Surveyors. CTE&S currently employs three licenses land surveyors. Besides normal field operations, specific Quality Assurance and Quality Control Procedures (QA/QC) are conducted to ensure that the efforts expended on assignments are being performed in an accurate, consistent, and cost-benefit manner.



PLANNING CONSULTANTS, INC.

SERVICES OFFERED

Construction Administration
Construction Management
Construction Observation
Project Scheduling
Geotechnical Assessment Coordination
SEQRA Analysis
Wetland Permitting
Wetland Delineation
Biodiversity Assessment Coordination
Coordination of Third-Party Testing

CODES

FEIN: 26-3587541
DUNS: 027174917
NAICS: 237110, 541611, 541620
NIGP: 95877

CERTIFICATIONS

WBE - New York State
WBE - Port Authority of NY & NJ
WBE - New York City
DBE - Port Authority of NY & NJ
WOSB - SAM.gov
EDWOSB - SAM.gov

CONTACT

 845.243.2500
 kelly@karcpc.com
 www.karcpc.com
 181 Church St.
Poughkeepsie, NY 12601

COMPANY OVERVIEW

KARC Planning Consultants, Inc. was founded in 2008 by Kelly Libolt. Ms. Libolt began her career as a project planner and rose through the ranks to become a Senior Project Manager for Civil Engineering, Construction, and Demolition Projects. She opened KARC Planning Consultants with the goal of providing superior project management and strategic planning services for complex engineering and construction projects in the Hudson Valley and beyond.

The firm is well experienced in managing all aspects of Civil, Structural, Water/Wastewater, Geotechnical Engineering, Survey, Master Planning, Stormwater Design and Landscape Architecture projects. KARC Planning Consultants has worked with a wide variety of clientele including Municipalities, Architects, Engineers, Private Developers, along with various County, State, and Federal Agencies.

Over the last 15 years, KARC Planning Consultants has grown into an experienced and reliable team of women with varying knowledge and expertise to best serve each unique project and customer.

PAST PERFORMANCE

Liberty Street Parking Lot - City of Poughkeepsie

Clark Patterson Lee | March 2022 - November 2022

KARC Planning Consultants was retained by the Engineer to provide Construction Observation services for this project. Our observer prepared daily reports detailing all job-related activity occurring at the job site and took photographs of all relevant activities, which were then compiled by our team and provided to the Architect.

Dutchess County Office Building - 4th Floor

Liscum McCormack VanVoorhis | February 2020 - March 2021

KARC Planning Consultants was retained by the Architect to provide Construction Administration services for this project. Our team was responsible for scheduling and attending pre-construction and weekly construction progress meetings, recording and distributing meeting minutes, identifying construction issues requiring immediate attention, preparing and maintaining submittal logs, reviewing RFI's and payment requests, and developing final punch lists and performing the final inspection.

City of Middletown Water Tanks

Clark Patterson Lee | June 2019 - Current

KARC Planning Consultants was retained by the Engineer to provide Geotechnical Consulting, Construction Observation, and Management of Third-Party testing for this project. Our team was responsible for coordinating subsurface exploration and the laboratory testing of the samples acquired for natural water content, grain size analysis, and Atterberg limits. Our team also coordinated with an engineering firm to perform a geotechnical engineering evaluation. Lastly, our observer prepared daily reports and photographs of all job-related activity occurring at each of the three job sites.

Relevant Project Experience

City of Poughkeepsie Sewer System Improvements

Poughkeepsie, New York

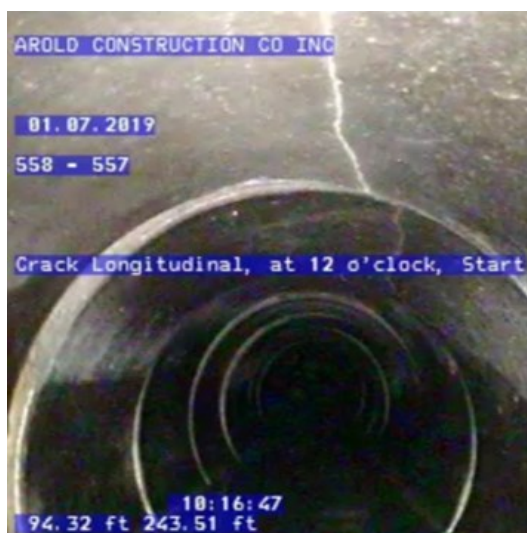
The City of Poughkeepsie retained the services of B&L to prepare plans and specifications and provide construction administration and observation services for sewer system improvements to prevent infiltration and inflow (I&I) in the City's sewer collection system.

Prior to this project, B&L successfully acquired a \$100,000 Engineering Planning Grant (EPG) through the New York State Environmental Facilities Corporation to evaluate the City's sanitary sewer collection system for I&I sources. B&L used this EPG grant to conduct an I&I investigation and ultimately develop a preliminary engineering report (PER) which was used for a Clean Water State Revolving Fund (CWSRF) IUP listing and Water Quality Improvement Program (WQIP) grant application, which secured a grant of \$3,566,800 for the City to conduct recommended infrastructure repairs resulting from this investigation.

B&L prepared plans, specifications, and contract documents for repairs to the City's sanitary sewer collection system including repairs to manholes and sewer mains. Manhole repairs included cover replacement and rehabilitation, interior manhole lining, and bench repairs. Sewer rehabilitations included open cut replacement of sewer line, cast-in-place pipe (CIPP) lining, centrifugally cast concrete pipe (CCCP) lining, root removal, intrusion cutting, and grout injection repairs. As part of the contract documents, B&L coordinated a laser survey of 2,700 feet of 42-inch brick sewer main. This laser scan was used to develop a 3D model of the main, which will be made available to the contractor in cad format to supplement the plan and profile views of the main as part of the contract set.

Project Cost:
\$4.6 Million

Project Completion Date:
2025 est.



City of Poughkeepsie Sewer Rehabilitation Program

Poughkeepsie, New York

The City of Poughkeepsie owns and maintains 76 miles of sewers and 2,653 manholes. The City retained B&L to conduct an extensive inflow and infiltration investigation of their sewers and design the proposed improvements. The evaluation consisted of flow monitoring, groundwater monitoring, manhole inspections, and CCTV inspections. The CCTV investigation revealed a significant infiltration source at the 42-inch brick tunnel on Verrazano Boulevard.

The team anticipated deformity and discrepancies in curvature in the brick sewer addition, so scanning was proposed during the design phase. Scans included a RedZone robotic LiDAR scan. Both the location and the curvature of the sewer were dramatically different from what had been anticipated, and the detailed ovality reports showed prior contractor deviations throughout the tunnel. The 3D model was part of the bid documents for the current contractors' use in their bid preparation.

Project Cost:
\$250,000

Project Completion Date:
2020



Figure 1: Verrazano Boulevard Infiltration Sources



Figure 2: RedZone Robotic LIDAR Scan

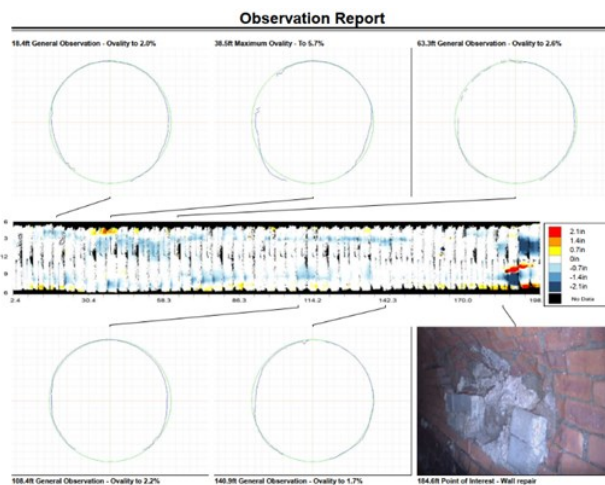


Figure 3: Sewer Ovality

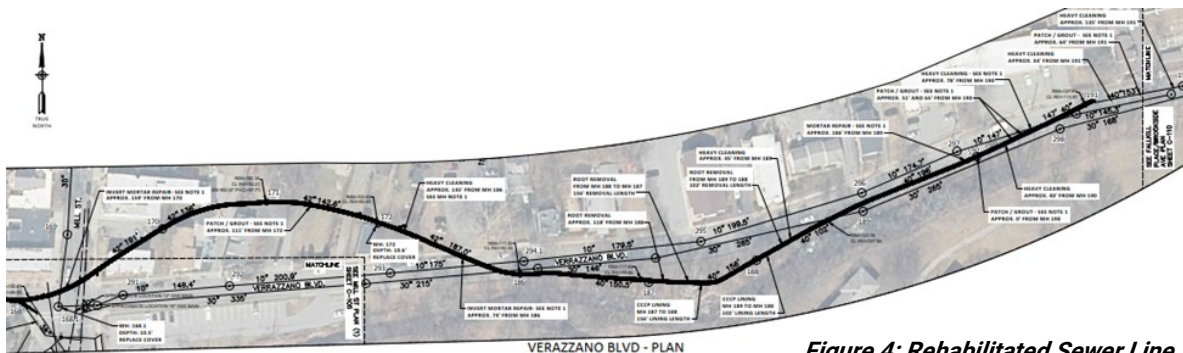


Figure 4: Rehabilitated Sewer Line

City of Rye Sewer System Improvements

Rye, New York

The City of Rye retained the services of B&L to prepare plans and specifications and provide construction administration and observation services for sewer system improvements to prevent infiltration and inflow (I/I) in the City's sewer collection system. The City was working under a court order to perform a certain number of repairs by milestones covering a three year period ending December 31, 2024. B&L previously performed the sanitary sewer evaluation survey (SSES) and was again retained for the design and construction phase services.

Prior to this project, B&L successfully acquired a \$10,000,000 grant through the NYS Department of Environmental Conservation (DEC) Water Quality Improvement Program (WQIP) to mitigate the City's I/I sources identified in the SSES. Prior to beginning design, B&L reviewed the recommended sewer rehabilitations with the City and broke out the work into four separate contracts: 1) Manhole Rehabilitation, 2) Cured-in-Place Pipe (CIPP) Lining, 3) Spot Repairs with CIPP Lining, and 4) Spot Repairs.

For each of these four contracts, B&L prepared plans, specifications, and contract documents for repairs to the City's sanitary sewer collection system including repairs to manholes and sewer mains. Manhole repairs included cover replacement and rehabilitation, interior manhole lining, bench repairs, step installation and replacement, and manhole replacement. Sewer rehabilitations included open cut replacement of sewer line, cast-in-place pipe (CIPP) lining, packer injection grouting, root removal, and intrusion cutting. To reduce cost and maximize the grant funds for the City, B&L evaluated locations where sewer mains with extreme damage could be partially spot repaired with a follow-up lining, saving the City costs on extensive, cumbersome, and unnecessary excavations to repair their sewer pipes. B&L is presently performing construction administration and inspection services for the City of Rye as these repairs are being performed, with the anticipation that the construction phase will be complete in advance of the City's final court order milestone.

All completed work has been continuously updated on the City asset management system to provide updates and progress to the City DPW staff daily.

Project Cost:
\$13,700,000

Project Completion Date:
December 2024



City of Rye Inflow and Infiltration Investigation

Rye, New York

B&L has been working with the City of Rye on a phased approach to an inflow and infiltration (I&I) investigation for the City's sanitary sewer collection system. The City's system contains 53.5 miles of sewer and eight pump stations and is being investigated by priority area. The City commenced the study after they were cited by the NYSDEC office and given a consent order decree.

Phases 1 and 2, which have been completed, included:

- **Flow Monitoring** – 37 flow monitors were placed throughout the collection system to capture dry and wet weather flows in 2017. From the flow metering data, the flow in gallons per capita per day were determined based upon the population within each sub-catchment area. Based on the data, select areas were prioritized to conduct Phase 2 field investigations.
- **Phase 2 field investigation** consisted of smoke testing, manhole inspections, and CCTV of approximately 30,000 linear feet of collection pipe.
- **Results of the investigations** included location of storm drain connections, and manholes with infiltration via offset covers or cracked structures.
- **Numerous deficiencies** were identified via CCTV including separated CIP liners, missing sections as well as cracked pipes.
- **The summary report** included capital costs for repair of all major deficiencies located within Phase 2 investigations. The improvements are estimated at \$2.7 million.

Phase 3, conducted throughout 2018 and completed in January 2019, included:

- **Manhole inspections** for the remainder of the collection system (another 1,100 manholes).
- **Smoke testing** of second-level priority areas.
- **CCTV** of approximately 90,000 feet of pipe.
- **A summary report** was prepared presenting the field investigations and recommendation for capital improvements. Over \$12.3 million in high-priority, long-term improvements were identified in Phase 3 and targeted to be completed over the next seven years.

B&L assisted the City with the preparation of a WQIP grant for which the City was awarded \$3,964,500 to fund \$5,286,000 in the first round of capital projects.

Project Cost:
\$653,000

Project Completion Date:
Phase 1—2017
Phase 2—2017



City of Rye

Cartegraph Implementation

Rye, New York

The City of Rye received a stipulated order from Save the Sound and Atlantic Clam Farms of Connecticut, Inc. that requires work in the wastewater collection and sewer systems management as well as operational measures. B&L is working with the City to review, select, and implement a software system that will meet the City's needs.

B&L supported the City's data collection efforts and adequately configuring the data to be loaded into Cartegraph. Once loaded, key City users met with B&L team members for a more detailed review of its applications and functionality. System requirements, details, data, interfaces, and reports were collected and documented. B&L lead a thorough planning process to define how the City will use Cartegraph and will configure to integrate with the City's GIS data for the collection system. B&L also provided user training for the appropriate City staff members and technical assistance to support project progress.

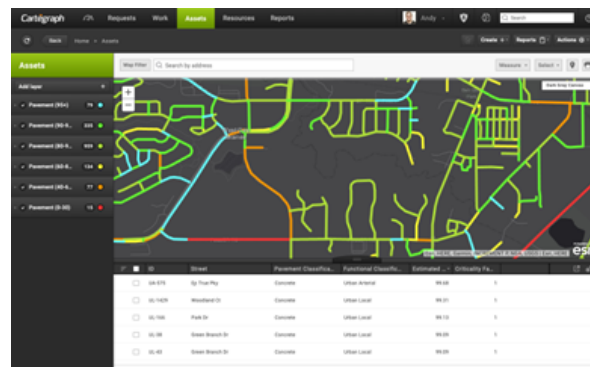
This project provides the City of Rye with a centralized data repository for all their collection system assets. Cartegraph helps the City facilitate the management of sewer system assets. It enables tracking and monitoring of the condition of pipes and manholes.

The successful implementation of this project has not only demonstrated the effectiveness of Cartegraph in managing our sewer system but has also inspired the City of Rye to extend its use to assist in the management of our stormwater system. Recognizing the benefits and efficiency gained, the City has chosen to leverage the capabilities of Cartegraph to enhance the overall management and maintenance of its stormwater infrastructure.



Project Cost:
\$48,000

Project Completion Date:
Ongoing



Village of Dolgeville Main Street Sewer Improvements

Dolgeville, New York

The Village of Dolgeville's sanitary sewer collection system, constructed in the early 1900s, has elevated levels of inflow and infiltration (I&I), resulting in increased flow at the Village's wastewater treatment plant (WWTP). I&I studies have indicated that the sewer system has deteriorated and is in need of repair, particularly along South and North Main Street. Defects in sewer pipelines and manholes can contribute to increased I&I, and the observed issues in the Village of Dolgeville's sewer system should be repaired to maintain service and reduce flow to the WWTP. The Village of Dolgeville also has an underdrain system running parallel to the sewer mainlines.

B&L was retained to prepare plans and specifications to complete the rehabilitation and replacement of the sanitary sewer collection system along North and South Main Street, along with replacing section of sewer mains along Baker Street, Elm Street, and North Helmer Avenue. Sections of the sewer system along South and North Main Street will be fully replaced or will receive cured-in-place-pipe (CIPP) liner. Along North Main, the project will also include the replacement of the existing water mains and storm sewers which were damaged by the flood of 2019. Existing lateral connections to the sewer system will be replaced. Additionally, pipe sections and manholes of the existing underdrain system will be capped or rerouted to the stormwater collection system.

The repair to the sanitary sewer collection system will be comprised of the following:

- Full length replacement: 9,300 linear feet (8-, 10-, 12-, and 15-inch diameter pipe)
- Full length CIPP lining: 1,800 linear feet
- Water main replacement: 1,800 linear feet with 36 services
- Storm sewer replacement: 1,300 linear feet with 12 drainage structures
- North Main Street full road replacement

Project Cost:
\$12 Million

Project Completion Date:
Ongoing



Town of Seneca Falls

Sanitary Sewer Rehabilitation and Storm Sewer Improvements

Seneca Falls, New York

The Seneca Falls sanitary sewer system was originally constructed in the 1920s as a combined sanitary and storm sewer system. The system was later separated by constructing new sanitary sewers and utilizing the original system for storm sewers. Historically, the Seneca Falls wastewater treatment plant (WWTP) has experienced elevated flows during seasonal wet weather events. In 1989, the Village added a 3-million-gallon, off-line, wet weather equalization tank at the WWTP, which allowed peak flows associated with wet weather events to be diverted to the equalization tank. In 2008, the Village received a consent order from NYSDEC requiring identification and correction of cross connections between the storm and sanitary sewer. Due to dissolution of the Village of Seneca Falls in 2011, the Town acquired the Village's WWTP and sanitary sewer collection system.

In 2014, the Town of Seneca Falls was awarded an engineering planning grant and authorized B&L to prepare a sanitary sewer evaluation survey (SSES) of its northern service area. The SSES included a flow monitoring program that concluded inflow was also prevalent in the southern service area south of the canal, and the survey was expanded. The Town board subsequently authorized B&L to perform additional manhole inspections and CCTV inspections of suspected inflow and infiltration (I&I) sources along the areas south of the Seneca River. The combined inspections were compiled into a revised SSES report. As part of this effort, B&L assisted the Town in applying for a Water Infrastructure Improvement Act (WIIA) grant from New York State Environmental Facilities Corporation's (NYS EFC), which was awarded to the Town in 2017. Final design documents were subsequently completed and the project construction commenced in summer 2019 and is currently at substantial completion.

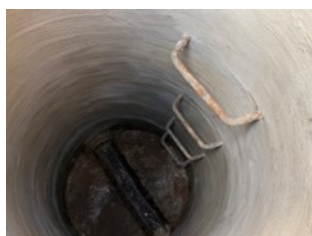
The final project design included trenchless rehabilitation methods (i.e., manhole lining, mainline CIPP lining, lateral lining). Trenchless methods were supplemented with several open-cut repairs to fix severe deficiencies or storm sewer cross connections within mainline pipe segments as well as replacement of damaged sewer sections. As part of the project, additional CCTV inspections were included with a project allowance to leverage additional inspections and relining of approximately 11,000 additional linear feet during implementation.

The final project included the following components:

1. Sewer relining (CIPP): 17,700 linear feet
2. Sewer replacement: 163 linear feet
3. Manhole rehabilitation (lining/grouting): 50 manholes
4. Manhole replacement: 5 manholes
5. Manhole frame and cover replacement: 64 manholes
6. Rerouting 441 linear feet of 24-Inch storm sewer
7. Rerouting two storm sewer overflows into new catch basins

Project Cost:
\$3.01 Million

Project Completion Date:
I&I Study– 2015
Construction–2020



Village of Mohawk Sanitary Sewer Rehabilitation

Mohawk, New York

The Village of Mohawk currently owns and maintains a sanitary sewer collection system that provides service to the entire Village. Initially constructed in the early 1900s, the sanitary sewer system was constructed around the former Erie Canal and conveyed to a treatment facility on the northern side of the Village. The original Village treatment facility was removed from service when Herkimer County constructed its “regional” wastewater treatment plant. Since that time, additional sections of gravity sewer have been extended from the original sanitary system throughout the 1970s and 1980s.

In 2016, B&L assisted the Village in securing a New York State Clean Water State Revolving Fund (CWSRF) Engineering Planning Grant (EPG) to prepare a preliminary engineering report (PER), dated August 2017, for an inflow and infiltration evaluation. This grant money was applied to this study with the goal of identifying areas of the public sanitary sewer collection system in need of structural rehabilitation. A primary focus of the study was aimed at the reduction of extraneous sources of clean water in the form of inflow and infiltration (I&I). The Village received a funding hardship determination letter, dated December 20, 2017, indicating that the proposed \$6.8 million Village collection system improvements project was eligible for CWSRF hardship funding with interest-free financing for a term of up to 30 years. Additionally in December 2019 the Village received an award for a New York State Water Infrastructure Improvement Act (NYS WIIA) grant totaling 25% of the project cost or \$1,524,500.

The initial field work for the PER was conducted by B&L throughout the late spring and summer of 2017. Additional field investigations consisting of CCTV inspection of the remaining Village sanitary sewer system (approximately 20,000 linear feet) was conducted in the fall of 2018, which helped develop a system-wide rehabilitation design. Rehabilitation design of existing system components was developed utilizing trenchless rehabilitation methods (i.e., manhole rehabilitation, mainline CIPP lining, lateral lining) to minimize disturbance of Village streets and utilities during the construction phase. Trenchless methods are supplemented with open-cut repairs to fix severe deficiencies within mainline pipe segments.

Project Cost:
\$3.01 Million

Project Completion Date:
I&I Study– 2017
Construction—2021



Town of East Fishkill On-Call Engineering Services

East Fishkill, New York

The Town of East Fishkill retained the services of B&L in May 2023 to provide on-call engineering services within the Town's Engineering and Water/Sewer Departments. B&L staff typically spends one day per week at the Town Hall assisting Town Engineering staff on a variety of engineering items.

Generally, projects and tasks have included the following:

- Potable water hydraulic modeling for residential and commercial developments utilizing WaterCAD,
- Cut and fill analysis of residential properties utilizing AutoCAD Civil 3D,
- Water system improvements preliminary engineering report (PER) review and recommendations, and
- Water infrastructure grant application review and recommendations.

Project Cost:
N/A

Project Completion Date:
Ongoing





References

City of Rye

Eric Kingsbury
Assistant Superintendent
1051 Boston Post Road
Rye, New York 10580
914-967-7464
ekingsbury@ryeny.gov



Village of Dolgeville

Chester P. Szymanski III, P.E.
Village of Engineer
Village of Dolgeville
41 Main Street
Dolgeville, New York 13329
315-429-3112
mayorpuznowski@gmail.com

Village Of Dolgeville

Town of East Fishkill

George Cronk
Assistant Town Engineer
Town of East Fishkill
330 NY-376
Hopewell Junction, New York 12533
845-226-7079





SECTION 2

TECHNICAL PROPOSAL

CITY OF POUGHKEEPSIE

FALLKILL TRUNK SEWER

REHABILITATION PROJECT

Section 2: Technical Proposal

Project Management Plan

For the Construction Administration services, B&L's project management plan starts with forming a team with the City staff and to ensure that all of the City's needs are appropriately understood by B&L and that the project moves forward in an expeditious manner only once this understanding is achieved. This starts with our project manager and construction manager, who will ensure both solid communication with the City and that sufficient resources are made available to complete the work on schedule.

Our current professional services contract goes through bidding services for this project. Once the bids are received and the contractor selected the project manager, in conjunction with the Construction Manager, will kickoff with the City to hit the ground running on the project and establish good lines of communication from the beginning. This is a proven method to help keep projects on schedule and ensure the City's needs and timeframe are met.

Once following the kick-off meeting with the City, the Construction Manager will set up the pre-construction meeting with the Contractor to establish the construction schedule and anticipated subcontractors as well as ensure the necessary DBE and M/WBE paperwork is obtained to meet the funding agency requirements.

At a minimum monthly meetings will be held with the Contractor, typically via zoom, to discuss:

- Submittals and Review Status
- Construction Schedule and Progress
- Coordination Issues with the City
- Payment Procedures and Payment Application
- Inspection Needs

As part of our PMP, we are partnering with another subconsultant to provide construction observation services to meet the DBE requirements of EFC. Three firms are listed in our organization chart. Two of the firms listed, **Geovation** and **CivilTec**, have worked on numerous B&L projects providing construction observation services. A third firm, KARC Planning Consultants, offers a possible local connection and could be included in the project staffing.

As the construction contractor has not been determined, an exact schedule for the inspection services is not known. Once an estimate on the timing is established by the City, B&L typically solicits firm quotes from the

available subcontractors along with resumes of their available staff for the project. Each firm will have varying rates and additional requirements such as travel time and mileage. B&L works to review this information with the City and will jointly make the most economic decision for the City that meets B&L quality requirements.

B&L believes it is imperative to select a construction inspector based on qualifications due to the specialty nature of the work and not solely on price. They are the eyes and ears representing B&L that need to make informed decisions to ensure the City has a quality product once completed.

Our project manager will be responsible for coordinating the efforts of our partners to keep communication open throughout the team.

Once a contractor is selected and schedule established the B&L team will undertake the following construction administration Tasks:

Contract Administration – It is anticipated that construction administration services will take 12 months from award to final close out, and the activities described below are included:

- a. B&L will prepare conformed copies of successful bidder's submittal for contract execution.
- b. Conduct a pre-construction conference with the Contractor and issue a Notice to Proceed.
- c. Review shop drawings and submittals for the material and equipment to be incorporated into the project for conformance with the contract documents.
- d. Review contractor's payment applications (total of six partial payments estimated), and submit same to the City for processing.
- e. Review change order documentation and provide the City with recommendations regarding acceptance. Prepare change order documentation for appropriate change orders, if necessary.
- f. Defective Work: Reject work if, on the basis of Engineer's observations, Engineer believes that such work: (a) is defective under the standards set forth in the contract documents, (b) will not produce a completed Project that conforms to the contract documents, or (c) will imperil the integrity of the design concept of the completed Project as a

functioning whole as indicated by the contract documents.

- g. Clarifications and Interpretations; Field Orders: Issue necessary clarifications and interpretations of the contract documents as appropriate to the orderly completion of Contractor's work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the contract documents. Subject to any limitations in the contract documents, Engineer may issue field orders authorizing minor variations in the work from the requirements of the contract documents.
- h. Inspections and Tests: Require such special inspections or tests of Contractor's work as deemed reasonably necessary, and receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the contract documents.
- i. Disagreements between Owner and Contractor: Render formal written decisions on all duly submitted issues relating to the acceptability of contractor's work or the interpretation of the requirements of the contract documents pertaining to the execution, performance, or progress of Contractor's work; review each duly submitted Claim by Owner or Contractor, and in writing either deny such Claim in whole or in part, approve such Claim, or decline to resolve such Claim if Engineer in its discretion concludes that to do so would be inappropriate.
- j. Following construction of the project, B&L will conduct a final on-site project review, issue a Notice of Substantial Completion, provide construction certification to the approval agencies for work completed in accordance with the approved plans and specifications, and provide completed construction drawings for the new facilities. Completed construction drawings will be prepared in AutoCAD Civil 3D using record drawings from the contractor and our inspection notes and reports.

Construction Observation Services – Duties of the Construction Observer (CO) will be as follows:

- a. Conduct construction observation of the work in progress in determining if the work is proceeding in accordance with the approved Contract Plans. The CO shall not advise or issue directions regarding, or assume control over, safety precautions and programs in connection with the work.
- b. Report whenever the CO believes that any work will not produce a completed project that conforms to the contract plans and specifications, or has been damaged or does not meet the requirements of any inspection, test, or approval required to be made; and advise of work that CO believes should be corrected or rejected.
- c. Report when clarifications and interpretations of the Contract Plans are needed.
- d. Prepare progress reports for each visit to the construction site, recording contractor's activities, and progress of the work.
- e. Be present during system testing to verify that performance is in accordance with Contract Plans, Specifications, and intended function.

The amount of time required for construction administration and observation is dependent on the Contractor's progress and anticipated start date. For the fee portions, based on our experience, we have estimated what we feel is a reasonable time frame for completion of the work, and have estimated the time required for construction administration and observation accordingly. In addition, as B&L experienced with our 4 sewer rehabilitation projects in Rye NY in 2024, some contractors are very aggressive with their schedule and may have multiple crews working in different areas of the City. This would dictate multiple inspectors to ensure coordination and quality control.

Schedule

B&L Proposes an overall schedule of twelve months to complete the construction administration services described in this RFQ.

The proposed schedule is shown below and will be contingent on the contractors schedule and actual progress:

Milestone	Completion Date
Contract Award	January 1, 2025
Notice to Proceed	February 2025
Submittals	March 2025
Construction Observation	April 1 – September 30, 2025
Project Closeout	December 2025

Funding Experience

Municipal wastewater projects are prohibitively expensive to system users. Because of this, our team provides funding assistance services through grant writing and administration. Our engineers have worked with New York State Revolving Fund programs for sewer and water projects, such as the New York State Environmental Facilities Corporation's Drinking Water State Revolving Fund and Clean Once funding is obtained—whether through grant programs, loans, or co-funding—our team often assists with funding program administration throughout project development, construction, and closeout. A table outlining our success with funding including NYSEFC, BIL, and Water Infrastructure Improvement Act (WIIA) NYSDEC's WQIP, and EPA's STAG grants for our clients is below:

Year	Grant Type	Name	Description	BIL/SRF Grant Award	0% Interest Loan
2023	DW BIL	Mayville, Village of	Water System Improvements	\$5,000,000	\$2,640,540
2023	DW BIL	New Berlin, Village of	Water System Improvements	\$5,000,000	\$7,397,000
2022	CW Hardship	Brutus, Town of	Sanitary Sewer Extension	\$0	\$13,771,000
2023	DW BIL	Chautauqua, Town of	Water System Extension	\$5,000,000	\$4,591,360
2022	DW BIL	Massena, Town of	Water System Extension	\$5,000,000	\$4,270,000
2022	DW BIL	Portville, Village of	Water System Extension	\$785,971	\$1,622,559
2023	CW BIL	Mina, Town of	Findley Lake Sewer District	\$15,358,000	\$15,358,000
2023	CW BIL	Geneseo Village of	WWTP Upgrades	\$8,552,000	\$8,552,000
2023	CW Hardship	Randolph, Town of	UV Disinfection	\$0	\$4,766,800
2023	CW Hardship	Canisteo, Village of	UV Disinfection	\$0	\$5,650,000
2023	CW Hardship	Portville, Village of	WWTP Upgrades	\$0	
2023	CW BIL	Remsen, Village of	Wastewater Treatment Facility Disinfection	\$152,500	
2022	CW BIL, PF	Port Leyden, Village of	WWTF Improvements	\$713,000	
2022	DW BIL-LSLR	Warwick, Village of	Lead Service Line Inventory	\$575,770	\$0
2022	DW BIL-GS	Woodridge, Village of	Distribution System Upgrades	\$5,000,000	\$3,800,000
2022	CW Hardship	Portville, Village of	Collection System/Headworks	\$0	
2022	CW Hardship	South Dayton, Village of	UV Disinfection	\$0	\$388,400
2021	CW Hardship	Cherry Creek, Town of	WWTP Upgrades	\$0	\$786,500
2023	DW BIL	Turin, Village of	Water System Improvements	\$4,866,750	\$2,085,750
2022	DW Hardship	Little Valley, Village of	Water System Improvements	\$3,010,000	\$2,940,000
2022	DW Hardship	South Dayton, Village of	Water System Improvements	\$2,275,000	\$975,000
2021	DW Hardship	Sherman, Village of	Water System Improvements	\$1,440,600	\$960,400
2021	DW Hardship	Andover, Village of	Water System Improvements	\$3,000,000	\$2,900,000

NYSDEC Water Quality Improvement Project (WQIP) Awards

Year	County	Community	Project Name	Program	Grant Award
2022	Clinton	City of Plattsburgh	City of Plattsburgh Beach Restoration and Green Infrastructure Project	DEC WQIP	\$817,525
2022	Broome	Town of Chenango	Town of Chenango Wastewater Treatment Improvement at Northgate Facility	DEC WQIP	\$10,000,000
2022	Cattaraugus	Town of Randolph	Town of Randolph Wastewater Treatment Facility Disinfection	DEC WQIP	\$571,200
2022	Lewis	Village of Copenhagen	Village of Copenhagen Wastewater Treatment Facility Disinfection	DEC WQIP	\$622,200
2022	St. Lawrence	Town of Hermon	Town of Hermon Wastewater Treatment Facility Disinfection	DEC WQIP	\$718,400
2022	Washington	Washington County	Washington County John Street and County Route 37 Drainage Improvement Project	DEC WQIP	\$400,000
2021	Oswego	Town of Constantia	Town of Constantia Northshore Sewer Project	DEC WQIP	\$4,600,000
2021	Clinton	Village of Champlain	Village of Champlain Wastewater Treatment Facility Disinfection	DEC WQIP	\$864,000
2021	St. Lawrence	Town of Clifton	Town of Clifton Newton Falls Wastewater Treatment Plant Disinfection	DEC WQIP	\$352,000
2021	Oneida	Village of Boonville	Village of Boonville Wastewater Treatment Facility Disinfection	DEC WQIP	\$1,000,000
2021	Chautauqua	Village of Lakewood	Village of Lakewood Grandview Stormwater Management Project	DEC WQIP	\$250,064
2021	Wyoming	Town of Pike	Town of Pike Salt Storage Shed	DEC WQIP	\$331,334
2021	Saratoga	Saratoga County Sewer District No. 1	Saratoga County Wastewater Treatment Plant Ammonia Removal Project	DEC WQIP	\$10,000,000

2021	Oneida	City of Sherrill	City of Sherrill Wastewater Treatment Plan Disinfection	DEC WQIP	\$1,000,000
2021	Cattaraugus	Village of South Dayton	Village of South Dayton Wastewater Treatment Facility Disinfection	DEC WQIP	\$357,600
2021	Cayuga	Village of Union Springs	Village of Union Springs Wastewater Treatment Plant Improvements	DEC WQIP	\$4,480,000
2019	Schenectady	Town of Rotterdam	Town of Rotterdam Salt Storage	DEC WQIP Salt	\$357,000
2018	Westchester	City of Rye	Sanitary Sewer Overflow - Sewer Rehabilitation Phase 1	DEC WQIP CSO	\$3,964,500
2018	Onondaga	Village of Fayetteville	Limestone Creek and Bishop Brook Bank Stabilization & Riparian Buffer Improvements	DEC WQIP NPS	\$522,000
2018	Jefferson	Town of Theresa	Salt Storage	DEC WQIP Salt	\$325,000
2018	Yates	Village of Dundee	Wastewater Treatment Plant and Sewer Improvements and Disinfection	DEC WQIP WWT	\$268,000
2018	Broome	Town of Chenango	Wastewater Treatment Plant Improvements	DEC WQIP WWT	\$1,000,000
2018	Jefferson	Village of Adams	Water Pollution Control Facility Disinfection	DEC WQIP WWT	\$1,000,000
2016	Madison	Town of Brookfield	Town of Brookfield Salt Storage Facility	DEC WQIP NPS	\$456,375
2015	Madison	Town of Hamilton	Town of Hamilton Salt Storage Facility	DEC WQIP NSAC	\$255,000
2015	Fulton	Gloversville- Johnstown Wastewater Treatment Facility	Gloversville- Johnstown Wastewater Disinfection Project	DEC WQIP WTI	\$1,100,000
2015	Sullivan	Village of Monticello	Monticello Wastewater Disinfection Project	DEC WQIP WTI	\$2,500,000
2002	Washington	Village of Greenwich	Village of Greenwich Wastewater Treatment Plant - Disinfection	DEC WQIP	\$304,000
Total					\$48,416,198

Total of B&L Assisted NYSEFC Water Infrastructure Improvement Act (WIIA) Grants (2015-2022)					
Year	Project Type		County	Project Cost	Grant Award
2022	Clean Water (Sewer)	City of Binghamton	Broome	\$11,015,000	\$2,753,750
2022	Clean Water (Sewer)	Village of Boonville	Oneida	\$8,800,000	\$2,200,000
2022	Clean Water (Sewer)	Village of Champlain	Clinton	\$3,336,000	\$834,000
2022	Clean Water (Sewer)	City of Peekskill	Westchester	\$4,300,000	\$1,075,000
2022	Drinking Water (IMG)	Herkimer IDA	Herkimer	\$23,397,000	\$9,358,800
2022	Drinking Water	Village of Herkimer	Herkimer	\$17,498,670	\$2,000,000
2022	Drinking Water	Village of Jordan	Onondaga	\$8,513,700	\$2,000,000
2021	Drinking Water	Town of Orwell	Oswego	\$2,939,000	\$1,763,400
2021	Drinking Water	Town of Schuyler	Herkimer	\$5,926,000	\$3,000,000
2021	Clean Water (Sewer)	Town of Seneca Falls	Seneca	\$6,840,000	\$1,710,000
2021	Drinking Water	Village of Aurora	Cayuga	\$10,370,000	\$3,000,000
2021	Drinking Water	Village of Copenhagen	Lewis	\$1,101,000	\$660,600
2021	Drinking Water	Village of Cuba	Allegany	\$7,275,799	\$3,000,000
2021	Drinking Water	Village of Elbridge	Onondaga	\$5,109,219	\$3,000,000
2021	Drinking Water	Village of Frankfort	Herkimer	\$8,415,000	\$3,000,000
2021	Drinking Water	Village of Herkimer	Herkimer	\$19,998,000	\$3,000,000
2021	Clean Water (Sewer)	Village of Herkimer	Herkimer	\$19,991,000	\$9,995,500
2021	Drinking Water	Village of Ilion	Herkimer	\$6,104,000	\$3,000,000
2021	Drinking Water	Village of Portville	Cattaraugus	\$5,408,530	\$3,000,000
2021	Clean Water (Sewer)	Village of Portville	Cattaraugus	\$9,689,656	\$2,422,000
2021	Clean Water (Sewer)	City of Amsterdam	Montgomery	\$17,200,000	\$4,300,000
2021	Drinking Water	City of Peekskill	Westchester	\$5,000,000	\$3,000,000
2021	Drinking Water	Madison County	Madison	\$2,680,000	\$1,608,000
2021	Clean Water (Sewer)	Saratoga County	Saratoga	\$20,350,000	\$5,087,500
2021	Drinking Water	Town of Cape Vincent	Jefferson	\$6,321,000	\$2,300,000
2021	Drinking Water	Town of Edmeston	Otsego	\$6,388,000	\$3,000,000
2021	Drinking Water	Town of Elbridge	Onondaga	\$7,849,987	\$3,000,000
2021	Drinking Water	Town of Hermon	St. Lawrence	\$7,650,000	\$3,000,000
2021	Drinking Water	Town of Hounsfield	Jefferson	\$5,447,000	\$3,000,000
2019	Clean Water (Sewer)	Town of Constantia	Oswego	\$39,015,000	\$5,000,000
2019	Drinking Water	Town of Crawford	Orange	\$3,852,800	\$2,311,680
2019	Clean Water (Sewer)	Town of Hounsfield	Jefferson	\$2,504,400	\$626,100
2019	Clean Water (Sewer)	City of Oneida	Madison	\$44,055,000	\$5,000,000
2019	Drinking Water	Onondaga County WA	Onondaga	\$2,500,000	\$1,500,000

Year	Project Type	Applicant Name	County	Project Cost	Grant Award
2019	Drinking Water	Town of Pamelaia	Jefferson	\$13,990,000	\$3,000,000
2019	Clean Water (Sewer)	Village of Sherman	Chautauqua	\$3,922,000	\$980,500
2019	Clean Water (Sewer)	City of Sherrill	Oneida	\$7,000,000	\$1,750,000
2018	Drinking Water	Town of Martinsburg	Lewis	\$3,100,000	\$1,860,000
2018	Drinking Water	City of Mechanicville	Saratoga	\$255,000	\$153,000
2018	Drinking Water	Town of Petersburg	Rensselaer	\$1,234,950	\$740,970
2018	Drinking Water	Village of Ravena	Albany	\$3,970,000	\$2,382,000
2018	Clean Water (Sewer)	City of Rome	Oneida	\$12,000,000	\$3,000,000
2018	Clean Water (Sewer)	City of Rye	Westchester	\$1,959,000	\$489,750
2018	Drinking Water	Town of Sandy Creek	Oswego	\$11,466,000	\$3,000,000
2018	Drinking Water	Town of Verona	Oneida	\$25,928,000	\$3,000,000
2018	Clean Water (Sewer)	Town of Verona	Oneida	\$107,620	\$90,212
2018	Clean Water (Sewer)	Village of Warwick	Orange	\$12,248,000	\$3,062,000
2018	Clean Water (Sewer)	Town of Webster	Monroe	\$12,000,000	\$3,000,000
2018	Clean Water (Sewer)	Town of Chenango	Broome	\$21,200,000	\$5,000,000
2018	Clean Water (Sewer)	Village of Clayton	Jefferson	\$8,830,000	\$2,207,500
2018	Clean Water (Sewer)	Village of Dundee	Yates	\$8,231,000	\$2,057,750
2018	Drinking Water	Village of Greenwich	Washington	\$6,337,000	\$3,000,000
2018	Clean Water (Sewer)	Village of Homer	Cortland	\$1,730,000	\$432,500
2018	Clean Water (Sewer)	Village of Ilion	Herkimer	\$10,167,995	\$2,541,999
2017	Clean Water (Sewer)	Village of Adams	Jefferson	\$4,273,000	\$1,068,250
2017	Drinking Water	Town of Bethlehem	Albany	\$15,332,000	\$3,000,000
2017	Drinking Water	Town of Fine	St. Lawrence	\$5,308,000	\$1,000,000
2017	Clean Water (Sewer)	Village of Frankfort	Herkimer	\$6,200,000	\$1,550,000
2017	Drinking Water	Town of Hastings	Oswego	\$17,140,000	\$3,000,000
2017	Drinking Water	Town of Hounsfield	Jefferson	\$1,368,000	\$820,800
2017	Clean Water (Sewer)	Town of Niles	Cayuga	\$352,000	\$88,000
2017	Clean Water (Sewer)	Town of Owasco	Cayuga	\$1,545,726	\$386,432
2017	Clean Water (Sewer)	Town of Rosendale	Ulster	\$2,480,000	\$620,000
2017	Clean Water (Sewer)	Town of Seneca Falls	Seneca	\$2,950,000	\$737,500
2017	Drinking Water	Town of Sullivan	Madison	\$5,120,000	\$2,910,000
2016	Drinking Water	Village of Adams	Jefferson	\$3,979,042	\$2,387,425
2016	Drinking Water	Town of Clifton	St. Lawrence	\$3,900,000	\$2,340,000
2016	Drinking Water	Town of Constantia	Oswego	\$4,723,000	\$2,833,800
2016	Drinking Water	Town of Denmark	Lewis	\$2,500,000	\$1,500,000
2016	Clean Water (Sewer)	Town of Elizabethtown	Essex	\$8,550,000	\$2,137,500
2016	Drinking Water	Town of Hounsfield	Jefferson	\$205,680	\$123,408
2016	Clean Water (Sewer)	Village of Potsdam	St. Lawrence	\$10,710,000	\$2,677,500
2016	Clean Water (Sewer)	Village of Vernon	Oneida	\$6,000,000	\$1,500,000
2015	Clean Water (Sewer)	Village of Malone	Franklin	\$12,510,000	\$3,127,500
2015	Drinking Water	City of Mechanicville	Saratoga	\$3,960,000	\$508,760
2015	Clean Water (Sewer)	Villages of Watkins Glen-Montour Falls	Schuyler	\$22,547,099	\$5,000,000
Totals				\$664,170,873	\$184,571,386



FORMS
QUALIFICATIONS PROPOSAL

CITY OF POUGHKEEPSIE
FALLKILL TRUNK SEWER
REHABILITATION PROJECT

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

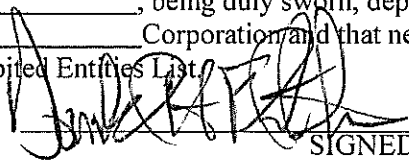
By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the City receive information that a Bidder/Contractor is in violation of the above-referenced certification, the County will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the County shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

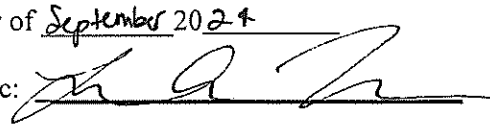
The County reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, Donald H. Fletcher, being duly sworn, deposes and says that he/she is the Executive Vice President of the Barton & Loguidice, D.P.C. Corporation and that neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.


SIGNED

SWORN to before me this

9th day of September 2021

Notary Public: 

LEIGH ANN MURPHY
NOTARY PUBLIC-STATE OF NEW YORK
No. 01MU6424730
Qualified in Rensselaer County
My Commission Expires 11-08-2025

Engineering Services for Fallkill Truck Sewer Rehabilitation

RFQ-06-24-03

Bid Addendum Acknowledgement Sheet

All addenda, the receipts of which are hereby acknowledged by inserting the dates of each addendum next to the appropriate numbers, have been included in this Bid and are listed below. Failure to properly acknowledge the addenda as set forth below may result in rejection of the bid.

Receipt of Addendum:

Addendum No. 1	yes
Addendum No. 2	
Addendum No. 3	
Addendum No. 4	
Addendum No. 5	
Addendum No. 6	
Addendum No. 7	

Vendor: Barton & Loguidice, D.P.C.



CITY OF POUGHKEEPSIE POUGHKEEPSIE, NEW YORK

RFQ-COP-06-24-03 ENGINEERING SERVICES FOR FALLKILL TRUNK SEWER REHABILITATION PROJECT

ADDENDUM NO. 1

This addendum contains Questions and Answers

Responses to Questions Received for RFQ COP -06-24-03

Q: We would like to clarify that this RFQ is for an already designed project which requires Engineering firm to administer, Construction Administration and close-out the project and does not involve Design-Build? The project will be BID as per the BID documents provided for the selection of a contractor.

Response: This is to clarify that the project is already designed and is presently at 90% design level with contract documents. These documents are currently under review by NYSEFC. The RFQ does not request design build. The work requested in the RFQ includes construction administration and observation services. The project will be publicly bid and constructed by a contractor.

Q: The RFQ requests cost Proposal. Does that mean the City is looking for Hourly rates for all the personnel that will be involved with the Administering, and CA for this project? Or the City is looking for Project fees for these services?

Response: The city is requesting fees for the various services/tasks outlined in the consultant's proposal to carry out the requested CA/CI work. Hourly rates are not necessarily required. If subcontractors are expected to be utilized, they should be identified.

Q: If the RFQ requires field investigation as mentioned in Section A, Page 7 of the RFQ (like Surveying, Geo-tech etc. to properly design the sewer system), Can you clarify if the field investigation is for Construction Admin Services ?

Response: Field Investigation tasks are intended to support Construction Administration and Construction Observation services. Fees for this work should be included in the cost proposal. To clarify, the city is not requesting design services, as a result, specific field investigations for design are not included in the RFQ scope.

Q: Can the prime consultant provide the required sub-consultant information and fees at the time of CA services or the RFQ requires providing the necessary sub-consultant information at the time of submitting this Proposal for the RFQ.

Response: It is requested that proposed subconsultants/subcontractors be included and identified in the firm's proposal at the time of submission.

Q: At the top of page 7 of the subject RFQ is an item titled Field Investigations. This item gives examples of field work that might be necessary “to properly design the sewer system improvements.” Upon a review of the documents, the work design appears to be fully complete. Is the City agreeable to removing the Field Investigations item from the subject RFQ scope of services?

Response: Field Investigation tasks are intended to support Construction Administration and Construction Observation services. Fees for this work should be included in the cost proposal. To clarify, the city is not requesting design services, as a result, specific field investigations for design are not included in the RFQ scope.

Q: In the RFQ-COP-06-24-03, under the submittal requirements, there is no mention of a FEE PROPOSAL, however on page 10 of the RFQ is states “Please include your cost proposal in a separate envelope “Is there a fee proposal submission required for this RFQ due on September 11, 2024?

Response: Please include your fee/cost information with your proposal in a separate envelope.

Q: Has design been initiated or completed on the Fallkill Trunk Sewer Rehabilitation Project?

Response: Yes, the design has been completed and submitted to NYSDEC/EFC.

Q: If so, are the design and construction bidding documents available for review?

Response: Documents can be downloaded from the following link: https://copny-my.sharepoint.com/:f:/g/personal/jchenier_cityofpoughkeepsie_com/EmJ9MqCGEOhLrG--CdNY1bgBF4rg872PQaBAkW_zyelkHQ?e=gz4oy6

Q: Has the City awarded the construction contract for the subject project?

Response: No, the City has not yet been authorized by NYSEFC to bid the work. The documents are still under review.

Q: Completing the subject project construction work in 1 to 1-1/2 construction seasons could reduce construction administration costs. Is the City interested in discussing the possibility of shortening the project duration (3 year period given in the RFQ) and term of the subject contract (approximately 5 years given in the RFQ)?

Response: The three-year window outlined in the RFQ relates the maximum time to complete the construction and perform final closeout per the grant conditions. If you can expedite the work, it and reduce costs it is recommended to be identified in your proposal.

Q: The RFQ requests that cost proposals be submitted in a separate envelope. Are there any other formatting requirements for the cost proposal that we should be aware of?

Response: Please indicate fees for services by tasks if possible. There are no other specific formatting requirements.

Q: The City RFQ states that there is an engineering report that was prepared to develop the scope of work and contract scope for this Fallkill Trunk Sewer project. Would it be possible for you to send me a copy of the project report?

Response: Documents can be downloaded from the following link: https://copny-my.sharepoint.com/:f/g/personal/jchenier_cityofpoughkeepsie_com/EmJ9MqCGEOhLrG--CdNY1bgBF4rg872PQaBAkW_zyelkHQ?e=gz4oy6

Please acknowledge receipt of this addendum by including this receipt with your bid package!

Receipt of Addendum#

1

Signed: _____



Company Name: Barton & Loguidice, D.P.C.



Environmental Facilities Corporation

*B&L will ensure that this form will be completed by the Construction Contractor

BABA CONTRACTOR CERTIFICATION

FOR EQUIVALENCY CONSTRUCTION CONTRACTS PAID FOR WITH FUNDS THROUGH
THE NYS CLEAN WATER STATE REVOLVING FUND, OVERFLOW AND STORMWATER GRANTS
OR

THE NYS DRINKING WATER STATE REVOLVING FUND VIA THE
NYS ENVIRONMENTAL FACILITIES CORPORATION

Project Title:

Contractor's Name:

Contract ID:

SRF Project No.:

SRF Recipient Name:

I certify that all iron and steel, manufactured products and construction materials permanently incorporated into the project under this construction contract will be and/or have been produced in the United States, in accordance with the requirements of the United States Environmental Protection Agency and Pub. L. No. 117-58 and any regulations promulgated thereunder. I will develop and maintain the necessary documentation to demonstrate that the applicable products permanently incorporated into the project were produced in the United States and make such documentation available to The New York State Environmental Facilities Corporation or their authorized representatives, upon request.

Signature:

Name (print):

Title:

Date:



Environmental Facilities Corporation

*B&L will ensure that this form will be completed by the Construction Contractor

AIS CONTRACTOR CERTIFICATION
FOR CONSTRUCTION CONTRACTS FUNDED THROUGH
THE NYS CLEAN WATER STATE REVOLVING FUND, OVERFLOW AND STORMWATER GRANTS
OR
THE NYS DRINKING WATER STATE REVOLVING FUND VIA THE
NYS ENVIRONMENTAL FACILITIES CORPORATION

Project Title:

Contractor's Name:

Contract ID:

SRF Project No.:

SRF Recipient Name:

I certify that the iron and steel products permanently incorporated into the public water system or wastewater treatment works project under this construction contract will be and/or have been produced in the United States, in accordance with the requirements of the United States Environmental Protection Agency and 33 U.S.C. § 1388, 42 U.S.C. § 300j-12(a)(4) and any regulations promulgated thereunder. I will develop and maintain necessary documentation to demonstrate that the iron and steel products permanently incorporated into the project were produced in the United States, and make such documentation available to The New York State Environmental Facilities Corporation or their authorized representatives, upon request.

Signature:

Name (print):

Title:

Date:



Environmental Facilities Corporation

**New York State Environmental Facilities Corporation
CERTIFICATION REGARDING LOBBYING
FOR
CONTRACTS, GRANTS, LOANS, AND
COOPERATIVE AGREEMENTS
40 CFR Part 34**

SRF Project No.:

Recipient:

Project Description:

City of Poughkeepsie

Engineering Services for Fallkill Trunk Sewer Rehabilitation Project

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Signature:

Name:

Donald H. Fletcher

Title:

Executive Vice President

Company Name:

Barton & Loguidice, D.P.C.

Date:

September 10, 2024

Contract ID:



The Experience to **Listen**. The Power to **Solve**.
bartonandloguidice.com

**CITY OF POUGHKEEPSIE
POUGHKEEPSIE, NEW YORK**



**RFQ-COP-06-24-03
ENGINEERING SERVICES FOR FALLKILL TRUNK SEWER
REHABILITATION PROJECT**

Hon. Yvonne Flowers, Mayor

Joseph P. Donat, City Administrator

Council Member At Large

Da’Ron Wilson

Council Members

Ernest Henry
Evan Menist
Terricena Brown
Nathan Shook

Ondie James
Christopher Grant
Nedra Patterson Thompson
Megan Deichler

Return all bids to the: City of Poughkeepsie
Purchasing Department
62 Civic Center Plaza
Poughkeepsie, NY
12601

TO BE ADVERTISED: August 9, 2024

FOR ONE DAY ONLY

CITY OF POUGHKEEPSIE, NEW YORK
ADVERTISEMENT AND NOTICE TO BIDDERS

Beginning Immediately, Sealed proposals are sought and invited by the City of Poughkeepsie ("The City") for **Engineering Services for Fallkill Trunk Sewer Rehabilitation Project, Bid No. RFQ-COP-06-24-03**, as set forth in drawings and specifications prepared by the City of Poughkeepsie's Engineering Department.

Bids will be received by the Board of Contract and Supply, c/o Purchasing Agent, 62 Civic Center Plaza, Poughkeepsie, NY 12601 **until 2:30 pm on September 11, 2024**, after which time they will be publicly opened and read aloud in the Common Council Chambers located on the 3rd floor of City Hall. Proposals may be hand delivered at any time prior to the bid opening. Late proposals will not be accepted.

All Proposals must be submitted in a sealed envelope clearly marked:

PROPOSAL FOR BID # RFQ-COP-06-24-03: Engineering Services for Fallkill Trunk Sewer Rehabilitation Project

Specifications and Contract are subject to provisions of Chapter 605, Laws of the State of New York of 1959, Section 103-A of the General Municipal Law and Federal Procurement Regulations 24CFR Part 85.36.

This project is being funded in part by the EFC – Environmental Facilities Corporation. All work under this contract must comply with the requirements of this funding source. **There is a 20% goal for DBE** Participation and may contain special monthly reporting procedures.

The City of Poughkeepsie officially distributes bidding documents from the City of Poughkeepsie Purchasing Office, the City of Poughkeepsie website, www.cityofpoughkeepsie.com, the Hudson Valley Municipal Purchasing Group (HVMPG) Regional Bid Notification System, www.bidnetdirect.com/new-york, and the NY State Contract Reporter, www.nyscr.ny.gov. Copies of bidding documents obtained from any other source are not considered official copies. Only those vendors who obtain bidding documents from the Purchasing Office, the City of Poughkeepsie website, HVMPG Regional Bid Notification System or the NY State Contract Reporter will be sent addendum information, if such information is issued.

If you have obtained this document from a source other than the City of Poughkeepsie Purchasing Office, City of Poughkeepsie website, HVMPG Regional Bid Notification System or the NY State Contract Reporter it is recommended that you obtain an official copy. You may obtain an official copy by registering on the HVMPG Regional Bid Notification System at www.bidnetdirect.com/new-york or by visiting www.cityofpoughkeepsie.com or www.nyscr.ny.gov.

STATEMENT OF NON-COLLUSION:

Bidders on the Contracts are required to execute a non-collusion bidding certificate pursuant to Section 103d of the General Municipal Law of the State of New York.

OWNERS RIGHTS RESERVED:

The City of Poughkeepsie expressly reserves the right to waive any irregularities in or to accept any bid or to reject any and all bids or to award on any or all items as the interest of the City of Poughkeepsie may appear to require.

DEPARTMENT OF FINANCE
CITY OF POUGHKEEPSIE

Brian Martinez, PhD
Commissioner of Finance
Dated: August 9, 2024



City of Poughkeepsie, NY

Request for Qualifications

Engineering Services

for

Fallkill Trunk Sewer Rehabilitation Project

DATE ISSUED: August 9, 2024

Program Requirements:

- NYS Environmental Facilities Corporation (EFC) Clean Water State Revolving Fund (CWSRF)
- Mandatory State Revolving Fund Terms and Conditions
- Minority Women Business Enterprise (MWBE) Goals and Guidance
- Davis Bacon Wage Rates-**Construction only**
- American Iron and Steel (AIS)
- Service-Disabled Veteran-Owned Businesses (SDVOB) Compliance
- Equal Employment Opportunity (EEO) Compliance Anti-Lobbying Policy
- Build America/Buy America (BABA) domestic sourcing-**Waiver**
- Federal Equivalency compliance including National Environmental Protection Act (NEPA) environmental review, federal cross-cutting authorities, disadvantaged business enterprises (DBE), single audit reporting, and surveillance services and equipment procurement, as applicable
- Federal signage terms and conditions requiring a physical sign at construction sites

INTRODUCTION

A. Description:

The City of Poughkeepsie ("City") is issuing this Request for Qualifications for the qualifications-based procurement of an engineering firm to assist with engineering and construction related tasks associated with the Fallkill Trunk Sewer Rehabilitation, NYS Clean Water State Revolving Fund (CWSRF) Project No. 7348-06-00. Utilizing a qualifications-based process, the city will select a consulting engineering firm licensed in the State of New York to design, construct and close out the project as needed.

B. Overview:

The City of Poughkeepsie owns and operates a sanitary sewer system that transmits flows to its Water Pollution Control Plant (WPCP), State Pollutant Discharge Elimination System (SPDES) permit No. NY 0026255, for treatment. The Fallkill Trunk Sewer is a major component of the system and currently carries both combined and sanitary sewer flows from the northside of the city from Winnikee Ave to High Street where it is directed to the WPCP via a flow diversion structure. This diversion structure directs normal flows to a 30-inch reinforced concrete sewer that discharges to the WPCP. Wet weather flows that exceed the capacity of the flow diversion structure weir pass downstream to Mill Street Combined Sewer Overflow (CSO) # 006. If wet weather flows exceed the capacity of the Mill St CSO, they are directed southerly to the Fallkill Trunk Sewer Interceptor and subsequently to the Pine St. Pump Station CSO #002 outfall. The Fallkill Trunk Sewer flows range from 3 million gallons per day (MGD) to 8 MGD during wet weather events. It is estimated that between 300,000 and 500,000 gpd of groundwater is presently infiltrating the existing brick trunk sewer.

The City is now seeking an engineering firm to administer, construct and close out the project as needed. The City has received \$3,566,800 in New York State Department of Environmental Conservation (NYSDEC) Water Quality Improvement Project (WQIP) Program grant funding. An additional Bipartisan Infrastructure Law (BIL) grant of \$1,356,000 along with interest-free loan funding of \$1,356,000. The project will be financed through the NYS CWSRF program administered by NYS EFC. The selected engineering firm will be responsible for complying with all funding federal and state agency requirements. The City may seek additional funding from other agencies as the project develops.

This Request for Qualifications ("RFQ") is being issued by the City of Poughkeepsie for Engineering Services for a project that will improve the sanitary sewer collection system. Sanitary sewer improvements include cured-in-place pipe (CIPP) lining, sanitary sewer heavy cleaning, and open cut repairs where required. These improvements will reduce infiltration and inflow (I/I) resulting from existing pipe defects and damage.

Companies with demonstrated experience in municipal sanitary/combined sewer improvement projects and public funding agency administration interested in making their services available to the City are invited to respond to this RFQ. "Respondents" means the companies or individuals that submit qualifications in response to this RFQ.

It is understood that the selected Respondent acting as an individual, partnership, corporation, or other legal entity, is licensed to provide such services in New York State. The Respondent shall be financially solvent and each of its members if a joint venture, its employees, agents, or subconsultants of any tier shall be competent to perform the services required under this RFQ document.

The City is seeking to encourage participation by respondents who are DBE/MBE/WBE, and/or Service-Disabled business enterprises. **For the purposes of this RFQ, the City will be using the BIL grant funds only. These funds require a documented DBE participation goal of 20% and the Consultant must demonstrate and document “good faith efforts” per the Program requirements.**

For purposes of demonstrating good faith efforts and achieving the fair share objectives established herein, the Consultant should seek out the participation of the following certified entities:

a. DBEs certified by the Small Business Administration (SBA), directory available at:

https://web.sba.gov/pro-net/search/dsp_dsbs.cfm

b. DBEs certified by state DOTs on behalf of the United States Department of Transportation (USDOT), directories by state available at <https://www.transportation.gov/DBE%20State%20Websites>, including:

c. DBEs certified in New York State: <https://nysucp.newnycontracts.com/>

i. DBEs certified in New Jersey: <https://njucp.dbesystem.com/>

ii. DBEs certified in Connecticut:

https://biznet.ct.gov/DOT_DBE/dbesearch.aspx

See Section 2, III of the Mandatory State Revolving Fund Equivalency Project Terms and Conditions for additional information.

If the Consultant awards a subcontract to DBE, the contract shall contain the EFC Equivalency Terms and Conditions and copies of all subcontracts shall be submitted to the Purchasing Agent.

Nothing in this RFQ shall be construed to create any legal obligation on the part of the City or any respondents. The City reserves the right, in its sole discretion, to amend, suspend, terminate, or reissue this RFQ in whole or in part, at any stage. In no event shall the City be liable to respondents for any cost incurred in connection with the RFQ process, including but not limited to, all costs of preparing a response to this RFQ or any other costs incurred in reliance on this RFQ. No respondent shall be entitled to repayment from the City for any costs, expenses or fees related to this RFQ. All supporting documentation submitted in response to this RFQ will become the property of the City. Respondents may also withdraw their interest in the RFQ, in writing, at any point in time as more information becomes known.

C. Time of Response

Respondents will have approximately four (4) weeks to provide a response to this RFQ. The City will then review the qualifications for selection and an interview via Zoom will be scheduled with qualifying firm(s).

- | | |
|--------------------------------------|---|
| 1. RFQ Posted: | Friday, August 9, 2024 |
| 2. Qualifications Due: | Thursday, September 11, 2024, by 2:30 pm. |
| 3. City Review: | TBD– An interview will be conducted via Zoom |
| 4. Engineering Firm Selected: | On or Before September 25, 2024 |

D. Contract Negotiations

After review and interviews are complete, if the City so desires, the selected engineering firm shall provide the City with an engineering agreement for review and approval.

E. Contract Execution

Once the contract Terms and Conditions have been approved, the final contract will be executed. Funding program requirements must be completed and provided as part of the contract documents, such as the EEO, DBE, M/WBE Plans, other required forms and plans, etc.

F. Term of Contract

Any contract awarded pursuant to this RFQ solicitation shall be for a contract period of approximately five (5) years and will expire upon completion of the projects' administrative close out.

Funding Agency Requirements

Award recipients must follow the guidance of the funding agency. All Respondents will be required to adhere to the following Funding Agencies' requirements:

- Davis Bacon Related Acts (DBRA) Compliance-Construction only
- NYS Environmental Facilities Corporation (EFC) Clean Water State Revolving Fund (CWSRF)
- Mandatory State Revolving Fund Terms and Conditions
- Disadvantaged Business Enterprises (DBE) & Minority Women Business Enterprise (MWBE) Compliance
- Service-Disabled Veteran-Owned Businesses (SDVOB) Compliance
- Equal Employment Opportunity (EEO) Compliance Anti-Lobbying Policy
- American Iron & Steel Compliance
- Build America/Buy America (BABA) domestic sourcing: see Waiver
- Federal Equivalency compliance including National Environmental Protection Act (NEPA) environmental review, federal cross-cutting authorities, disadvantaged Business enterprises (DBE), single audit reporting, and surveillance services and equipment procurement, as applicable Federal signage terms and conditions requiring a physical sign at construction sites (Additional details and specifications will be provided)

Respondents are strongly encouraged to read these regulations prior to submitting their response to this RFQ. Dates and schedules provided by the above funding agencies will be incorporated into the project scope of work and schedule requirements.

PROFESSIONAL SERVICE REQUIREMENTS

A. Scope of Services Demonstration of Need

This Request for Qualifications ("RFQ") is being issued by the City of Poughkeepsie for Engineering Services for a project that will improve the sanitary sewer collection system. Sanitary sewer improvements include cured-in-place pipe (CIPP) lining, sanitary sewer heavy cleaning, and open cut repairs where required. These improvements will reduce infiltration/inflow (I/I) from existing pipe defects and damage. These I/I flows are sizable in the City of Poughkeepsie Sewer System.

The project will be funded through grants and loans thru the Clean Water State Revolving Fund (CWSRF) and Water Infrastructure Improvement (WIIA) programs, administered locally by New York State Environmental Facilities Corporation (NYS EFC), and all aspects must be compliant to their requirements.

A project engineering report was prepared to develop the scope of work and contract scope for this proposed project and is available on request.

Engineering firms shall be required to provide the following at a minimum:

- > **General Requirements** - The consultant shall participate in public meetings, preconstruction and job meetings and distribution of meeting minutes to the City. The consultant shall be responsible for ensuring compliance with BIL and CWSRF requirements for all work. The consultant will be responsible for any technical information required for project development and permitting purposes. The consultant shall additionally coordinate with regulatory & funding program representatives as requested for review and approval of the bid package and any compliance measures.
- > **Field Investigations** - The consultant shall conduct such fieldwork they deem necessary to obtain the required information to properly design the sewer system improvements. This work may include, but not be limited to surveying, geotechnical and environmental studies, and evaluation of all system components.
- > **Bidding Assistance** - The consultant shall provide bidding assistance for this project including providing copies and plans and specifications to be distributed to contractors, answering contractor questions, issuing addenda, as necessary, reviewing the bids, and making recommendations to the City.

B. Construction Administration & Observation

The consultant shall provide construction administration services including, but not limited to, the following:

1. Issuing a Notice to Proceed (NTP) in collaboration with city staff.
2. Reviewing and approving all submittals, shop drawings and substitutions, as necessary.
3. Reviewing and making recommendations to the city for any requested Change Orders
3. Reviewing and certifying contractor application for payment and making recommendations to the city for payment.
4. Provide contractor Certified Payrolls.
5. Providing adequate construction observations services to ensure proper construction of the project.
6. Review of the final work and development of a punch list.
7. Provide a letter of construction compliance and record drawings at the end of the project.
8. Provide Operations and Maintenance Manuals for the project as applicable.

The consultant shall be responsible for coordinating all aspects of this project and addressing any questions or concerns of the NYS Department of Environmental Conservation (DEC), Department of Health (DOH), NYSEFC, and any other regulatory agencies as required. Additionally, the consultant shall work to meet all DBE/M/WBE participation requirements and goals, as required for funding compliance. Davis-Bacon prevailing wage rate documentation is required for this project, as determined by New York State Department of Labor (NYSDOL) - Construction Only.

C. Qualifications and Experience

This Request for Qualifications will determine the most qualified Engineering Firm to secure and provide funding administration, program work, survey, design, prepare permitting and bidding documents, proceed with construction administration and observation including following all City, State and Federal rules and regulations governing the supplemental funding program. Consultants must provide a Qualifications and Experience Statement with this proposal that includes information described in Section B and C of the Submittal Requirements.

D. Quality of Work

All work shall follow recognized professional practices and standards and meet the specifications required by local, state and federal approval of the project's plans and specification prior to advertising the project for construction bidding.

SUBMITTAL REQUIREMENTS

A. Preliminary Requirements

1. * Evidence of Insurance: Commercial General Liability with limits not less than \$2,000,000; Workers Compensation and Employers Liability with limits not less than \$500,000; Automobile Liability with limits not less than \$1,000,000 per occurrence; and Professional Liability insurance with limits of \$2,000,000 must be provided by the selected consultant with the agreement.
2. * References: At least three (3) references of related projects, including date of project, contact person and phone number, and a brief description of the project.

B. Letter of Interest

Submit a Cover Letter of Interest signed by a duly authorized officer or representative of the Respondent, not to exceed two pages in length.

The Letter of Interest must also include the following information:

- The principal place of business and the contact person, title, telephone/fax numbers and email address.
- A summary of the qualifications of the Respondent and team.
- Description of organization (i.e. Professional Corporation, or Professional Limited Liability Company).
- If the Respondent is a partially owned or fully owned subsidiary of another organization, identify the parent organization and describe the nature and extent of the parent organization's approval rights, if any, over the activities of the Respondent.

C. Main Proposal

The purpose of the proposal is to demonstrate the qualifications, competence and capacity of the Respondents in conformity with the requirements of this RFQ. The substance of proposals will carry more weight than their form or manner of presentation. The proposal should demonstrate the qualifications of the firm and the staff. It should also specify an approach that will meet the request for proposals requirements. The proposal should address all the points outlined in the request for qualifications and should be prepared to provide a straightforward, concise description of the proposer's capabilities to satisfy the requirements of the request for qualifications. While additional data may be presented, the following items must be included; this represents the criteria against which the proposal will be evaluated.

1. **Qualifications Proposal:**

Provide a synopsis of the years of experience and detailed qualifications in performing the range of municipal sewer system improvements on various project types in compliance with applicable standards, including team's resumes. Respondents should provide a narrative with examples of at least three (3) projects in detail that are similar in nature to projects described in the RFQ (see "References"). References for similar projects and project profiles will be reviewed to evaluate the level of experience.

2. **Technical Proposal:**

- a. **Project Management Plan:** Discuss approach to the project in terms of understanding of the established Scope and Deliverables execution, regarding any constraints identified in this RFQ, to include funding requirements. Provide a plan for engaging the City's project team and regulatory agencies required. Provide the number of full-time and part-time employees, partnerships or subconsultants proposed.
- b. **Schedule:** Capacity to complete the scope of work within the defined period of performance as it is expected the project will be completed in a three-year period.
The successful Respondent will have a project schedule & work plan to illustrate the ability to complete the work with respect to constraints, either stated or assumed.
- c. **Funding Agency Experience:** Respondents shall cite previous project experience in working with M/WBE, DBE firms, cite any existing partnerships with M/WBEs or cite the planned M/WBE, DBE partnerships relevant to addressing requirements of this project & RFQ.

SELECTION PROCESS

The Selection Committee comprised of City staff will review qualifications in accordance with the evaluation criteria set forth herein. Proposals that are submitted in a timely manner and comply with the mandatory requirements of the RFQ will be evaluated in accordance with the terms of the RFQ. Professional services shall be awarded to vendor whose proposal received the most points in accordance with criteria set forth in RFQ. An interview will be scheduled via Zoom to further discuss qualifications and the scope of work.

EVALUATION CRITERIA AND SCORING

In evaluating responses to this Request for Qualifications, the City will take into consideration the experience, capacity, and funding experience that are being proposed by the Respondent. The following Evaluation Criteria will be considered in reviewing submittals:

The point system is to evaluate the experience and capacity of the Respondent. Maximum is **100 Points**:

Respondents will be awarded up to 80 Points for the Qualifications Proposal.

- Past Work Experience/References: 20 Points
- Staff Experience/Qualifications: 20 Points
- Public Funding NYSEFC Experience: 20 Points
- Local Experience – Familiarity Working with the City: 20 Points

- **Respondents will be awarded up to 20 Points for the Technical Proposal:**
 - Project Management Plan: 20 Points

PLEASE INCLUDE YOUR COST PROPOSAL IN A SEPARATE ENVELOPE

QUESTIONS

Please contact the City Engineering Department, (845) 451-4192 or rdupilka@cityofpoughkeepsie.com for additional information or questions concerning the RFQ. Questions are due by September 6, 2024 by 4:00 P.M

SUBMITTAL DUE DATE

Responses to this RFQ are due on Wednesday September 11, 2024, 2:30 pm, local time. RFQ responses must be submitted in a sealed envelope and shall be clearly marked "**RFQ-06-24-03 Engineering Services for Fallkill Trunk Sewer Rehabilitation Project**"

PROPOSAL SUBMISSION AND CONTACT PERSON

Four (4) hard copies and one (1) digital copy of the proposal should be submitted no later than 2:30 PM, September 11, 2024 in a sealed envelope clearly marked: **RFQ-COP-06-24-03 Engineering Service for Fallkill Trunk Sewer Rehab** to:

Shirley Davison | Purchasing Agent
City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, NY 12601

Forms to be submitted:

- 1. DBE Utilization Plan**
- 2. AIS Certification**
- 3. Lobbying Certification**
- 4. Iran Divestment Certification.**
- 5. Addendum Acknowledgment**

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the City receive information that a Bidder/Contractor is in violation of the above-referenced certification, the County will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the County shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

The County reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she is the _____ of the _____ Corporation and that neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

SIGNED

SWORN to before me this

_____ day of _____ 20_____

Notary Public: _____

Engineering Services for Fallkill Truck Sewer Rehabilitation

RFQ-06-24-03

Bid Addendum Acknowledgement Sheet

All addenda, the receipts of which are hereby acknowledged by inserting the dates of each addendum next to the appropriate numbers, have been included in this Bid and are listed below. Failure to properly acknowledge the addenda as set forth below may result in rejection of the bid.

Receipt of Addendum:

Addendum No. 1	
Addendum No. 2	
Addendum No. 3	
Addendum No. 4	
Addendum No. 5	
Addendum No. 6	
Addendum No. 7	

Vendor: _____

BABA Wavier



Environmental Facilities Corporation

KATHY HOCHUL
Governor

MAUREEN A. COLEMAN
President and CEO

Sent Via Email Only

May 22, 2023

The Honorable Marc Nelson
Mayor
City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, New York 12601

Re: Clean Water State Revolving Fund (CWSRF) Project No. C3-7348-06-00
City of Poughkeepsie
Dutchess County
SPDES No. NY0026255
Fallkill Trunk Sewer Project
Build America, Buy America Project Waiver

Dear Mayor Nelson:

The above referenced project is noted in the Final Clean Water State Revolving Fund (CWSRF) 2023 Intended Use Plan (IUP) Amendment No. 1 as an equivalency project or a potential recipient of federal grant funding. In order to receive CWSRF funding, all equivalency projects and those receiving federal grants must comply with certain program requirements, including the Build America, Buy America (BABA) Act.

The Environmental Facilities Corporation (EFC) has evaluated the above referenced project and determined that the requirements of BABA are waived for this project because of the *US Environmental Protection Agency (EPA) Adjustment Period Waiver of Section 70914(a) of P.L. 117-58, Build America, Buy America Act, 2021 for SRF Projects that have Initiated Design Planning*. Please note that this waiver does not remove the municipality's obligation to comply with equivalency and other program requirements, including, but not limited to, American Iron & Steel (AIS)

Please retain this waiver letter as part of the project file and share with prospective bidders as needed. We look forward to working with you on your water quality infrastructure project.

Please contact Rebecca Lanahan, P.E., Environmental Engineer, at 518-402-7396 with any questions regarding this waiver.

Sincerely,

William A. Brizzell, Jr., P.E.
Director
Division of Engineering

cc: City of Poughkeepsie - Richard DuPilka, P.E.
B&L - Karen Clark, P.E.
City of Poughkeepsie - Dr. Brian Martinez

EFC Terms and Conditions



Mandatory State Revolving Fund Equivalency Project Terms and Conditions

**For Equivalency Projects Funded with NYS Clean Water State
Revolving Fund or Drinking Water State Revolving Fund**

Identify Contract Type prior to Advertisement for Bid:

☐ **Construction**

- ☐ **Treatment Works and Drinking Water Projects**
- ☐ **Non-Treatment Works**

☒ **Non-Construction**

Effective October 1, 2023

**New York State Environmental Facilities Corporation
625 Broadway, Albany, NY 12207-2997
P: (518) 402-6924
www.efc.ny.gov**

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INTRODUCTION

The terms and conditions below must be incorporated verbatim into contracts receiving SRF financial assistance. Additional information relating to each of the requirements is included in the companion guidance document.

REQUIRED CONTRACT LANGUAGE

COMMONLY USED TERMS

The following commonly used terms are defined herein as follows:

Broker means a firm that does not itself perform, manage or supervise the work of its contract or subcontract in a manner consistent with the normal business practices for contractors or subcontractors in its line of business.

Construction means the process by which a contractor or subcontractor builds, alters, repairs, remodels, improves or demolishes infrastructure.

Contract means an agreement between a Recipient and a Contractor.

Contractor means all bidders, prime contractors, non-construction service providers, and consultants as hereinafter defined, unless specifically referred to otherwise.

Equivalency means projects in the amount equal to the funds “directly made available” by an Environmental Protection Agency (EPA) Capitalization Grant and funding for those projects is considered federal funds, or federal financial assistance. The Equivalency designation is indicated in the Intended Use Plan.

Manufactured products means articles, materials, or supplies that have been processed into a specific form and shape or combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies. If an item is classified under Build America, Buy America as an iron or steel product, a construction material, or a section 70917(c) material under 2 CFR § 184.4(e), then it is not a manufactured product.

Manufacturer means a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the Contract and of the general character described by the specifications.

MBO is designated and employed by the Recipient as a Minority Business or Compliance Officer responsible for MWBE/DBE/SDVOB/EEO reporting and compliance.

Non-Construction Provider means any individual or business enterprise that provides one or more of the following: legal, engineering, financial advisory, technical, or other professional services, supplies, commodities, equipment, materials, or travel.

Recipient means the party, other than EFC, to a grant agreement or a project finance agreement with EFC through which funds for the payment of amounts due thereunder are being paid in whole or in part. Responsible through Project Finance Agreement (PFA) to comply with EFC requirements.

State means the State of New York.

Subcontract means an agreement between a Contractor and a Subcontractor.

Subcontractor means any individual or business enterprise that has an agreement, purchase order, or any other contractual arrangement with a Contractor.

Supplier means a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

Treatment Works is defined in Clean Water Act (CWA) Section 212, this does not include nonpoint source projects as defined in CWA Section 319 and estuary management program projects as defined in CWA Section 320.

SECTION 1 FEDERAL ARCHITECTURAL AND ENGINEERING PROCUREMENT REQUIREMENTS

Any Architectural and Engineering (A/E) services for all Clean Water State Revolving Fund (CWSRF) projects and for Drinking Water State Revolving Fund (DWSRF) projects receiving federal grant are required to be procured in compliance with 40 USC 1101 et. seq., and 48 CFR Part 36 Subpart 36.6. The Recipient must certify compliance to receive financing. Disregard this section if it does not apply to this Contract.

SECTION 2 REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR FEDERAL DISADVANTAGED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR WOMEN AND MINORITY GROUP MEMBERS

The Equal Employment Opportunities requirements of this section apply to all Contracts and Subcontracts, with the exception of: (1) the requirements under Title VII of the Civil Rights Act of 1964 and 41 CFR Part 60-1 Subpart A which apply only to construction Contracts and Subcontracts; and (2) the Federal Affirmative Action Regulations requirements which apply only to construction Contracts and Subcontracts greater than \$10,000.

The Disadvantaged Business Enterprises ("DBE") requirements of this section apply to construction, equipment, services, and/or supplies Contracts.

I. General Provisions

A. Contractors and Subcontractors are required to comply with the following provisions:

1. 40 CFR Part 33 ("Federal DBE Regulations") for contracts under EPA financial assistance agreements, as those terms are defined therein.
2. Title VI of the Civil Rights Act of 1964 and 40 CFR Part 7 ("Title VI") for any program or activity receiving federal financial assistance, as those terms are defined therein.
3. Title VII of the Civil Rights Act of 1964 and 41 CFR Part 60-1 Subpart A ("Title VII") for construction contracts related to any government programs providing federal financial assistance, as those terms are defined therein.
4. 41 CFR Part 60-4 ("Federal Affirmative Action Regulations") for federal or federally assisted construction contracts in excess of \$10,000, as those terms are defined therein.
5. Section 504 of the Rehabilitation Act of 1973 ("Section 504") for any program or activity receiving federal financial assistance, as those terms are defined therein.

6. The Age Discrimination Act of 1975 ("Age Discrimination Act") for any program or activity receiving federal financial assistance, as those terms are defined therein.
 7. Section 13 of the Federal Water Pollution Control Act ("Clean Water Act") Amendments of 1972 ("Section 13") for any program or activity receiving federal financial assistance under the Clean Water Act, as those terms are defined therein.
- B. Upon request from the Recipient and/or EFC, Contractor will provide complete responses to inquiries and all DBE and EEO records available within a reasonable time or as otherwise determined by EFC.
 - C. Failure to comply with all of the requirements herein may result in a finding by the Recipient that the Contractor is non-responsive, non-responsible, and/or has breached the Contract, leading to the withholding of funds or such other actions or enforcement proceedings as allowed by the Contract.
 - D. If any terms or provisions herein conflict with Federal DBE Regulations, Title VI, Title VII, or Federal Affirmative Action Regulations, such law and regulations shall supersede these requirements.
 - E. The Contractor and Subcontractor shall not discriminate on the basis of race, color, national origin, age, disability, or sex in the performance of this Contract. The Contractor and Subcontractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the Contractor and Subcontractor to carry out these requirements is a material breach of this Contract which may result in the termination of this Contract or other legally available remedies.

II. Equal Employment Opportunities (EEO)

- A. Contractors and Subcontractors shall have instituted grievance procedures to assure the prompt and fair resolution of complaints when a violation of Title VI of the Civil Rights Act of 1964 or Title 40 CFR Part 7 is alleged.
- B. For federally assisted construction Contracts, the Contractor and Subcontractor will comply with the requirements of 41 CFR § 60-1.4(b) and (c), and such provisions are hereby incorporated by reference. These provisions require, in part, that the Contractor and Subcontractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor and Subcontractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- C. The Contractor shall comply with the provisions of the Human Rights Law (Executive Law Article 15), Title VI, Title VII, the Federal Affirmative Action Regulations, Section 504, Age Discrimination Act, Section 13, and all other State and Federal statutory and constitutional non-discrimination provisions. The Contractor and Subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.
- D. Pursuant to 41 CFR § 60-1.7 for federally assisted construction Contracts, Contractor and Subcontractor will annually file an EEO-1 Report with the Joint Reporting Committee for the Office of Federal Contract Compliance Programs (OFCCP) and the Equal Employment Opportunity Commission (EEOC) according to the instructions provided at

<https://www.eeoc.gov/employers/eeo-1-survey/eeo-1-instruction-booklet>, if Contractor or Subcontractor:

1. Is not exempt from compliance pursuant to 41 CFR § 60-1.5;
 2. Has 50 or more employees;
 3. Is a prime Contractor or first tier Subcontractor; or Subcontractor below the first tier which performs construction work at the site of construction; and
 4. Has a Contract, Subcontract, or purchase order amounting to \$50,000 or more.
- E. Pursuant to 40 CFR § 7.95, the Contractor shall display a copy of the EEO notice at the project site in a visible location. The notice shall accommodate individuals with impaired vision or hearing and should be provided in languages other than English where appropriate. The notice must also identify the employee responsible for its EEO compliance. See guidance document for sample notice.
- F. For federal or federally assisted construction contracts in excess of \$10,000, the Contractor and Subcontractor will comply with the Affirmative Action Regulations and such provisions are hereby incorporated by reference. These provisions require, in part, that the Contractor and Subcontractor place affirmative action goals on Contracts and Subcontracts, as established by the United States Department of Labor. See guidance document for goals.
- G. The Contractor will include the provisions of Subdivisions II(A) and II(B) in every Subcontract in such a manner that the requirements of these subdivisions will be binding upon each Subcontractor as to work in connection with the Contract.

III. Good Faith Efforts and Fair Share Objectives for DBEs

- A. Fair Share Objectives for this Contract are 20%
- B. Good Faith Efforts

Pursuant to 40 CFR § 33.301, the Contractor must demonstrate and document “good faith efforts” to provide meaningful participation by DBEs as Subcontractors or Suppliers in the performance of the Contract.

1. For purposes of demonstrating good faith efforts and achieving the fair share objectives established herein, the Contractor should seek out the participation of the following certified entities:
 - a. DBEs certified by the Small Business Administration (SBA), directory available at: https://web.sba.gov/pro-net/search/dsp_dsbs.cfm
 - b. DBEs certified by state DOTs on behalf of the United States Department of Transportation (USDOT), directories by state available at <https://www.transportation.gov/DBE%20State%20Websites>, including:
 - c. DBEs certified in New York State: <https://nysucp.newnycontracts.com/>
 - i. DBEs certified in New Jersey: <https://njucp.dbesystem.com/>
 - ii. DBEs certified in Connecticut: https://biznet.ct.gov/DOT_DBE/dbesearch.aspx
2. Participation of Brokers and Truckers/Haulers
 - a. Contractors cannot count the participation of a DBE who acts as a Broker or passive conduit of funds without performing, managing, or supervising the work of its contract or subcontract in a manner consistent with normal business practices. If 50% or more of the total dollar amount of a DBE's prime contract or subcontract is subcontracted to a non-DBE, the DBE prime contractor or subcontractor will be presumed to be a Broker.
 - b. Contractors may count the participation of a DBE trucker/hauler only if the trucker/hauler is performing a “commercially useful function,” according to the following factors:

- i. The DBE must be responsible for the management and supervision of the entire trucking/hauling operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE objectives.
- ii. The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.

C. DBE Utilization Plan

1. The Contractor represents and warrants that Contractor has submitted a completed copy of the EFC DBE Utilization Plan with all required bid forms to the MBO no later than the execution date of this Contract.
2. The Contractor agrees to use such DBE Utilization Plan for the performance of DBEs on the Contract.
3. The Contractor further agrees that a failure to submit and/or use such DBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, the Recipient shall be entitled to any remedy provided herein, including but not limited to, a finding that the Contractor is not responsive.
4. The Contractor must report any changes to the Utilization Plan after Contract award and during the term of the Contract to the MBO. The Contractor shall indicate the changes to the Recipient in the Quarterly Report immediately following the change. See Section III(E), *Quarterly Report*. At EFC's discretion, an updated DBE Utilization Plan form and good faith effort documentation may be required to be submitted. When a change order is executed the change order and supporting documentation should be submitted to the MBO and a revised Utilization Plan may be required at EFC's discretion.
5. The Contractor shall submit copies of all fully executed subcontracts, agreements, and purchase orders that are referred to in the DBE Utilization Plan to the MBO within 30 days of their execution.

D. Submission of Good Faith Effort Documentation

1. If the Contractor, after making good faith efforts, is unable to meet the DBE fair share objectives, the Contractor must submit documentation showing good faith efforts made by the Contractor to meet the fair share objectives. Such documentation should be submitted to the MBO in accordance with the instructions on the DBE Utilization Plan.
2. If the MBO, upon review of the DBE Utilization Plan and updated Quarterly Reports determines that the Contractor is failing or refusing to comply with the good faith effort requirements or that the good faith efforts are not in the requested format, the Recipient may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within a reasonable time and provide documentation showing good faith efforts as requested.

E. Quarterly Report

1. The Contractor agrees to submit a Quarterly Report to the MBO by the fifteenth business day following the end of each calendar quarter over the term of this Contract documenting the payments made and the progress towards achievement of the DBE fair share objectives of the Contract. The Quarterly Report must be supplemented with proof of payment by the Contractor to its Subcontractors (e.g., copies of both sides of a cancelled check) and proof that Subcontractors have been paid within 30 days of receipt of payment from the Recipient. The final Quarterly Report must reflect all Utilization Plan revisions, final adjusted payments to subcontractors, and all change orders and be marked as "final".

2. The Contractor agrees to submit any other information as may be requested by the MBO or EFC during the term of the Contract as needed to assist EFC for completion of federal reporting to EPA.

F. Other Requirements

1. All contracts shall comply with the contract administration requirements outlined at 40 CFR 33.302.
2. Contractor and Subcontractors shall assist EFC and the Recipient as necessary with complying with the recordkeeping and reporting requirements outlined at 40 CFR Part 33 Subpart E.

SECTION 3 BUILD AMERICA, BUY AMERICA (BABA) ACT AND AMERICAN IRON AND STEEL (AIS) REQUIREMENTS

Applicable to all contracts for DWSRF or CWSRF Treatment Works projects.

I. BABA Requirements

The requirements of this subsection shall not apply to CWSRF or DWSRF Contracts or Subcontracts which have been notified by EFC they are waived pursuant to the Build America, Buy America Act, Pub .L. No. 117-58, section 70914, and 2 CFR Part 184, including, but not limited to, the Adjustment Period Waiver for CWSRF and DWSRF projects that initiated project design planning prior to May 14, 2022. Disregard this subsection if the Contract or Subcontract is eligible for such a waiver, however, note that Subsection II below on AIS Requirements still applies.

If such Contracts or Subcontracts are not eligible for such a waiver, then the DWSRF or CWSRF Contract or Subcontract shall be subject to the Build America, Buy America Act, and the regulations promulgated thereafter (Pub. L. No. 117-58, §§ 70901-70953, and 2 CFR Part 184), which requires, among other things, that no SRF funds “may be obligated for a project unless all of the iron, steel, manufactured products, and construction materials used in the project are produced in the United States.”

The Contractor shall submit with their bid or proposal documents an executed BABA Contractor's Certification on the form attached hereto as [Attachment 2](#) acknowledging to and for the benefit of the Recipient of the Clean Water State Revolving Fund (“CWSRF”) or the Drinking Water State Revolving Fund (“DWSRF”) financial assistance that the Contractor understands the goods and services under this Agreement are being funded with monies made available by the New York State Environmental Facilities Corporation (“EFC”) through the CWSRF or the DWSRF and that such funding is subject to certain statutory restrictions requiring that certain iron, steel, manufactured products, and construction materials used in the project be produced in the United States (“BABA Requirement”) including iron, steel, manufactured products, and construction materials provided by the Contractor pursuant to this Agreement.

The Contractor hereby represents and warrants that:

- (a) the Contractor has reviewed and understands the BABA Requirement,
- (b) all of the iron, steel, manufactured products, and construction materials covered by the BABA Requirement incorporated in the project will be and/or have been produced in the United States in a manner that complies with the BABA Requirement, unless a waiver of the requirement is approved, and
- (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the BABA Requirement, as may be requested by the Recipient.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by

the Contractor shall permit the Recipient to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Recipient resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the EFC or any damages owed to the EFC by the Recipient). While the Contractor has no direct contractual privity with the EFC, as a lender to the Recipient for the funding of this project, the Recipient and the Contractor agree that the EFC is a third-party beneficiary and neither this paragraph, nor any other provision of this Agreement necessary to give this paragraph force or effect, shall be amended or waived without the prior written consent of the EFC.

II. AIS Requirements

The requirements of this section apply to (1) all contracts for which Part 1 of this section does not apply, (2) all Construction Contracts and Subcontracts for DWSRF projects and CWSRF Treatment Works projects and (3) all contracts for the purchase of iron and steel products for a DWSRF project or CWSRF Treatment Works project. Disregard this section if it does not apply to this Contract or Subcontract.

The Contractor shall submit with their bid or proposal documents an executed AIS Contractors Certification on the form attached hereto as [Attachment 3](#) acknowledging to and for the benefit of the Recipient of the Clean Water State Revolving Fund ("CWSRF") or the Drinking Water State Revolving Fund ("DWSRF") financial assistance that the Contractor understands the goods and services under this Agreement are being funded with monies made available by the New York State Environmental Facilities Corporation ("EFC") through the CWSRF or the DWSRF and that such funding is subject to certain statutory restrictions requiring that certain iron and steel products used in the project be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contractor pursuant to this Agreement.

The Contractor hereby represents and warrants that:

- (a) the Contractor has reviewed and understands the American Iron and Steel Requirement,
- (b) all of the iron and steel products covered by the American Iron and Steel Requirement incorporated in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and
- (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Recipient.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Recipient to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Recipient resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the EFC or any damages owed to the EFC by the Recipient). While the Contractor has no direct contractual privity with the EFC, as a lender to the Recipient for the funding of this project, the Recipient and the Contractor agree that the EFC is a third-party beneficiary and neither this paragraph, nor any other provision of this Agreement necessary to give this paragraph force or effect, shall be amended or waived without the prior written consent of the EFC.

SECTION 4 DAVIS-BACON (DB) PREVAILING WAGE REQUIREMENTS

The requirements of this section apply to all Construction Contracts and Subcontracts greater than \$2,000 for either DWSRF projects or CWSRF Treatment Works projects. Disregard this section if it does not apply to this Contract or Subcontract.

For Contracts in Excess of \$2,000:

1. Minimum Wages

- (i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis–Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (1)(ii) of this section) and the Davis–Bacon poster (WH–1321) shall be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. The Davis-Bacon poster (WH-1321) can be found at <https://www.dol.gov/whd/regs/compliance/posters/davis.htm>. Wage determinations may be obtained from the US Department of Labor's website, <https://sam.gov/content/wage-determinations>.

- (ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination, and which is to be employed under the Contract shall be classified in conformance with the wage determination. The contracting officer shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

1. The work to be performed by the classification requested is not performed by a classification in the wage determination;
2. The classification is utilized in the area by the construction industry; and,
3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of

receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (1) (ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program *provided* that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account asset for the meeting of obligations under the plan or program.

2. Withholding. The Recipient shall upon its own action or upon written request of the EPA Award Official or an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the Contract, the Recipient may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR § 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly for each week in which any Contract work is performed a copy of all payrolls to the Recipient. Such documentation shall be available on request of EFC or EPA. As to each payroll copy received, the Recipient shall provide written confirmation in a form satisfactory to EFC indicating whether or not the project is in compliance with the requirements of 29 CFR § 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls submitted shall set out accurately and completely all of the information

required to be maintained under 29 CFR § 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <https://www.dol.gov/agencies/whd/government-contracts/construction/forms> or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all Subcontractors. Contractors and Subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Recipient, for transmission to EFC, EPA if requested by EPA, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a Subcontractor to provide addresses and social security numbers to the prime Contractor for its own records, without weekly submission to the Recipient (or the applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or Subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

1. That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5(a)(3)(i), and that such information is correct and complete;
2. That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
3. That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The Contractor or Subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Recipient, EFC, EPA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the required records or to make them available, the Recipient, EFC, or EPA may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR § 5.12.

4. Apprentices and trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90

days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

5. Compliance with Copeland Act Requirements. The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.

6. Subcontracts. The Contractor or Subcontractor shall insert in any Subcontracts the clauses contained in 29 CFR § 5.5(a)(1) through (10) and such other clauses as the Recipient may by appropriate

instructions require, and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any Subcontractor or lower tier subcontractor with all the Contract clauses in 29 CFR § 5.5.

7. Contract Termination: Debarment. A breach of the contract clauses in 29 CFR § 5.5 may be grounds for termination of the Contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR § 5.12.
8. Compliance with Davis–Bacon and Related Act requirements. All rulings and interpretations of the Davis–Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.
9. Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and the Recipient, the U.S. Department of Labor, or the employees or their representatives.
10. Certification of eligibility.
 - (i) By entering into this Contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (ii) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001.

For Contracts in Excess of \$100,000:

1. Overtime requirements. No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any Subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$25 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
3. Withholding for unpaid wages and liquidated damages. The Recipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or Subcontractor under any such Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

4. Subcontracts. The Contractor or Subcontractor shall insert in any Subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any Subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.
5. In any Contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR § 5.1, the Contractor or Subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the Contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the records to be maintained under this paragraph shall be made available by the Contractor or Subcontractor for inspection, copying, or transcription by authorized representatives of the Recipient and the Department of Labor, and the Contractor or Subcontractor will permit such representatives to interview employees during working hours on the job.

SECTION 5 REQUIREMENTS REGARDING SUSPENSION AND DEBARMENT

The requirements of this section apply to all Contracts and Subcontracts.

Contractor and any Subcontractors shall comply with, Subpart C of 2 CFR Part 180 as implemented and supplemented by 2 CFR Part 1532. The Contractor is not a debarred or suspended party under 2 CFR Part 180 or 2 CFR Part 1532, or 29 CFR § 5.12. Neither the Contractor nor any of its Subcontractors have contracted with, or will contract with, any debarred or suspended party under the foregoing regulations.

In addition, the Contractor and any Subcontractors have not been debarred from or deemed ineligible for Government contracts or federally assisted Construction contracts pursuant to Executive Order 12549.

The Contractor and any Subcontractors have not been deemed ineligible to submit a bid on or be awarded a public contract or subcontract pursuant to Article 8 of the State Labor Law, specifically Labor Law § 220-b. In addition, neither the Contractor nor any Subcontractors have contracted with, or will contract with, any party that has been deemed ineligible to submit a bid on or be awarded a public contract or subcontract under Labor Law § 220-b.

In addition, the Contractor and any Subcontractors have not been deemed ineligible to submit a bid and have not contracted with and will not contract with any party that has been deemed ineligible to submit a bid under Executive Law § 316.

SECTION 6 RESTRICTIONS ON LOBBYING

The requirements of this section apply to all Contracts and Subcontracts greater than \$100,000. Disregard this section if it does not apply to this Contract or Subcontract.

The Contractor and any Subcontractor bidding or proposing a Contract or Subcontract in excess of \$100,000 shall submit with their bid or proposal documents an executed Certification Regarding Lobbying pursuant to 40 CFR Part 34 ("Lobbying Certification") in the form attached hereto as [Attachment 4](#), consistent with the prescribed form provided in Appendix A to 40 CFR Part 34.

SECTION 7 PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT

The requirements of this section apply to all Contracts and Subcontracts.

This prohibition is effective for obligations and expenditures of EPA financial assistance funding on or after 8/13/2020.

As required by 2 CFR 200.216, EPA recipients and subrecipients, including borrowers under EPA funded revolving loan fund programs (Recipients), are prohibited from obligating or expending loan or grant funds to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities). EPA funds may not be used to purchase:

- a. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
- b. Telecommunications or video surveillance services provided by such entities or using such equipment.
- c. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

Consistent with 2 CFR 200.471, costs incurred for telecommunications and video surveillance services or equipment such as phones, internet, video surveillance, and cloud servers are allowable except for the following circumstances:

- a. Obligating or expending EPA funds for covered telecommunications and video surveillance services or equipment or services as described in 2 CFR 200.216 to:
 - (1) Procure or obtain, extend or renew a contract to procure or obtain;
 - (2) Enter into a contract (or extend or renew a contract) to procure; or
 - (3) Obtain the equipment, services, or systems.

Contractors and Subcontractors shall not procure or install prohibited equipment, systems, or services, including equipment, systems, or services produced or provided by entities identified in section 889, that are recorded in the System for Award Management exclusion list located at <https://sam.gov/SAM/>.

SECTION 8 CONSTRUCTION SIGNS

The requirements of this section apply to all EFC projects. Specific federal Bipartisan Infrastructure Law (BIL) signage is required for projects receiving financing from BIL.

If Contractor is expected to provide and install an EFC or BIL Construction Sign, a specification will be included in the enclosed contract documents.

ATTACHMENTS (Required Forms)

Attachment 1 – EFC DBE Utilization Plan



Environmental Facilities Corporation

NYS Environmental Facilities Corporation Disadvantaged Business Enterprise (DBE) Utilization Plan

Instructions for Contractors & Service Providers:

Contractors and Service Providers must complete Sections 2 and 3. **Submit the completed, signed (electronic signature box checked and dated) form to the Recipient's Minority Business Officer (MBO) no later than the date of contract execution.** Incomplete forms will be found deficient. If more than 10 subcontractors are used, additional pages for Section 3 can be obtained from EFC.

If the prime contract is being performed by the parties to a Joint Venture, Teaming Agreement, or Mentor-Protégé Agreement that includes a certified DBE, please contact EFC for assistance.

DBEs on this form may include disadvantaged firms certified by the [New York State Unified Certification Program \(NYSUCP\)](#), and disadvantaged firms certified by the Small Business Administration. In addition, the participation of DBEs will be credited according to the following requirements:

- Contractors cannot count the participation of a DBE who acts as a broker or passive conduit of funds without performing, managing, or supervising the work of its contract or subcontract in a manner consistent with normal business practices. If 50% or more of the total dollar amount of a DBE's prime contract or subcontract is subcontracted to a non-DBE, the DBE prime contractor or subcontractor will be presumed to be a broker.
- Contractors may count the participation of a DBE trucker/hauler only if the trucker/hauler is performing a "commercially useful function," according to the following factors:
 - o The DBE must be responsible for the management and supervision of the entire trucking/hauling operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE objectives.
 - o The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.

See the [Mandatory Equivalency Terms and Conditions](#) or consult your designated MBO for further guidance.

Instructions for Minority Business Officers (MBO):

The MBO must complete Section 1. Email the completed, signed (electronic signature box checked and dated) form to your EFC Program Compliance Specialist.

The subject heading of the email to the EFC Program Compliance Specialist should follow the format "UP, Project Number, Contractor." EFC will review the Utilization Plan and email the MBO an acceptance or denial.

If the Utilization Plan will not meet or exceed the DBE fair share objective, then the good faith effort documentation noted in Section 4 must be submitted with this form.

**NYS Environmental Facilities Corporation
Disadvantaged Business Enterprise (DBE) Utilization Plan**

SECTION 1: MUNICIPAL INFORMATION			
Recipient/Municipality:		County:	
Project No.:	Contract ID:	Registration No. (NYC only):	
Minority Business Officer:	Email:	Phone #:	
Address of MBO:			
Electronic Signature of MBO: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.			Date:

SECTION 2: PRIME CONTRACTOR / SERVICE PROVIDER INFORMATION				
Firm Name:			Contract Type: ☐ Construction ☐ Other Services	
Is the Prime Firm certified as a DBE? ☐ Yes ☐ No If yes, please include Prime information in Section 3.				
Address:		Phone #:	Fed. Employer ID #:	
Description of Work:			Email:	
Award Date:	Start Date:	Completion Date:	DBE Fair Share Objective	PROPOSED DBE Participation
Total Contract Amount: \$ DBE Eligible Contract Amount: \$ (DBE Fair Share Objectives are applied to this amount and includes all change orders, amendments, & specialty waivers)			Total: 20% \$	Total: % \$
If fair share objectives are not met, documentation must be attached: ☐ No Participation ☐ Short of the DBE Fair Share Objective				
☐ Specialty Equipment/Services: must be of SIGNIFICANT cost – attach list of cost and type of equipment and good faith effort documentation				

**NYS Environmental Facilities Corporation
Disadvantaged Business Enterprise (DBE) Utilization Plan**

SECTION 3: DBE SUBCONTRACTOR INFORMATION			
This Submittal is:	☐ The First/Original Utilization Plan ☐ Revised Utilization Plan #:		
DBE Subcontractor Information		Contract Amount	For EFC Use:
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Certifying Entity: ☐ DOT in State of _____; or ☐ SBA ☐ Other (indicate entity): _____	Start Date: Completion Date:		
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Certifying Entity: ☐ DOT in State of _____; or ☐ SBA ☐ Other (indicate entity): _____	Start Date: Completion Date:		
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Certifying Entity: ☐ DOT in State of _____; or ☐ SBA ☐ Other (indicate entity): _____	Start Date: Completion Date:		
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Certifying Entity: ☐ DOT in State of _____; or ☐ SBA ☐ Other (indicate entity): _____	Start Date: Completion Date:		
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Certifying Entity: ☐ DOT in State of _____; or ☐ SBA ☐ Other (indicate entity): _____	Start Date: Completion Date:		

**NYS Environmental Facilities Corporation
Disadvantaged Business Enterprise (DBE) Utilization Plan**

SECTION 3: DBE SUBCONTRACTOR INFORMATION continued			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Certifying Entity: ☐ DOT in State of _____; or ☐ SBA ☐ Other (indicate entity): _____			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Certifying Entity: ☐ DOT in State of _____; or ☐ SBA ☐ Other (indicate entity): _____			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Certifying Entity: ☐ DOT in State of _____; or ☐ SBA ☐ Other (indicate entity): _____			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Certifying Entity: ☐ DOT in State of _____; or ☐ SBA ☐ Other (indicate entity): _____			

**NYS Environmental Facilities Corporation
Disadvantaged Business Enterprise (DBE) Utilization Plan**

SECTION 4: GOOD FAITH EFFORT DOCUMENTATION

Utilization Plans that do not meet the Fair Share Objective must be accompanied by the documentation requested in numbers 1 – 7, as listed below. Specialty Equipment Exclusion requests must be accompanied by the documentation requested in number 8 – 12, as listed below. Specialty Services Exclusion requests must be accompanied by the documentation requested in number 13, as listed below. Please contact the MBO and/or EFC for assistance or to request sample documentation.

Provide the following:

1. A letter of explanation detailing the scope of work, DBE search results, and results of good faith efforts that were made.
2. A scope of work that shows what subcontracting opportunities are in the contract. This could be an engineering proposal, schedule of values, or other similar documents.
3. Screenshots of search results (using commodity codes) from [DBE Directories](#) of all certified DBEs that were solicited for purposes of complying with your DBE fair share objective. Each search should be saved as an individual file.
4. [A log of solicitation results](#), consisting of the list of DBE firms solicited for the contract and the outcome of the solicitations. The log should be broken out into separate areas for each task that is solicited (e.g., trucking, materials, electricians). The log should show that each firm was contacted twice by two different methods (e.g., email and phone); who was spoken to; what was said; and the final outcome of the solicitation.
5. List of the general circulation, trade association, and DBE oriented publications and dates of publication soliciting for certified DBE participation as a subcontractor/supplier and copies of such solicitations.
6. Description of the negotiations between the contractor and certified DBEs for the purposes of complying with the DBE goals of this contract.
7. Any other information deemed relevant to the request.

EFC and the MBO reserve the right to request additional information and/or documentation.

Documentation for Requests for Specialty Equipment Exclusions:

8. A letter of explanation containing information about the equipment, why the equipment is specialty and why no DBE firms could be utilized to provide the equipment.
9. Copies of the appropriate pages of the technical specification related to the equipment showing the choices for manufacturers or other information that limits the choice of vendor.
10. Letter, email, or screenshot of website from the manufacturer listing their distributors in NYS and the locations.
11. Screenshots of DBE Directory searches for the manufacturer and distributor showing that they are not found in the Directory.
12. An invoice or executed purchase order showing the value of the equipment.

**NYS Environmental Facilities Corporation
Disadvantaged Business Enterprise (DBE) Utilization Plan**

Documentation for Requests for Specialty Service Exclusions:

13. A letter of explanation containing information about the scope of work and why no DBE firms could be subcontracted to provide that service.

SIGNATURE

Electronic Signature of Contractor: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and that all DBE subcontractors will participate in subcontracts in accordance with the requirements of 40 CFR Part 33.

Name (Please Type):

Date:

Attachment 2 – BABA Contractor’s Certification



Environmental Facilities Corporation

BABA CONTRACTOR CERTIFICATION

FOR EQUIVALENCY CONSTRUCTION CONTRACTS PAID FOR WITH FUNDS THROUGH
THE NYS CLEAN WATER STATE REVOLVING FUND, OVERFLOW AND STORMWATER GRANTS
OR

THE NYS DRINKING WATER STATE REVOLVING FUND VIA THE
NYS ENVIRONMENTAL FACILITIES CORPORATION

Project Title:

Contractor's Name:

Contract ID:

SRF Project No.:

SRF Recipient Name:

I certify that all iron and steel, manufactured products and construction materials permanently incorporated into the project under this construction contract will be and/or have been produced in the United States, in accordance with the requirements of the United States Environmental Protection Agency and Pub. L. No. 117-58 and any regulations promulgated thereunder. I will develop and maintain the necessary documentation to demonstrate that the applicable products permanently incorporated into the project were produced in the United States and make such documentation available to The New York State Environmental Facilities Corporation or their authorized representatives, upon request.

Signature: _____

Name (print):

Title:

Date:

Attachment 3 – AIS Contractor’s Certification



Environmental Facilities Corporation

AIS CONTRACTOR CERTIFICATION
FOR CONSTRUCTION CONTRACTS FUNDED THROUGH
THE NYS CLEAN WATER STATE REVOLVING FUND, OVERFLOW AND STORMWATER GRANTS
OR
THE NYS DRINKING WATER STATE REVOLVING FUND VIA THE
NYS ENVIRONMENTAL FACILITIES CORPORATION

Project Title:

Contractor's Name:

Contract ID:

SRF Project No.:

SRF Recipient Name:

I certify that the iron and steel products permanently incorporated into the public water system or wastewater treatment works project under this construction contract will be and/or have been produced in the United States, in accordance with the requirements of the United States Environmental Protection Agency and 33 U.S.C. § 1388, 42 U.S.C. § 300j-12(a)(4) and any regulations promulgated thereunder. I will develop and maintain necessary documentation to demonstrate that the iron and steel products permanently incorporated into the project were produced in the United States, and make such documentation available to The New York State Environmental Facilities Corporation or their authorized representatives, upon request.

Signature:

Name (print):

Title:

Date:

Attachment 4 – Lobbying Certification



Environmental Facilities Corporation

**New York State Environmental Facilities Corporation
CERTIFICATION REGARDING LOBBYING
FOR
CONTRACTS, GRANTS, LOANS, AND
COOPERATIVE AGREEMENTS
40 CFR Part 34**

SRF Project No.:

Recipient:

Project Description:

City of Poughkeepsie

Engineering Services for Fallkill Trunk Sewer Rehabilitation Project

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Signature:

Name:

Title:

Company Name:

Date:

Contract ID:

Sample Contract

CONTRACT AGREEMENT

This **AGREEMENT**, entered into as of the ____ day of ____, 2024, by and between the **CITY OF POUGHKEEPSIE** (hereinafter referred to as "**CITY**"), having offices at 62 Civic Center Plaza, Poughkeepsie, NY 12601, and _____, (hereinafter referred to as "**CONSULTANT**"), with an address of _____.

1. The term of this Agreement is from approximately _____, 2024 through _____, 2029 and/or shall expire upon completion of the projects administrative closeout.
2. The scope of the CONSULTANT's duties and responsibilities under this Agreement shall be to perform all of the duties as assigned by CITY consistent with the Scope of Services as attached hereto as Attachment "I".
3. The CONSULTANT agrees to comply with the funding requirements as listed in the Solicitation Documents: RFQ-COP-06-24-03 and are deemed incorporated herein by reference.
4. The CITY shall pay the CONSULTANT for his/her/their/its services rendered hereunder as set forth in the COST criteria of Attachment "I". Payment for such services shall be made within 30 days upon receipt of an invoice and any supporting documentation that may be requested by the CITY.
5. The CITY is exempt from all State and local taxes and will not be responsible for such portion of any invoice that is attributable to same. CITY will provide CONSULTANT with documentation to assert such exemption on request of the CONSULTANT.
6. The CONSULTANT shall maintain records appropriate to document and support the invoices submitted to the CITY for payments due to CONSULTANT in accordance with this Agreement.
7. The parties hereto intend that the CONSULTANT's relationship with the CITY shall be that of an independent contractor. No agent, employee or servant of the CONSULTANT shall be considered an agent, employee or servant of the CITY. The CITY is interested only in the results obtained under this Agreement; the time, manner and means of conducting the work are under the sole control of the CONSULTANT.
8. CONSULTANT shall indemnify and hold harmless CITY, its, directors, officers, agents, subcontractors and employees against any actions, suits, proceedings, liabilities and damages to the extent that they arise from or are related to the performance or failure to perform his obligation under this Agreement.
9. No member, official, or employee of the CITY shall have any personal interest, direct or indirect, in this Agreement nor shall any such members, official, or employee participate in any decision relating hereto which affects his or her personal interests or the interests of any corporation, partnership or association in which he or she is, directly or indirectly, interested. No members, official, or employee of the CITY shall be personally liable to the CONSULTANT or any successor in interest in the event of any default or breach by the CITY or for any amount which may become due to the CONSULTANT or successor on any obligations under the terms of this Agreement.
10. In the event of a material breach of any of the terms of this Agreement, the non-breaching party shall notify the breaching party in writing specifying the breach. The breaching party shall have ten (10) days from the date of written notice (the "Cure Period") to cure the breach. If the breach has not been cured within the

Cure Period, then at its option the non-breaching party may either terminate this Agreement by sending written notice thereof to the breaching party or it may institute any proceedings necessary to obtain such remedy as it deems desirable, including but not limited to proceedings to compel specific performance.

11. For purposes of this Agreement, neither party shall be considered in default of its obligations provided for herein in the event of enforced delay in the performance of such obligations due to unforeseeable causes beyond its control and without its fault or negligence, including, but not restricted to, acts of God, acts of the public enemy, acts of the other party, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather, or delays of subcontractors and suppliers due to such causes; it being the purpose and intent of this provision that, in the event of the occurrence of any such enforced delay, the time or times for performance of the obligations of the party shall be extended for the period of the enforced delay.

12. No waiver made by either party with respect to the performance, or manner or time thereof, or any obligation of the other party or any condition to its own obligation hereunder shall be considered a waiver of any of the rights of that party with respect to any other default or breach. No such waiver shall be valid unless it is in writing duly signed by the party waiving the right or rights.

13. A notice or communication under this Agreement either party to the other shall be sufficiently given or delivered if sent by first class mail to the addresses set forth at the first paragraph of this Agreement and addressed to the attention of the person or individual who signs the Agreement on behalf of the recipient of the notice.

14. If any term or provision of this Agreement shall to any extent be held to be invalid or unenforceable, the remainder of this Agreement shall not be affected thereby and each term and provision of this Agreement shall be valid and in force to the fullest extent permitted by law. This Agreement shall be governed by and construed under the laws of the State of New York.

15. Nothing in this Agreement shall be construed to create any duty to, or standard of care with reference to, or any liability to, any person not a party to this Agreement. The prior clause notwithstanding, the terms of this Agreement are binding on any subsidiary or affiliated business of the CONSULTANT, and each such entity shall be jointly and severally liable for the obligations of the CONSULTANT as set forth herein.

16. This Agreement may not be assigned, transferred or pledged by CONSULTANT without the written consent of the CITY, which consent may be withheld at the discretion of the CITY.

17. The CONSULTANT shall purchase and maintain in full force and effect insurance policies with the limits of insurance provided in the contract documents or the following insurance coverage's, whichever is greater. The insurance should be from an insurer that has an A.M. Best Rating of "A-" or better.

- a. Commercial General Liability with limits of not less than \$1,000,000 per occurrence, \$2,000,000 general aggregate, \$1,000,000 and \$2,000,000 products-completed operations aggregate. Such insurance shall cover liability arising from premises, operations, independent contractors, product-completed operations for one year following project completion, personal and advertising injury and liability assumed under an insured contract. There shall be no endorsement or modification of the Commercial GL form arising from pollution, explosion, collapse, underground property damage or work performed by subcontractors.
- b. If required by the CITY, professional liability with a limit of \$2,000,000 per claim/occurrence and \$2,000,000 annual policy aggregate.

- c. If required by the CITY, contractors pollution cleanup/remediation and pollution liability with a limit of \$2,000,000 per claim and \$2,000,000 annual policy aggregate
- d. Business Automobile Liability with a limit of not less than \$1,000,000 each accident, including owned, non-owned, leased and hired vehicles.
- e. Statutory Workers Compensation and employer's liability coverage for all employees, including corporate officers and sole proprietors.
- f. Umbrella/Excess Liability with a limit of not less than \$2,000,000 per occurrence/aggregate REVISED PER P.A. 3/23/2021

City of Poughkeepsie is to be included as an additional insured on a primary, non-contributory basis (using CG 2010 07/04 and CG 2037 10/01 or its equivalent) for item I. Items 1 and 6 will have no exclusions for New York State "labor law" claims and/or claims for injuries to subcontractor employees.

All policies required by this paragraph shall include a waiver of subrogation in favor of **City of Poughkeepsie**.

Except where prohibited by law, all policies and certificates of insurance shall expressly provide that **City of Poughkeepsie** must receive 30 days written notice in the event of material alteration, cancellation or nonrenewal of coverage, including subcontractors' insurance.

On receipt of such notice, the CITY shall have the option to cancel this Agreement without further expense or liability to the CITY, or to require the CONSULTANT to replace the canceled insurance policy, or to rectify any material change in the policy, so that the insurance coverage required by this paragraph is maintained continuously throughout the term of this Agreement in form and substance acceptable to the CITY. Failure of the CONSULTANT to take out or to maintain, or the taking out or the maintenance of any required insurance, shall not relieve the CONSULTANT from any liability under this Agreement nor shall the insurance requirements be construed to conflict with or to limit the obligations of the CONSULTANT concerning indemnification.

- a. All certificates of insurance shall contain a clause naming the CITY as loss payee on the policies and providing that any notices of cancellation of insurance be given to the CITY no less than ten (10) days' notice prior to any such cancellation.
- b. Renewal certificates covering the renewal of all policies expiring during the life of this Agreement shall be filed with the CITY not less than thirty (30) days before the expiration of such policies.
- c. Certificates should be sent to the attention of the Purchasing Agent, 62 Civic Center Plaza Poughkeepsie, NY 12601 or by email: sdavison@cityofpoughkeepsie.com

All insurance companies issuing policies relating to this Agreement must be licensed to do business in New York State and be approved by the CITY's Law Department.
All losses of CITY property shall be adjusted with and made payable directly to the CITY.

In the event that claims in excess of these amounts are filed in connection with this Agreement, the excess amount or any portion thereof may be withheld from payment due or to become due the CONSULTANT until the CONSULTANT furnishes such additional security as is determined necessary by the CITY.

18. The terms and conditions contained in this Agreement constitute the entire agreement between the parties and shall supersede all previous communications, representations or agreements, either verbal or written, between the parties with respect to the subject matter of this Agreement.
19. All information provided by CITY to CONSULTANT shall remain confidential and not disclosed to any other party without the written consent of the CITY.
20. This Agreement may be terminated by the CITY without cause upon thirty (30) days written notice to the CONSULTANT. Except as otherwise agreed in writing or as otherwise provided in this Agreement, upon termination neither the CITY nor CONSULTANT shall have any further obligation to each other by way of compensation or otherwise, however in no event shall termination by the CITY relieve the other party of obligations already incurred.
21. The CONSULTANT agrees that upon termination of this Agreement, the CONSULTANT will cooperate with the CITY to develop a transition plan and assist in affecting an orderly transfer of services and obligations to any successor CONSULTANT so as to prevent any disruption services.
22. The CONSULTANT agrees to comply with the provisions of the Americans With Disability Act of 1990 (ADA) prohibiting discrimination on the basis of disability with regard to employment policies and procedures, structural and program accessibility, transportation and telecommunications, insofar as those provisions are applicable to the work and/or services to be performed under this Agreement.
23. Any disputes arising directly or indirectly out of this Agreement shall be determined pursuant to the laws of the State of New York. The parties hereby choose the New York State Supreme Court, Dutchess County as the forum for any such disputes.
24. Litigation involving this Agreement, including breach or alleged breach thereof, may not be submitted to binding arbitration but must instead be heard in accordance with the preceding paragraph.
25. This Agreement shall be deemed to have been mutually prepared by the parties hereto and shall not be construed against any of them solely by reason of authorship.
26. Each and every provision of federal, state or local law, rule or regulation required by law to be inserted in this Agreement shall be deemed to have been inserted herein. If any such provision is not inserted through mistake or otherwise, then, upon the application of either party, this Agreement shall be physically amended to make such insertion.
26. The CONSULTANT shall comply with all local laws and resolutions of the Common Council of the City of Poughkeepsie, including, but not limited to, filing of Disclosure Statements and Affirmation Action Plans, if required by local law or resolution.
27. The CONSULTANT shall comply with all of the provisions of the Labor Law of the State of New York including, but not limited to, prevailing wage provisions, if required by law, and with Article 15 of the Executive Law of the State of New York relating to unlawful discriminatory practices, insofar as such provisions are applicable to the work and/or services to be performed under this Agreement.
28. During the term of this Agreement, CONSULTANT agrees not to discriminate against any employee or applicant for employment because of race, creed, sex, color, national origin, disability or marital status and

further agrees to take affirmative action to ensure equal employment opportunities without such discrimination. No services to be rendered pursuant to, or in connection with, this Agreement may be refused to any person because of age, race, creed, sex, color, national origin, disability or marital status.

29. The CONSULTANT agrees to maintain and have available for audit such records as may be required by the City of Poughkeepsie, County of Dutchess, State of New York or United States governmental agencies. These records shall be available for inspection by properly identified personnel of the above governmental agencies upon reasonable request and shall be maintained for a minimum of ten (10) years after termination of this Agreement.

This Agreement represents the entire understanding between the parties and shall not be modified except by a signed agreement mutually entered into by the parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement Contract.

THE CITY OF POUGHKEEPSIE

XXXXXXXXXXXX

By: _____
Yvonne Flowers, Mayor

By: _____
XXXXXXXXXXXX

STATE OF NEW YORK)

) ss:

COUNTY OF DUTCHESS)

On the day of , 2024, before me, the undersigned, a Notary Public in and for said state, personally appeared Yvonne Flowers, the Mayor of the city of Poughkeepsie, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s) or the person on behalf of which the individual(s) acted, executed the instrument.

Notary Public

STATE OF NEW YORK)

) **SS:**

COUNTY OF DUTCHESS)

On the _____ day of _____, 2024, before me, the undersigned, a Notary Public in and for said state, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s) or the person on behalf of which the individual(s) acted, executed the instrument.

Notary Public

Reviewed by Corporation Counsel: _____ Date: _____

ATTACHMENT 1

SAMPLE

EFC TERMS AND CONDITIONS

**RFP-COP-05-24-01 Engineering Services to
the JW Board**

Score Rating:
<u>Technical Score Rating:</u> 3- Exceeds minimum requirements 2 - Meets minimum Requirements 1 - Meets Some of the minimum requirements 0 - Does not meet minimum requirements <u>Cost Score Rating:</u> 3- Exceptionally Fair & Reasonable 2 - Fair & Reasonable 1 - Somewhat Fair & Reasonable 0 - Not Fair & Reasonable

		Pitingaro & Doetsch		C.T Male Assoc.		CPL		Barton & Loguidice		H2M		Tighe & Bond		
Criteria	Max Points	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	NOTES
Experience and Qualifications	50%	3	50.00%	2	33.33%	2	33.33%	3	50.00%	3	50.00%	3	50.00%	
Organization and Financial Responsibility	25%	2	16.67%	2	16.67%	2	11.11%	2	16.67%	2	16.67%	3	20.83%	
Cost of Services	25%	2	16.67%	3	25.00%	2	16.67%	2	16.67%	2	16.67%	2	16.67%	
Weighted Total Score	100%		83.33%		75.00%		61.11%		83.33%		83.33%		87.50%	

Date: 6-18-2024

Evaluator Name: Randy Alstadt

RFP-COP-05-24-05 Engineering Services to Perform Flow Study *INSTRUCTIONS:* Include your name on this matrix. Rate each category based on the legend in the right hand corner. Blank or N/A entries on the score sheets shall result in a zero score factoring into Bidders overall Average

Score Rating:

Technical Score Rating:

3- Exceeds minimum requirements

2 - Meets minimum Requirements

1 - Meets Some of the minimum requirements

0 - Does not meet minimum requirements

Cost Score Rating:

3- Exceptionally Fair & Reasonable

a | 2 - Fair & Reasonable

1 - Somewhat Fair & Reasonable

0 - Not Fair & Reasonable

		CPL		Bomi Enviromntal		H2M		M&J Engineering		Tighe & Bond		Barton & Loguidice		
Criteria	Max Points	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	NOTES
Experience and Qualifications	50%		0.00%	3	41.67%		0.00%		0.00%		0.00%	3	50.00%	
Organization and Financial Responsibility	25%		0.00%	2	16.67%		0.00%		0.00%		0.00%	2	16.67%	
Cost of Services	25%		0.00%	3	25.00%		0.00%		0.00%		0.00%	3	25.00%	
Weighted Total Score	100%		0.00%		83.33%		0.00%		0.00%		0.00%		91.67%	

Date: 9/26/2024

Summary Evaluation

**RFQ-COP-06-24-03 Fallkill Trunk Sewer Eng
Services**

INSTRUCTIONS: Include your name on this matrix. Rate each category based on the legend in the right hand corner. N/A entries on the score sheets shall result in a zero score factoring into Bidders overall Average

Score Rating:

Technical Score Rating:

- 3- Exceeds minimum requirements
- 2 - Meets minimum Requirements
- 1 - Meets Some of the minimum requirements
- 0 - Does not meet minimum requirements

		LaBella		Boswell Engineering		Barton & Loguidice		Pitingaro & Doetsch		Manganaro Engineers		
Criteria	Max Points	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	NOTES
Past Work Experience/References	20%	10	66.67%	10	66.67%	13	86.67%	12	80.00%	10	66.67%	
Staff Experience/Qualifications	20%	10	66.67%	12	80.00%	12	80.00%	12	80.00%	10	66.67%	
Public Funding NYSEC Experience	20%	9	60.00%	6	40.00%	14	93.33%	13	86.67%	7	46.67%	
Local Experience-Familiarity working with the City	20%	14	93.33%	9	60.00%	15	100.00%	10	66.67%	6	40.00%	
Project Management Plan	20%	12	80.00%	10	66.67%	12	80.00%	12	80.00%	12	80.00%	
Weighted Total Score	100%		366.67%		313.33%		440.00%		393.33%		300.00%	

CITY OF POUGHKEEPSIE POUGHKEEPSIE, NEW YORK



RFQ-COP-08-24-03

ENGINEERING SERVICES FOR THE SECONDARY CLARIFIERS FOR THE WATER POLLUTION CONTROL PLANT (WPCP) IMPROVEMENT PROJECT

Hon. Yvonne Flowers, Mayor

Joseph P. Donat, City Administrator

Council Member At Large

Da'Ron Wilson

Council Members

Ernest Henry
Evan Menist
Terricena Brown
Nathan Shook

Ondie James
Christopher Grant
Nedra Patterson Thompson
Megan Deichler

Return all bids to the:

City of Poughkeepsie
Purchasing Department
62 Civic Center Plaza
Poughkeepsie, NY
12601

TO BE ADVERTISED: September 7, 2024

FOR ONE DAY ONLY

CITY OF POUGHKEEPSIE, NEW YORK
ADVERTISEMENT AND NOTICE TO BIDDERS

Beginning Immediately, Sealed proposals are sought and invited by the City of Poughkeepsie ("The City") for **Engineering Services for the Secondary Clarifiers for the WPCP Improvement Project, Bid No. RFQ-COP-08-24-03**, as set forth in drawings and specifications prepared by the City of Poughkeepsie's Engineering Department.

Bids will be received by the Board of Contract and Supply, c/o Purchasing Agent, 62 Civic Center Plaza, Poughkeepsie, NY 12601 **until 2:30 pm on September 20, 2024**, after which time they will be opened but not and then distributed to the Review Committee. Proposals may be hand delivered at any time prior to the bid opening. Late proposals will not be accepted.

All Proposals must be submitted in a sealed envelope clearly marked:

PROPOSAL FOR BID # RFQ-COP-06-24-03: Engineering Services for Secondary Clarifiers for WPCP Improvement Project

Specifications and Contract are subject to provisions of Chapter 605, Laws of the State of New York of 1959, Section 103-A of the General Municipal Law and Federal Procurement Regulations 24CFR Part 85.36.

This project is being funded in part by the EFC – Environmental Facilities Corporation. All work under this contract must comply with the requirements of this funding source. **There is a 20% goal for MWBE** Participation and may contain special monthly reporting procedures.

The City of Poughkeepsie officially distributes bidding documents from the City of Poughkeepsie Purchasing Office, the City of Poughkeepsie website, www.cityofpoughkeepsie.com, the Hudson Valley Municipal Purchasing Group (HVMPG) Regional Bid Notification System, www.bidnetdirect.com/new-york, Copies of bidding documents obtained from any other source are not considered official copies. Only those vendors who obtain bidding documents from the Purchasing Office, the City of Poughkeepsie website, HVMPG Regional Bid Notification System or the NY State Contract Reporter will be sent addendum information, if such information is issued.

If you have obtained this document from a source other than the City of Poughkeepsie Purchasing Office, City of Poughkeepsie website, HVMPG Regional Bid Notification System, it is recommended that you obtain an official copy. You may obtain an official copy by registering on the HVMPG Regional Bid Notification System at www.bidnetdirect.com/new-york or by visiting www.cityofpoughkeepsie.com

STATEMENT OF NON-COLLUSION:

Bidders on the Contracts are required to execute a non-collusion bidding certificate pursuant to Section 103d of the General Municipal Law of the State of New York.

OWNERS RIGHTS RESERVED:

The City of Poughkeepsie expressly reserves the right to waive any irregularities in or to accept any bid or to reject any and all bids or to award on any or all items as the interest of the City of Poughkeepsie may appear to require.

DEPARTMENT OF FINANCE
CITY OF POUGHKEEPSIE

Brian Martinez, PhD
Commissioner of Finance

Dated: September 7, 2024



City of Poughkeepsie, NY

Request for Qualifications-Engineering Services

for

Water Pollution Control Plant (WPCP) Improvements Secondary Clarifier Reconstruction Project

DATE ISSUED: September 5, 2024

Program Requirements:

- o NYS Environmental Facilities Corporation (EFC) Clean Water State Revolving Fund (CWSRF)
- o Mandatory State Revolving Fund Terms and Conditions
- o Minority Women Business Enterprise Goals and Guidance
- o Davis Bacon Wage Rates
- o American Iron and Steel (AIS)
- o Build America/Buy America (BABA) domestic sourcing
- o Federal Equivalency compliance including National Environmental Protection Act (NEPA) environmental review, federal cross-cutting authorities, disadvantaged business enterprises (DBE), (MWBE) single audit reporting, and surveillance services and equipment procurement, as applicable
- o Federal signage terms and conditions requiring a physical sign at construction sites

INTRODUCTION

A. Description:

The City of Poughkeepsie is issuing this Request for Qualifications for the qualifications-based procurement of an engineering firm to assist with engineering and construction related tasks associated with the WPCP Improvements NYS CWSRF Project No. 7348-03-00. Utilizing a qualifications-based process, the city will select a consulting engineering firm licensed in the State of New York to design, bid, construct and close out the project as needed.

B. Overview:

The City and Town of Poughkeepsie jointly own a 10 mgd Water Pollution Control Facility (SPDES permit No. NY 0026255) for wastewater treatment. A capital improvement plan project has been carried out by the city to construct various plant upgrades to the sewer plant. This work commenced in 2018 as NYSEFC CWSRF project number 7348-03-00.

The city is now seeking an engineering firm to administer, construct and close out the project as needed. The project will be financed through the NYS Clean Water State Revolving Fund (CWSRF) program administered by NYS EFC. The selected engineering firm will be responsible for complying with all funding federal and state agency requirements. The city may seek additional funding from other agencies as the project develops.

This Request for Qualifications ("RFQ") is being issued by the City of Poughkeepsie ("the City") for Engineering Services for a project that will improve the WPCP. Completed plant improvements under the EFC project 7348-03 included roof repairs, HVAC system upgrades, and high lift pump replacements. Presently the city is in the process of reconstructing the existing Secondary Clarifiers at the facility, the last of the specified upgrades under this project. Contract Drawings appear in the Appendix as **Exhibit A**.

The work was bid in 2022, and a contract was awarded to CFI to carry out the required work. CFI completed the west basin reconstruction per contract design documents prepared by Clark Patterson Lee Engineers that included spiral blade clarifiers. A new spiral blade clarifier was installed in the west basin replacing the existing draft tube clarifier equipment. Unfortunately, the spiral blade units did not have sufficient capacity to address removals with actual flows. A forensic evaluation and report was completed by an independent engineering firm, Wright Pierce Engineers in 2023, see **Appendix Exhibit B**. It was concluded that the specified spiral blade equipment did not have sufficient capacity to handle the actual flows of the secondary clarifiers which led to disruptions in plant operations.

After significant analysis, it was determined that the spiral blade units be replaced with draft tube units to accommodate the actual plant flows. As a result, the work scope to be performed under this RFQ will require the following engineering services:

- Task 1- Develop Specification of Clarifier Equipment for Procurement and Contract Drawings to facilitate change order preparation as required. Verify that specified equipment can sufficiently process actual plant flows, perform equipment submittal reviews, and provide recommendations to Project Manager.
- Task 2- Engineering Services during Procurement Phase-review equipment orders and confirm that the required equipment and accessories are ordered by Contractor.

- Task 3-Engineering during Construction Phase-provide engineering support as required, verify equipment installations, provide engineering information as required to address RFI's during construction and provide final certification for the completed construction. Provide construction administration and observation services as required.

Companies with demonstrated experience in municipal sanitary/combined sewer improvement projects and public funding agency administration interested in making their services available to the city are invited to respond to this RFQ. "Respondents" means the companies or individuals that submit qualifications in response to this RFQ.

It is understood that the selected Respondent acting as an individual, partnership, corporation, or other legal entity, is licensed to provide such services in New York State. The Respondent shall be financially solvent and each of its members if a joint venture, its employees, agents, or subconsultants of any tier shall be competent to perform the services required under this RFQ document.

The city is seeking to encourage participation by respondents who are MWBE/WBE, and/or Service-Disabled business enterprises. For the purposes of the project, the city requires documented MWBE/WBE participation compliance & good faith effort per the Program requirements. **The MWBE goal is 20% and the consultant must demonstrate and document "good faith efforts" per the Program requirements.**

For purposes of providing meaningful participation by MWBEs on the Contract and achieving the MWBE Contract Goals established in Section III-A hereof, the Contractor should reference the directory of New York State Certified MWBEs found at <https://ny.newnycontracts.com>.

See Section 2, III of the Mandatory State Revolving Fund Project Terms and Conditions for additional information.

If the Consultant awards a subcontract to MWBE, the contract shall contain the EFC Equivalency Terms and Conditions attached hereto, and copies of all subcontracts shall be submitted to the Purchasing Agent.

Nothing in this RFQ shall be construed to create any legal obligation on the part of the City or any respondents. The City reserves the right, in its sole discretion, to amend, suspend, terminate, or reissue this RFQ in whole or in part, at any stage. In no event shall the City be liable to respondents for any cost incurred in connection with the RFQ process, including but not limited to, all costs of preparing a response to this RFQ or any other costs incurred in reliance on this RFQ. No respondent shall be entitled to repayment from the City for any costs, expenses or fees related to this RFQ. All supporting documentation submitted in response to this RFQ will become the property of the City. Respondents may also withdraw their interest in the RFQ, in writing, at any point in time as more information becomes known.

C. Time of Response

Respondents will have approximately three (3) weeks to provide a response to this RFQ. The city will then review the qualifications for selection during _____ and an interview via Zoom will be scheduled with qualifying firms.

- | | |
|-------------------------------|--|
| 1. RFQ Posted: | Thursday, September 5, 2024 |
| 2. Qualifications Due: | Friday, September 20, 2024, by 2:30 pm., local time |
| 3. City Review: | TBD– Virtual interview as required |
| 4. Engineering Firm Selected: | TBD 2024 |

D. Contract Negotiations

After review and interviews are complete, if the City so desires, the selected engineering firm shall provide the City with an engineering agreement for review and approval.

E. Contract Execution

Once the contract Terms and Conditions have been approved, the final contract will be executed. Funding program requirements must be completed and provided as part of the contract documents, such as the EEO, M/WBE Plans, other required forms and plans, etc.

F. Term of Contract

Any contract awarded pursuant to this RFQ solicitation shall be for a contract period of approximately five (5) years and will expire upon completion of the projects' administrative close out.

Funding Agency Requirements-Consultant shall assist city in complying with the following provisions

Award recipients must follow the guidance of the funding agency. All Respondents will be required to adhere to the following Funding Agencies' requirements:

- Davis Bacon Related Acts (DBRA) Compliance
Disadvantaged Business Enterprises (DBE) & Minority Women Business Enterprise (MWBE) Compliance
- Service-Disabled Veteran-Owned Businesses (SDVOB) Compliance
- Equal Employment Opportunity (EEO) Compliance Anti-Lobbying Policy
- American Iron & Steel Compliance
- Federal Equivalency compliance including National Environmental Protection Act (NEPA) environmental review, federal cross-cutting authorities, disadvantaged Business enterprises (DBE), single audit reporting, and surveillance services and equipment procurement, as applicable Federal signage terms and conditions requiring a physical sign at construction sites (Additional details and specifications will be provided)

Respondents are strongly encouraged to read these regulations prior to submitting their response to this RFQ. Dates and schedules provided by the above funding agencies will be incorporated into the project scope of work and schedule requirements.

PROFESSIONAL SERVICE REQUIREMENTS

A. Scope of Services

Demonstration of Need

This Request for Qualifications ("RFQ") is being issued by the City of Poughkeepsie ("the City") for Engineering Services for a project that will improve the Water Pollution Control Plant. Plant improvements include the removal of existing clarifiers and installation of new units and appurtenances per design drawings.

The project will be funded through grants and loans thru the Clean Water State Revolving Fund (CWSRF) program, administered locally by New York State Environmental Facilities Corporation (NYS EFC), and all aspects must be compliant to their requirements.

A project engineering evaluation report was prepared to develop the scope of work and contract scope for this proposed project and is provided in the Appendix as Exhibit B.

Engineering firms shall be required to provide the following at a minimum:

- > **General Requirements** - The consultant shall participate in public meetings, preconstruction and job meetings and distribution of meeting minutes to the City. The consultant shall be responsible for ensuring compliance with BIL and CWSRF requirements for all work. The consultant will be responsible for any technical information required for project development and permitting purposes. The consultant shall additionally coordinate with regulatory & funding program representatives as requested for review and approval of the bid package and any compliance measures.
- > **Field Investigations** - The consultant shall conduct such fieldwork they deem necessary to obtain the required information to properly design the sewer system improvements. This work may include, but not be limited to surveying, geotechnical and environmental studies, and evaluation of all system components.
- > **Bidding Assistance** - The consultant shall provide procurement assistance for this project as applicable including providing copies and plans and specifications to be distributed to contractors, answering contractor questions, issuing addenda, as necessary, reviewing the change orders or bids as applicable, and making recommendations to the City.

B. Construction Administration & Observation - The consultant shall provide construction administration services including, but not limited to, the following:

1. Issuing a Notice to Proceed (NTP) in collaboration with city staff.
2. Reviewing and approving all submittals, shop drawings and substitutions, as necessary.
3. Reviewing and making recommendations to the city for any requested Change Orders
4. Reviewing and certifying contractor application for payment and making recommendations to the city for payment.
5. Provide contractor Certified Payrolls.
6. Providing adequate construction observations services to ensure proper construction of the project.

7. Review of the final work and development of a punch list.
8. Provide a letter of construction compliance and record drawings at the end of the project.
9. Provide Operations and Maintenance Manuals for the project as applicable.

The consultant shall be responsible for coordinating all aspects of this project and addressing any questions or concerns of the NYS Department of Environmental Conservation, Department of Health, NYSEFC, and any other regulatory agencies as required. Additionally, the consultant shall work to meet all M/WBE participation requirements and goals, as required for funding compliance.

C. Qualifications and Experience

This Request for Qualifications will determine the most qualified Engineering Firm to secure and provide funding administration, program work, survey, design, prepare permitting and bidding documents as applicable, proceed with construction administration and observation including following all City, State and Federal rules and regulations governing the NYSEFC funding program. Consultants must provide a Qualifications and Experience Statement with this proposal that includes information described in Section B and C of the Submittal Requirements.

D. Quality of Work

All work shall follow recognized professional practices and standards and meet the specifications required by local, state and federal approval of the project's plans and specification prior to advertising the project for construction bidding.

SUBMITTAL REQUIREMENTS

A. Preliminary Requirements

1. * Evidence of Insurance: Commercial General Liability with limits not less than \$2,000,000; Workers Compensation and Employers Liability with limits not less than \$500,000; Automobile Liability with limits not less than \$1,000,000 per occurrence; and Professional Liability insurance with limits of \$2,000,000 must be provided by the selected consultant with the agreement.
2. * References: At least three (3) references of related projects, including date of project, contact person and phone number, and a brief description of the project.

B. Letter of Interest

Submit a Cover Letter of Interest signed by a duly authorized officer or representative of the Respondent, not to exceed two pages in length.

The Letter of Interest must also include the following information:

- The principal place of business and the contact person, title, telephone/fax numbers and email address.

- A summary of the qualifications of the Respondent and team.
- Description of organization (i.e. Professional Corporation, or Professional Limited Liability Company).
- If the Respondent is a partially owned or fully owned subsidiary of another organization, identify the parent organization and describe the nature and extent of the parent organization's approval rights, if any, over the activities of the Respondent.

C. **Main Proposal**

The purpose of the proposal is to demonstrate the qualifications, competence and capacity of the Respondents in conformity with the requirements of this RFQ. The substance of proposals will carry more weight than their form or manner of presentation. The proposal should demonstrate the qualifications of the firm and the staff. It should also specify an approach that will meet the request for proposals requirements. The proposal should address all the points outlined in the request for qualifications and should be prepared to provide a straightforward, concise description of the proposer's capabilities to satisfy the requirements of the request for qualifications. While additional data may be presented, the following items must be included; this represents the criteria against which the proposal will be evaluated.

1. **Qualifications Proposal:**

Provide a synopsis of the years of experience and detailed qualifications in performing the range of municipal sewer system improvements on various project types in compliance with applicable standards, including team's resumes. Respondents should provide a narrative with examples of three (3 min.) projects in detail that are similar in nature to projects described in the RFQ (see "References"). References for similar projects and project profiles will be reviewed to evaluate the level of experience.

2. **Technical Proposal:**

- Project Management Plan:** Discuss approach to the project in terms of understanding of the established Scope and Deliverables execution, regarding any constraints identified in this RFQ, to include funding requirements. Provide a plan for engaging the City's project team and regulatory agencies required. Provide the number of full-time and part-time employees, partnerships or subconsultants proposed.
- Schedule:** Capacity to complete the scope of work within the defined period of performance as it is expected the project will be completed in a three-year period. The successful Respondent will have a project schedule & work plan to illustrate the ability to complete the work with respect to constraints, either stated or assumed.
- Funding Agency Experience:** Respondents shall cite previous project experience in working with M/WBE firms, cite any existing partnerships with M/WBEs or cite the planned M/WBE partnerships relevant to addressing requirements of this project & RFQ.

SELECTION PROCESS

The Selection Committee comprised of city staff will review qualifications in accordance with the evaluation criteria set forth herein. Proposals that are submitted in a timely manner and comply with the mandatory requirements of the RFQ will be evaluated in accordance with the terms of the RFQ. Professional services shall be awarded to vendor whose proposal received the most points in accordance with criteria set forth in RFQ. An interview will be scheduled via Zoom to further discuss qualifications and the scope of work.

EVALUATION CRITERIA AND SCORING

In evaluating responses to this Request for Qualifications, the City will take into consideration the experience, capacity, and funding experience that are being proposed by the Respondent. The following Evaluation Criteria will be considered in reviewing submittals:

The point system is to evaluate the experience and capacity of the Respondent. Maximum is **100 Points**:

- Respondents will be awarded up to 80 Points for the Qualifications Proposal.
 - o Past Work Experience/References: 20 Points
 - o Staff Experience/Qualifications: 20 Points
 - o Public Funding NYSEFC Experience: 20 Points
 - o Local Experience – Familiarity Working with the City: 20 Points
- Respondents will be awarded up to 20 Points for the Technical Proposal:
 - o Project Management Plan: 20 Points
 - o
- **COST**

PLEASE INCLUDE YOUR COST PROPOSAL IN A SEPARATE ENVELOPE

QUESTIONS

Please contact the City Engineering Department, (845) 451-4192 or engineeringdepartment@cityofpoughkeepsie.com for additional information or questions concerning the RFQ. Questions are due by Wednesday, September 18, 2024 by 4:00 p.m.

PROPOSAL SUBMISSION AND CONTACT PERSON

Four (4) hard copies and one (1) digital copy of the proposal should be submitted no later than 2:30 PM, September 20, 2024 in a sealed envelope clearly marked: **RFQ-COP-08-24-03 Engineering Services for Secondary Clarifiers for WPCP Improvement Project** to:

Shirley Davison | Purchasing Agent
City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, NY 12601

Forms to be submitted:

- 1. MWBE Utilization Plan**
- 2. AIS Certification**
- 3. Lobbying Certification**
- 4. Iran Divestment Certification.**

EFC TERMS AND CONDITIONS



Mandatory State Revolving Fund Terms and Conditions

**For Contracts Funded with the NYS Clean Water State Revolving Fund
or Drinking Water State Revolving Fund**

Identify Contract Type prior to Advertisement for Bid:

☐ **Construction**

☐ **Treatment Works and Drinking Water Projects**

☐ **Non-Treatment Works**

☒ **Non-Construction**

Effective October 1, 2023

**New York State Environmental Facilities Corporation
625 Broadway, Albany, NY 12207-2997
P: (518) 402-6924
www.efc.ny.gov**

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INTRODUCTION

The terms and conditions below must be incorporated verbatim into contracts receiving SRF financial assistance. Additional information relating to each of the requirements is included in the companion guidance document.

REQUIRED CONTRACT LANGUAGE

COMMONLY USED TERMS

The following commonly used terms are defined herein as follows:

Broker means a firm that does not itself perform, manage or supervise the work of its contract or subcontract in a manner consistent with the normal business practices for contractors or subcontractors in its line of business.

Construction means the process by which a contractor or subcontractor builds, alters, repairs, remodels, improves or demolishes infrastructure.

Contract means an agreement between a Recipient and a Contractor.

Contractor means all bidders, prime contractors, non-construction service providers, and consultants as hereinafter defined, unless specifically referred to otherwise.

Manufacturer means a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the Contract and of the general character described by the specifications.

MBO is designated and employed by the Recipient as a Minority Business or Compliance Officer responsible for MWBE/DBE/SDVOB/EEO reporting and compliance.

Non-Construction Provider means any individual or business enterprise that provides one or more of the following: legal, engineering, financial advisory, technical, or other professional services, supplies, commodities, equipment, materials, or travel.

Recipient means the party, other than EFC, to a grant agreement or a project finance agreement with EFC through which funds for the payment of amounts due thereunder are being paid in whole or in part. Responsible through Project Finance Agreement (PFA) to comply with EFC requirements.

State means the State of New York.

Subcontract means an agreement between a Contractor and a Subcontractor.

Subcontractor means any individual or business enterprise that has an agreement, purchase order, or any other contractual arrangement with a Contractor.

Supplier means a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

Treatment Works is defined in Clean Water Act (CWA) Section 212. This does not include nonpoint source projects as defined in CWA Section 319 and estuary management program projects as defined in CWA Section 320.

SECTION 1 FEDERAL ARCHITECTURAL AND ENGINEERING PROCUREMENT REQUIREMENTS

Any Architectural and Engineering (A/E) services for all CWSRF projects and for DWSRF projects receiving federal grant are required to be procured in compliance with 40 USC 1101 et. seq., and 48 CFR Part 36 Subpart 36.6. The Recipient must certify compliance to receive financing. Disregard this section if it does not apply to this Contract.

SECTION 2 REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR WOMEN AND MINORITY GROUP MEMBERS

The Equal Employment Opportunities requirements of this section apply to all Contracts and Subcontracts, with the exception of: (1) the requirements under Title VII of the Civil Rights Act of 1964 and 41 CFR Part 60-1 Subpart A which apply only to construction Contracts and Subcontracts; and (2) the Federal Affirmative Action Regulations requirements which apply only to construction Contracts and Subcontracts greater than \$10,000.

The Minority- and Women- Owned Business Enterprises ("MWBE") participation requirements of this section apply to the Contracts Meeting Article 15-A Thresholds.

Contracts Meeting Article 15-A Thresholds means Contracts or Subcontracts meeting the thresholds under New York State Executive Law Article 15-A as follows:

- a) Non-Construction Provider Contracts greater than \$25,000;
- b) Non-Construction Provider Contracts that are initially under \$25,000 but subsequent change orders or contract amendments increase the Contract value to above \$25,000;
- c) Construction Contracts greater than \$100,000; and,
- d) Construction Contracts that are initially under \$100,000 but subsequent change orders or contract amendments increase the Contract value to above \$100,000.

Disregard this section if it does not apply to this Contract or Subcontract.

I. General Provisions

- A. Contractors and Subcontractors are required to comply with the following provisions:
 1. New York State Executive Law Article 15-A and 5 NYCRR Parts 140-145 ("MWBE Regulations") for all State Contracts meeting Article 15-A thresholds.
 2. Title VI of the Civil Rights Act of 1964 and 40 CFR Part 7 ("Title VI") for any program or activity receiving federal financial assistance, as those terms are defined therein.
 3. Title VII of the Civil Rights Act of 1964 and 41 CFR Part 60-1 Subpart A ("Title VII") for construction Contracts related to any government programs providing federal financial assistance, as those terms are defined therein.
 4. 41 CFR Part 60-4 ("Federal Affirmative Action Regulations") for federal or federally assisted construction Contracts in excess of \$10,000, as those terms are defined therein.
 5. Section 504 of the Rehabilitation Act of 1973 ("Section 504") for any program or activity receiving federal financial assistance, as those terms are defined therein.
 6. The Age Discrimination Act of 1975 ("Age Discrimination Act") for any program or activity receiving federal financial assistance, as those terms are defined therein.

7. Section 13 of the Federal Water Pollution Control Act ("Clean Water Act") Amendments of 1972 ("Section 13") for any program or activity receiving federal financial assistance under the Clean Water Act, as those terms are defined therein.
- B. Upon request from the Recipient and/or EFC, Contractor will provide complete responses to inquiries and all MWBE and EEO records available within a reasonable time or as otherwise determined by EFC.
- C. Failure to comply with all of the requirements herein may result in a finding by the Recipient that the Contractor is non-responsive, non-responsible, and/or has breached the Contract, leading to the withholding of funds or such other actions, liquidated damages pursuant to subsection III(E) of this section, or enforcement proceedings as allowed by the Contract.
- D. If any terms or provisions herein conflict with Executive Law Article 15-A, the MWBE Regulations, Title VI, Title VII, or Federal Affirmative Action Regulations, such law and regulations shall supersede these requirements.

II. Equal Employment Opportunities (EEO)

- A. Each Contractor and Subcontractor performing work on the Contract shall undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, EEO shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation.
- B. The Contractor shall comply with the provisions of the Human Rights Law (Executive Law Article 15), Title VI, Title VII, the Federal Affirmative Action Regulations, Section 504, Age Discrimination Act, Section 13, and all other State and Federal statutory and constitutional non-discrimination provisions. The Contractor and Subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.
- C. Contractors and Subcontractors shall have instituted grievance procedures to assure the prompt and fair resolution of complaints when a violation of Title VI of the Civil Rights Act of 1964 or Title 40 CFR Part 7 is alleged.
- D. Pursuant to 40 CFR § 7.95, the Contractor shall display a copy of the EEO notice at the project site in a visible location. The notice shall accommodate individuals with impaired vision or hearing and should be provided in languages other than English where appropriate. The notice must also identify the employee responsible for its EEO compliance. See guidance document for sample notice.
- E. The Contractor will include the provisions of Subdivisions II(A) and II(C) in every Subcontract in such a manner that the requirements of these subdivisions will be binding upon each Subcontractor as to work in connection with the Contract.
- F. The Contractor and Subcontractor will comply with the requirements of 41 CFR § 60-1.4(b) and (c), and such provisions are hereby incorporated by reference. These provisions require, in part, that the Contractor and Subcontractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor and Subcontractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

- G. **For construction contracts in excess of \$10,000**, the Contractor and Subcontractor will comply with the Affirmative Action Regulations and such provisions are hereby incorporated by reference. These provisions require, in part, that the Contractor and Subcontractor place affirmative action goals on Contracts and Subcontracts, as established by the United States Department of Labor. See guidance document for goals.
- H. Pursuant to 41 CFR Section 60-1.7 for federally assisted construction Contracts, Contractor and Subcontractor will annually file an EEO-1 Report with the Joint Reporting Committee for the Office of Federal Contract Compliance Programs (OFCCP) and the Equal Employment Opportunity Commission (EEOC) according to the instructions provided at <https://www.eeoc.gov/employers/eEO-1-survey/eEO-1-instruction-booklet> , if Contractor or Subcontractor:
1. Is not exempt from compliance pursuant to 41 CFR § 60-1.5;
 2. Has 50 or more employees;
 3. Is a prime Contractor or first tier Subcontractor; or Subcontractor below the first tier which performs construction work at the site of construction; and
 4. Has a Contract, Subcontract, or purchase order amounting to \$50,000 or more.

III. Business Participation Opportunities for MWBEs

Applicable to Contracts Meeting Article 15-A Thresholds

A. Contract Goals

1. **New York State certified MWBE participation goals for this contract are 20%.** For projects funded from the sources listed below, the goals may be achieved through any combination of MBE and/or WBE participation.
 - a. CWSRF, DWSRF & Green Innovation Grant Program (GIGP).
 - b. NYS Water Infrastructure Improvement Act Grants that are also receiving EFC financing.
 - c. NYS Intermunicipal Grants that are also receiving EFC financing.
2. For purposes of providing meaningful participation by MWBEs on the Contract and achieving the MWBE Contract Goals established in Section III-A hereof, the Contractor should reference the directory of New York State Certified MWBEs found at <https://ny.newnycontracts.com>.
3. The Contractor understands that only sums paid to MWBEs for the performance of a commercially useful function, as defined in 5 NYCRR § 140.1, may be applied towards achievement of applicable MWBE participation goals.
 - a. For construction and construction-related services Contracts or Subcontracts, the portion of the Contract or Subcontract with an MWBE serving as a Supplier, and so designated in ESD's Directory, that shall be deemed to represent the commercially useful function performed by the MWBE shall be 60% of the total value of the Contract or Subcontract. The portion of a Contract or Subcontract with an MWBE serving as a Broker, as denoted by NAICS code 425120, that shall be deemed to represent the commercially useful function performed by the MWBE shall be the monetary value for fees, or the markup percentage, charged by the MWBE.
 - b. For Non-Construction Provider Contracts or Subcontracts, the portion of a Contract or Subcontract with an MWBE serving as a Broker that shall be deemed to represent the commercially useful function performed by the MWBE shall be 25% of the total value of the contract.
4. Where MWBE Contract Goals have been established herein, pursuant to 5 NYCRR § 142.8, the Contractor must document "good faith efforts" to provide meaningful participation by MWBEs as Subcontractors or Suppliers in the performance of the Contract.

5. In accordance with Section 316-a of Article 15-A and 5 NYCRR § 142.13, the Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the MWBE participation goals set forth in the Contract, such a finding constitutes a breach of Contract and the Contractor shall be liable to the Recipient for liquidated or other appropriate damages, as set forth herein.

B. MWBE Utilization Plan

1. The Contractor represents and warrants that Contractor has submitted a completed copy of the MWBE Utilization Plan with all required bid forms to the MBO no later than the execution date of this Contract.
2. The Contractor agrees to use such MWBE Utilization Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section III-A of this section.
3. The Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, the Recipient shall be entitled to any remedy provided herein, including but not limited to, a finding that the Contractor is not responsive.
4. The Contractor must report any changes to the Utilization Plan after Contract award and during the term of the Contract to the MBO. The Contractor shall indicate the changes to the MBO in the Monthly MWBE Contractor Compliance Report immediately following the change. At EFC's discretion, an updated MWBE Utilization Plan form and good faith effort documentation may be required to be submitted. When a Utilization Plan is revised due to execution of a change order, the change order should be submitted to the MBO with the Monthly MWBE Contractor Compliance Report or revised Utilization Plan.
5. The Contractor shall submit copies of all fully executed Subcontracts, agreements, and purchase orders that are referred to in the MWBE Utilization Plan to the MBO within 30 days of their execution.

C. Request for Waiver

1. If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit a Request for Waiver to the MBO documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request aligns with the documentation identified on the Request for Waiver form, the MBO shall forward the request to EFC for evaluation, and EFC will issue a written notice of acceptance or denial within twenty (20) days of receipt.
2. If the MBO, upon review of the MWBE Utilization Plan and updated Quarterly MWBE Contractor Compliance Reports determines that the Contractor is failing or refusing to comply with the MWBE Contract Goals and no waiver has been issued in regards to such non-compliance, the Recipient may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

D. Monthly MWBE Contractor Compliance Report ("Monthly MWBE Report")

1. The Contractor agrees to submit a report to the MBO by the third business day following the end of each month over the term of this Contract documenting the payments made and the progress towards achievement of the MWBE goals of the Contract. The Monthly MWBE Report must be supplemented with proof of payment by the Contractor to its Subcontractors (e.g., copies of both sides of a cancelled check) and proof that Subcontractors have been paid within 30 days of receipt of payment from the Recipient. The final Monthly MWBE Report must reflect all Utilization Plan revisions and change orders.

E. Liquidated Damages - MWBE Participation

1. In accordance with Section 316-a of Article 15-A and 5 NYCRR §142.13, if it has been determined by the Recipient or EFC that the Contractor has willfully and intentionally failed to comply with the MWBE participation goals, the Contractor shall be obligated to pay to Recipient liquidated damages or other appropriate damages, as specified herein and as determined by the Recipient or EFC.
2. Liquidated damages shall be calculated as an amount not to exceed the difference between:
 - a. All sums identified for payment to MWBEs had the Contractor achieved the approved MWBE participation goals; and,
 - b. All sums actually paid to MWBEs for work performed or materials supplied under this Contract.
3. The Recipient and EFC reserve the right to impose a lesser amount of liquidated damages than the amount calculated above based on the circumstances surrounding the Contractor's non-compliance.
4. In the event a determination has been made by the Recipient or EFC which requires the payment of damages identified herein and such identified sums have not been withheld, Contractor shall pay such damages to the Recipient within sixty (60) days after they are assessed unless prior to the expiration of such sixtieth day the Contractor has filed a complaint with the Empire State Development Corporation – Division of Minority and Women's Business Development ("ESD") pursuant to Subdivision 8 of Section 313 of the Executive Law in which event the damages shall be payable if the Director of ESD renders a decision in favor of the Recipient.

SECTION 3 PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED SERVICE-DISABLED VETERAN-OWNED BUSINESSES

The requirements of this section apply to all Construction Contracts and Subcontracts

- A. New York State Veterans' Service Law Article 3, and 9 NYCRR Part 252, and/or any other related regulations promulgated thereto, provides for more meaningful participation in public procurement by certified Service-Disabled Veteran-Owned Businesses ("SDVOBs"), thereby further integrating such businesses into New York State's economy. New York State recognizes the need to promote the employment of service-disabled veterans and to ensure that certified service-disabled veteran-owned businesses have opportunities for maximum feasible participation in the performance of EFC Contracts.

In recognition of the service and sacrifices made by service-disabled veterans and in recognition of their economic activity in doing business in New York State, Contractors are strongly encouraged and expected to consider SDVOBs in the fulfillment of the requirements of the Contract. Such participation may be as Subcontractors or Suppliers, as protégés, or in other partnering or supporting roles.

- B. Contractor is encouraged to make good faith efforts to promote and assist in the participation of SDVOBs on the Contract for the provision of services and materials. The directory of New York State Certified SDVOBs can be viewed at: <http://ogs.ny.gov/Core/SDVOBA.asp>.
- C. Contractor is encouraged to contact the Office of General Services' Division of Service-Disabled Veteran's Business Development at 518-474-2015 or VeteransDevelopment@ogs.ny.gov to discuss methods of maximizing participation by SDVOBs on the Contract.

SECTION 4 AMERICAN IRON AND STEEL (AIS) REQUIREMENT

The requirements of this section apply to (1) all Construction Contracts and Subcontracts for DWSRF projects and CWSRF Treatment Works projects and (2) all Contracts for the purchase of iron and steel products for a DWSRF project or CWSRF Treatment Works project. Disregard this section if it does not apply to this Contract or Subcontract.

The Contractor shall submit with their bid or proposal documents an executed AIS Contractors Certification on the form attached hereto as [Attachment 2](#) acknowledging to and for the benefit of the Recipient of the Clean Water State Revolving Fund ("CWSRF") or the Drinking Water State Revolving Fund ("DWSRF") financial assistance that the Contractor understands the goods and services under this Agreement are being funded with monies made available by the New York State Environmental Facilities Corporation ("EFC") through the CWSRF or the DWSRF and that such funding is subject to certain statutory restrictions requiring that certain iron and steel products used in the project be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contractor pursuant to this Agreement.

The Contractor hereby represents and warrants that:

- (a) the Contractor has reviewed and understands the American Iron and Steel Requirement,
- (b) all of the iron and steel products covered by the American Iron and Steel Requirement used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and
- (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Recipient.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Recipient to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Recipient resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the EFC or any damages owed to the EFC by the Recipient). While the Contractor has no direct contractual privity with the EFC, as a lender to the Recipient for the funding of this project, the Recipient and the Contractor agree that the EFC is a third-party beneficiary and neither this paragraph, nor any other provision of this Agreement necessary to give this paragraph force or effect, shall be amended or waived without the prior written consent of the EFC.

SECTION 5 DAVIS-BACON (DB) PREVAILING WAGE REQUIREMENTS

The requirements of this section apply to all Construction Contracts and Subcontracts greater than \$2,000 for either DWSRF projects or CWSRF Treatment Works projects. Disregard this section if it does not apply to this Contract or Subcontract.

For Contracts in Excess of \$2,000:

1. Minimum Wages

- (i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis–Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (1)(ii) of this section) and the Davis–Bacon poster (WH–1321) shall be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. The Davis–Bacon poster (WH-1321) can be found at <https://www.dol.gov/whd/regs/compliance/posters/davis.htm> . Wage determinations may be obtained from the US Department of Labor's website, <https://beta.sam.gov/> .

- (ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the Contract shall be classified in conformance with the wage determination. The contracting officer shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
1. The work to be performed by the classification requested is not performed by a classification in the wage determination;
 2. The classification is utilized in the area by the construction industry; and,
 3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.
- (C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.
- (D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (1) (ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

- (iii) Whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
 - (iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program *provided* that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis–Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
2. Withholding. The Recipient shall upon its own action or upon written request of the EPA Award Official or an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis–Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the Contract, the Recipient may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
3. Payrolls and basic records.
- (i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis–Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR § 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis–Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
 - (ii)(A) The Contractor shall submit weekly for each week in which any Contract work is performed a copy of all payrolls to the Recipient. Such documentation shall be available on request of EFC or EPA. As to each payroll copy received, the Recipient shall provide written confirmation in a form satisfactory to EFC indicating whether or not the project is in compliance with the requirements of 29 CFR § 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR § 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at <https://www.dol.gov/agencies/whd/government-contracts/construction/forms> or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all Subcontractors. Contractors and Subcontractors shall

maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Recipient, for transmission to EFC, EPA if requested by EPA, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a Subcontractor to provide addresses and social security numbers to the prime Contractor for its own records, without weekly submission to the Recipient (or the applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or Subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

1. That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i), and that such information is correct and complete;
2. That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
3. That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The Contractor or Subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Recipient, EFC, EPA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the required records or to make them available, the Recipient, EFC, or EPA may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR § 5.12.

4. Apprentices and trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job

site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (ii) Trainees. Except as provided in 29 CFR § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

- 5. Compliance with Copeland Act Requirements. The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.
- 6. Subcontracts. The Contractor or Subcontractor shall insert in any Subcontracts the clauses contained in 29 CFR § 5.5(a)(1) through (10) and such other clauses as the Recipient may by appropriate instructions require, and also a clause requiring the Subcontractors to include these clauses in any lower tier Subcontracts. The prime Contractor shall be responsible for the compliance by any Subcontractor or lower tier subcontractor with all the Contract clauses in 29 CFR § 5.5.
- 7. Contract Termination: Debarment. A breach of the contract clauses in 29 CFR § 5.5 may be grounds for termination of the Contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR § 5.12.
- 8. Compliance with Davis–Bacon and Related Act requirements. All rulings and interpretations of the Davis–Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by

reference in this Contract.

9. Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and the Recipient, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

(i) By entering into this Contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government Contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001.

For Contracts in Excess of \$100,000:

1. Overtime requirements. No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any Subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$25 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

3. Withholding for unpaid wages and liquidated damages. The Recipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or Subcontractor under any such Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

4. Subcontracts. The Contractor or Subcontractor shall insert in any Subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the Subcontractors to include these clauses in any lower tier Subcontracts. The prime Contractor shall be responsible for compliance by any Subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

5. In any Contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR § 5.1, the Contractor or Subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the Contract for all laborers and mechanics, including guards and watchmen,

working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the records to be maintained under this paragraph shall be made available by the Contractor or Subcontractor for inspection, copying, or transcription by authorized representatives of the Recipient and the Department of Labor, and the Contractor or Subcontractor will permit such representatives to interview employees during working hours on the job.

SECTION 6 REQUIREMENTS REGARDING SUSPENSION AND DEBARMENT

The requirements of this section apply to all Contracts and Subcontracts.

Contractor and any Subcontractors shall comply with, Subpart C of 2 CFR Part 180 as implemented and supplemented by 2 CFR Part 1532. The Contractor is not a debarred or suspended party under 2 CFR Part 180 or 2 CFR Part 1532, or 29 CFR § 5.12. Neither the Contractor nor any of its Subcontractors have contracted with, or will contract with, any debarred or suspended party under the foregoing regulations.

The Contractor and any Subcontractors have not been debarred from or deemed ineligible for Government Contracts or federally assisted Construction Contracts pursuant to Executive Order 12549.

The Contractor and any Subcontractors have not been deemed ineligible to submit a bid on or be awarded a public contract or subcontract pursuant to Article 8 of the State Labor Law, specifically Labor Law § 220-b. In addition, neither the Contractor nor any Subcontractors have contracted with, or will contract with, any party that has been deemed ineligible to submit a bid on or be awarded a public contract or subcontract under Labor Law § 220-b.

In addition, the Contractor and any Subcontractors have not been deemed ineligible to submit a bid and have not contracted with and will not contract with any party that has been deemed ineligible to submit a bid under Executive Law § 316.

SECTION 7 RESTRICTIONS ON LOBBYING

The requirements of this section apply to all Contracts and Subcontracts greater than \$100,000. Disregard this section if it does not apply to this Contract or Subcontract.

The Contractor and any Subcontractor bidding or proposing a Contract or Subcontract in excess of \$100,000 shall submit with their bid or proposal documents an executed Certification Regarding Lobbying pursuant to 40 CFR Part 34 ("Lobbying Certification") in the form attached hereto as [Attachment 3](#), consistent with the prescribed form provided in Appendix A to 40 CFR Part 34.

SECTION 8 CONSTRUCTION SIGNS

The requirements of this section apply to all EFC projects. Additional signage is required for projects receiving financing from the federal Bipartisan Infrastructure Law (BIL).

If Contractor is expected to provide an EFC Construction Sign, a specification will be included in the enclosed contract documents.

ATTACHMENTS (Required Forms)

Attachment 1 – EFC MWBE Utilization Plan



Environmental Facilities Corporation

NYS Environmental Facilities Corporation Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

Instructions for Contractors & Service Providers:

Contractors and Service Providers must complete Sections 2 and 3. **Submit the completed, signed (electronic signature box checked and dated) form to the Recipient's Minority Business Officer (MBO) no later than the date of contract execution.** Incomplete forms will be found deficient. If more than 10 subcontractors are used, additional pages for Section 3 can be found on EFC's website.

If the prime contract is being performed by the parties to a Joint Venture, Teaming Agreement, or Mentor-Protégé Agreement that includes a certified MWBE, please contact EFC for assistance.

MWBE firms must be certified by the NYS Empire State Development Corporation (ESD) in order to be counted towards satisfaction of MWBE participation goals. The utilization of certified MWBEs for non-commercially useful functions may not be counted towards utilization of certified MWBEs in the Utilization Plan. Please note whether a firm is serving as a broker or supplier on the contract. A broker is denoted by NAICS code 425120 and is designated as a broker in [ESD's MWBE Directory](#). A supplier is denoted by a NAICS code beginning with 423 or 424, or a NIGP code that does not begin with the number 9 and is designated as a supplier in ESD's MWBE Directory. If a firm is serving as a broker, please additionally provide the percentage of the broker's commission on the contract.

See the [Mandatory Terms and Conditions](#) or consult your designated MBO for further guidance.

Instructions for Minority Business Officers (MBO):

The MBO must complete Section 1. Email the completed, signed (electronic signature box checked and dated) form to your EFC Program Compliance Specialist.

The subject heading of the email to the EFC Program Compliance Specialist should follow the format "UP, Project Number, Contractor." EFC will review the Utilization Plan and email the MBO an acceptance or denial.

**NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan**

SECTION 1: MUNICIPAL INFORMATION			
Recipient/Municipality:		County:	
Project No.:	GIGP No.:	Contract ID:	Registration No. (NYC only):
Minority Business Officer:		Email:	Phone #:
Address of MBO:			
Electronic Signature of MBO: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.			Date:

SECTION 2: PRIME CONTRACTOR / SERVICE PROVIDER INFORMATION			
Firm Name:		Contract Type: ☐ Construction ☐ Other Services	
Prime Firm is Certified as: ☐ MBE ☐ WBE ☐ N/A ☐ Other: If certified, please include Prime information in Section 3. If dual certified, you must select either MBE <u>or</u> WBE.			
Address:		Phone #:	Fed. Employer ID #:
Description of Work:		Email:	
Award Date:	Start Date:	Completion Date:	MWBE GOAL Total
Total Contract Amount: \$ TBD MWBE Eligible Contract Amount: \$ TBD (MWBE Goals are applied to this amount and includes all change orders, amendments, & specialty waivers)			Total: 20 % \$
			PROPOSED MWBE Participation Total: TBD % \$

**NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan**

SECTION 3: MWBE SUBCONTRACTOR INFORMATION			
This Submittal is:	☐ The First/Original Utilization Plan ☐ Revised Utilization Plan #:		
NYS Certified M/WBE Subcontractor Info		Contract Amount:	For EFC Use:
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$TBD			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$TBD			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$TBD			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$			

**NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan**

SECTION 3: M/WBE SUBCONTRACTOR INFORMATION continued			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$			
SIGNATURE			
Electronic Signature of Contractor: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and that all MWBE subcontractors will perform a commercially useful function. Name (Please Type):			Date:

Attachment 2 – AIS Contractor’s Certification



Environmental Facilities Corporation

AIS CONTRACTOR CERTIFICATION
FOR CONSTRUCTION CONTRACTS FUNDED THROUGH
THE NYS CLEAN WATER STATE REVOLVING FUND, OVERFLOW AND STORMWATER GRANTS
OR
THE NYS DRINKING WATER STATE REVOLVING FUND VIA THE
NYS ENVIRONMENTAL FACILITIES CORPORATION

Project Title:

Contractor's Name: _____

Contract ID: _____

SRF Project No.: _____

SRF Recipient Name: _____

I certify that the iron and steel products permanently incorporated into the public water system or wastewater treatment works project under this construction contract will be and/or have been produced in the United States, in accordance with the requirements of the United States Environmental Protection Agency and 33 U.S.C. § 1388, 42 U.S.C. § 300j-12(a)(4) and any regulations promulgated thereunder. I will develop and maintain necessary documentation to demonstrate that the iron and steel products permanently incorporated into the project were produced in the United States, and make such documentation available to The New York State Environmental Facilities Corporation or their authorized representatives, upon request.

Signature:

Name (print):

Title:

Date:

Attachment 3 – Lobbying Certification



Environmental Facilities Corporation

**New York State Environmental Facilities Corporation
CERTIFICATION REGARDING LOBBYING
FOR
CONTRACTS, GRANTS, LOANS, AND
COOPERATIVE AGREEMENTS
40 CFR Part 34**

SRF Project No.: _____

Recipient: _____

Project Description: _____

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Signature: _____

Name: _____

Title: _____

Company Name: _____

Date: _____

Contract ID: _____

EXHIBIT A

**CITY OF POUGHKEEPSIE
POUGHKEEPSIE, NEW YORK**



RFB # COP-04-21-01

WPCP Secondary Clarifiers

ADDENDUM NO. 1

May 17, 2021

This addendum contains the following:

- 1) EJCDC Standard General Conditions was inadvertently omitted from the original bid package.**

Please acknowledge receipt of this addendum by including this receipt with your bid package!

Receipt of Addendum# 1

Signed: _____

Company Name: _____

Dated: _____

GENERAL STANDARD CONDITIONS

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 Edition).

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(703) 684-2882

www.nspe.org

American Council of Engineering Companies

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(202) 347-7474

www.acec.org

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer

has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or

computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

- A. *Reporting Discrepancies:*
 - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
- 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part

by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; or
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

- c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after

becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
 - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
 - 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 - 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 2. claims for damages insured by reasonably available personal injury liability coverage.
 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
 - 1. include at least the specific coverages provided in this Article.
 - 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 - 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 - 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 - 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
 - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the

policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 Substitutes

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and

- 2) available engineering, sales, maintenance, repair, and replacement services.
- d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
 - C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
 - D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
 - E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
 - F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
 - G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or

exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
- 2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
- 3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*

- a. Contractor shall submit the number of Samples required in the Specifications.
- b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal;
 6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.

- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop

Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during

or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 Cost of the Work

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
 1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable

thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes

other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

- B. *Cash Allowances*: Contractor agrees that:
 - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 Access to Work

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 Tests, Inspections, and Approvals

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

- e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner:*

- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
- 2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount

remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

- A. *Application for Payment:*
 - 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for

expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

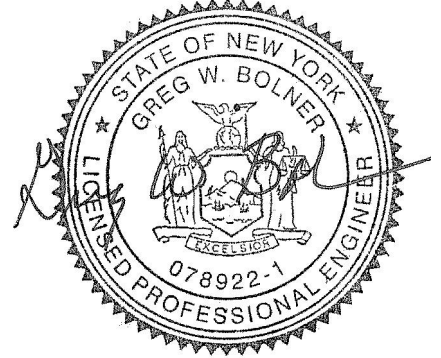
- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

**CITY OF POUGHKEEPSIE
POUGHKEEPSIE, NEW YORK**



RFB # COP-04-21-01

WPCP Secondary Clarifiers



ADDENDUM NO. 2

May 18, 2021

This addendum contains the following:

- 1) Clarifications
- 2) Revised Drawing
- 3) Sample Contract

Please acknowledge receipt of this addendum by including this receipt with your bid package!

Receipt of Addendum# 2

Signed: _____

Company Name: _____

Dated: _____



ADDENDUM NO. 2

PROJECT: CITY OF POUGHKEEPSIE WPCP SECONDARY CLARIFIER
IMPROVEMENTS

CPL PROJECT NO. 12422.06

CITY PROJECT NO. RFB-COP-04-21-01

DATE: MAY 18, 2021

Include this Addendum as part of the Contract Documents. It supplements portions of the original specifications and drawings, the extent of which shall remain, except as revised herein:

GENERAL

Attached is the secondary clarifier Installation, Operation and Maintenance Instructions dated at or around 1975, the Operation & Maintenance Manual - Clarifier Drive Model "030-BF" Upgrade dated at 02/08/2000 and the City of Poughkeepsie – Wastewater Treatment Plant Secondary Clarifier Weir Modifications dated April 2008.

These drawings are included for the Contractors convenience. The Owner and Engineer assume no responsibility for the accuracy of this information or for interpretations or conclusions drawn from this data. The Contractor is expected to examine the sites for themselves.

TO THE PROJECT MANUAL:

1. Section 464331 - Circular Secondary Clarifier Equipment, Paragraph 2.1.C. C. 2. Process Requirements for each Secondary Clarifier:

Delete paragraph in its entirety and Insert the following:

2. Process Requirements for each Secondary Clarifier:
 - a. Design Average Daily Flow: 3.2 MGD.
 - b. Design Peak Flow: 4.2 MGD.
 - c. Additional RAS flow range from 1.0 MGD to 1.1 MGD at Design Average Daily Flow.
 - d. Drive continuous torque: 30,000 ft-lb at 0.043 rpm.
 - e. Drive momentary peak torque: 123,000 ft-lb.
 - f. Mechanism rotation: Clockwise.
 - g. Rake arm tip speed, constant: 8-12 ft/min.



2. Section 464331 - Circular Secondary Clarifier Equipment, Paragraph 2.5 C.:
Delete the paragraph in its entirety and replace with:
 - C. Provide handrails with toe plate along both sides of the walkway and around the center drive platform. The handrailing shall be 1-1/2 inch diameter aluminum pipe, 3-rail design, with fittings factory assembled to posts. Rails are to be shipped to the job site in stock lengths for cutting and fitting. The toe plate shall be a 4 inch x 1/4 inch plate or a 4 inch tall aluminum extruded channel. Truss supports meeting OSHA requirements may be used in lieu of handrails.
3. Section 464331 - Circular Secondary Clarifier Equipment, Paragraph 2.17 C. Anchors:
Delete the paragraph in its entirety.

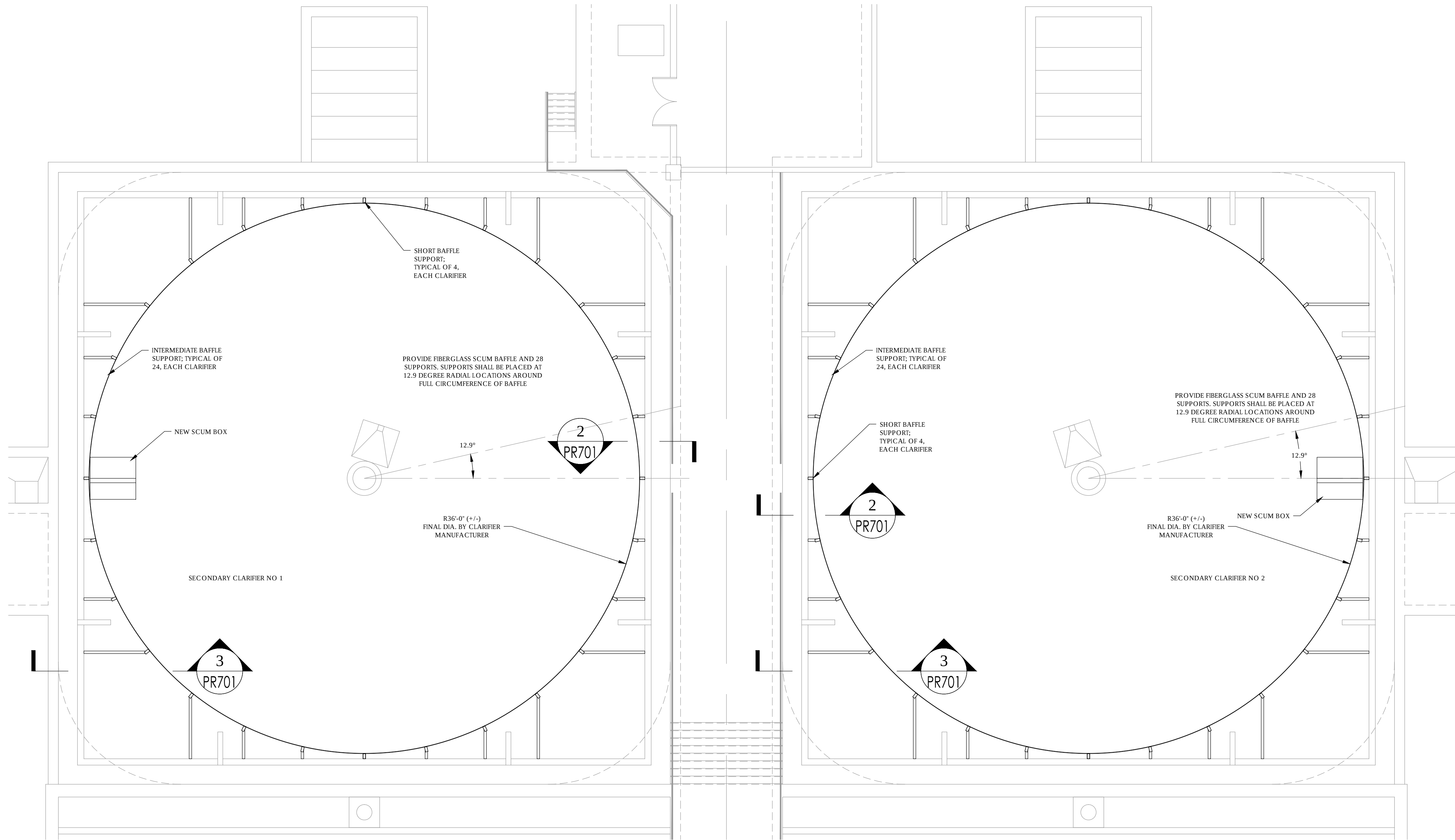
TO THE PROJECT DRAWINGS:

1. SHEET WPCP PR701, Replace with attached WPCP PR701 Rev.2:

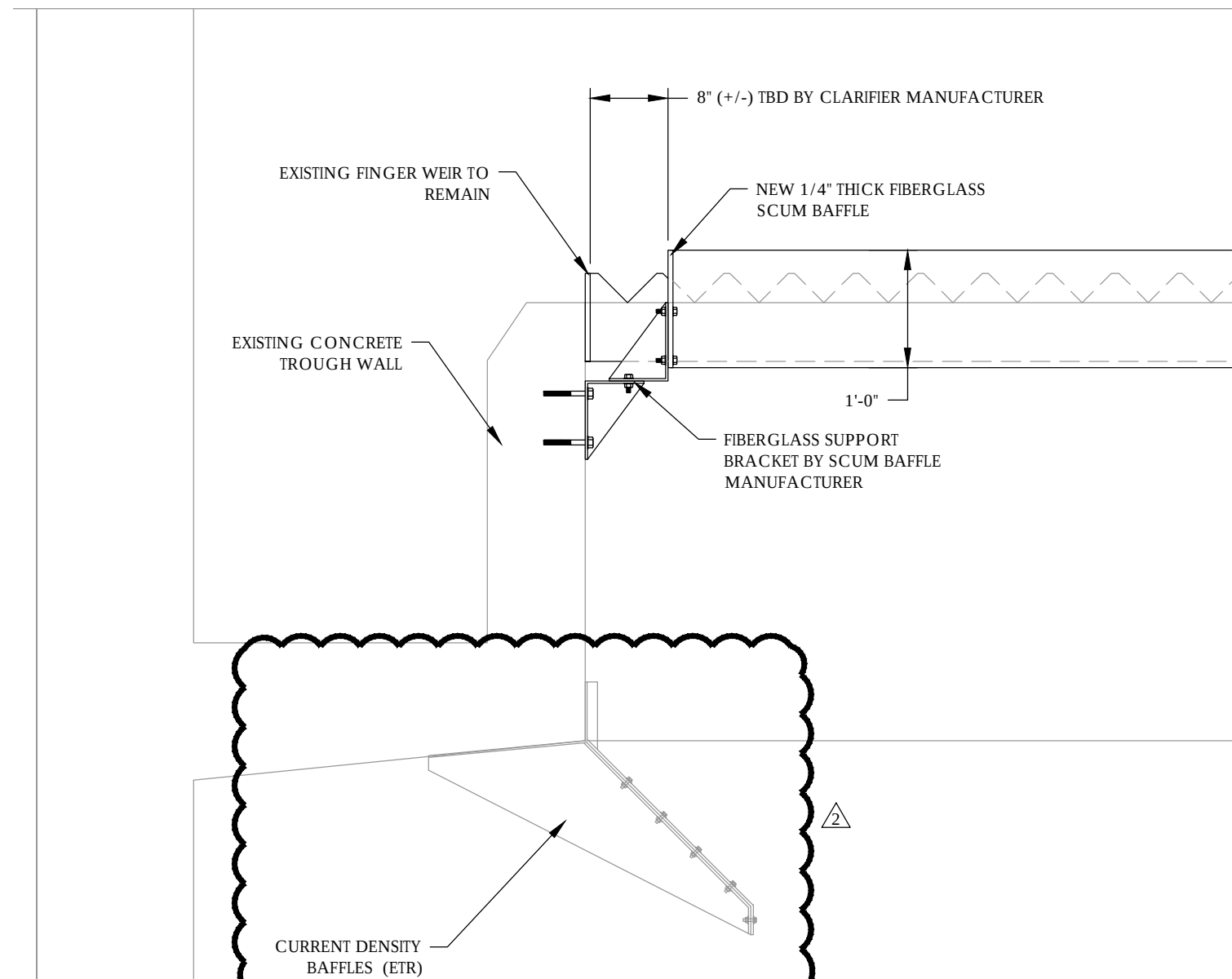
Comment: The revised drawing indicates existing Current Density Baffles to remain. The drawing also indicates existing guide tracks.



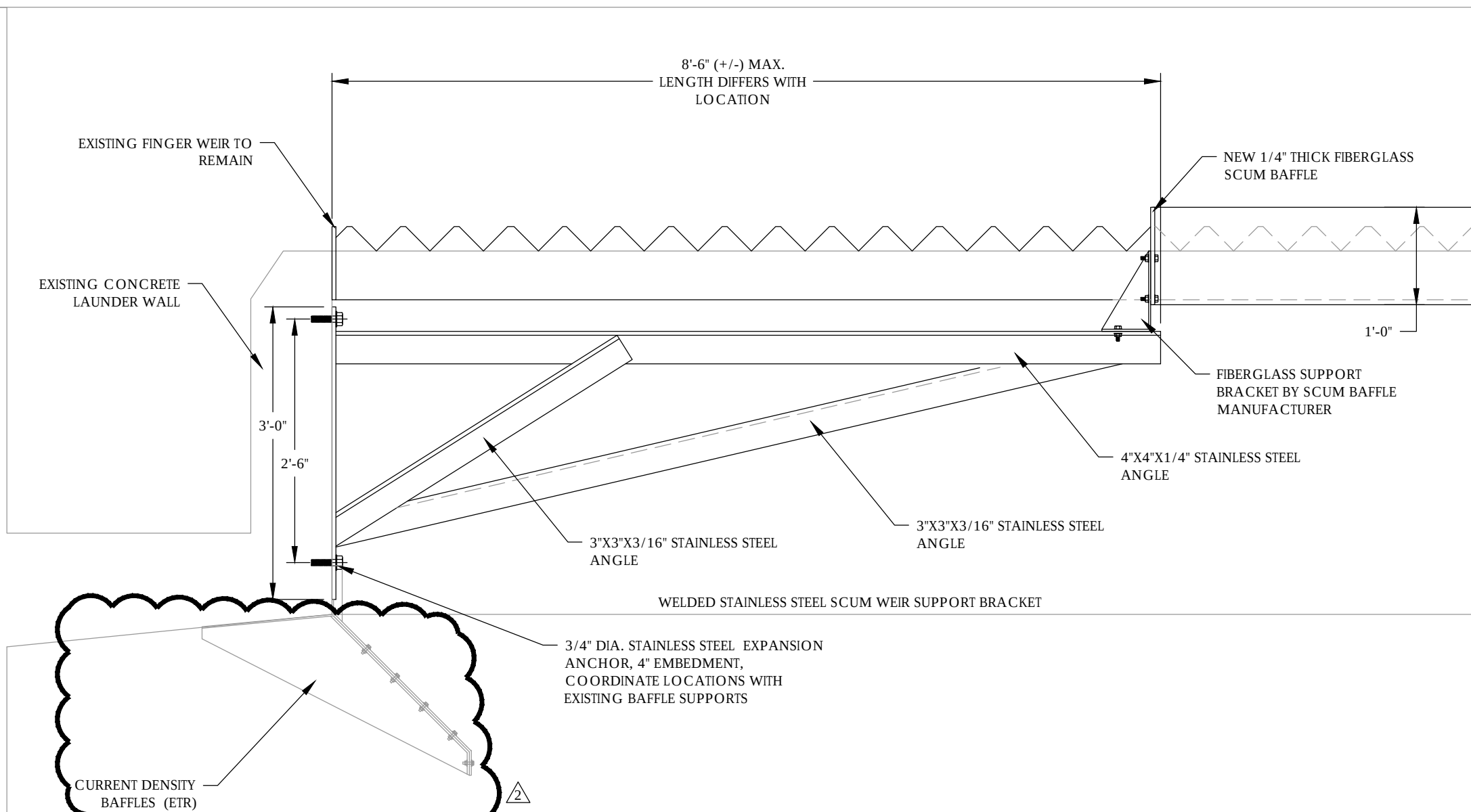
WPCP PR701 Rev.2



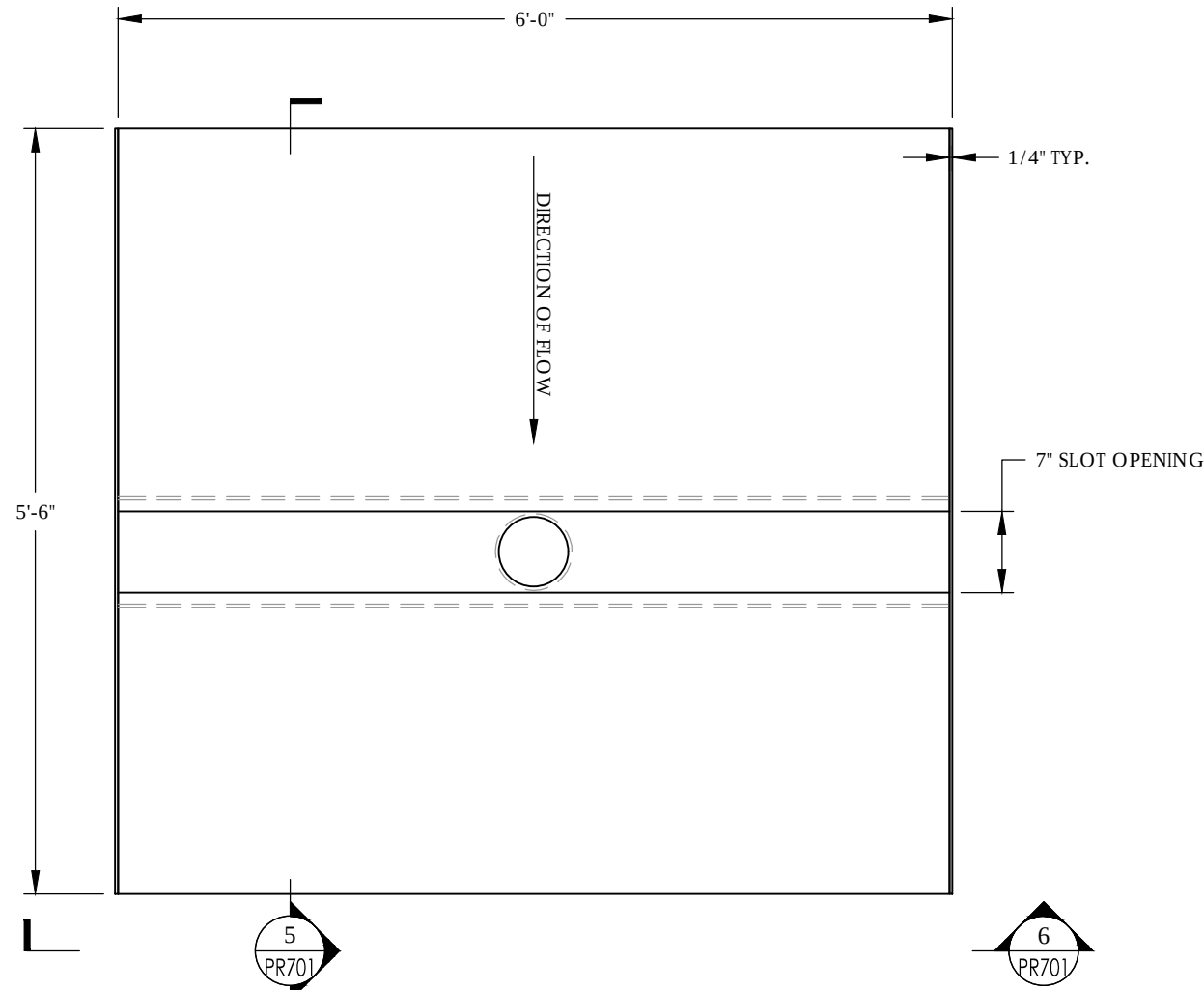
1 SECONDARY CLARIFIER SCUM BAFLE SUPPORT PLAN
SCALE: 1/8" = 1'-0"



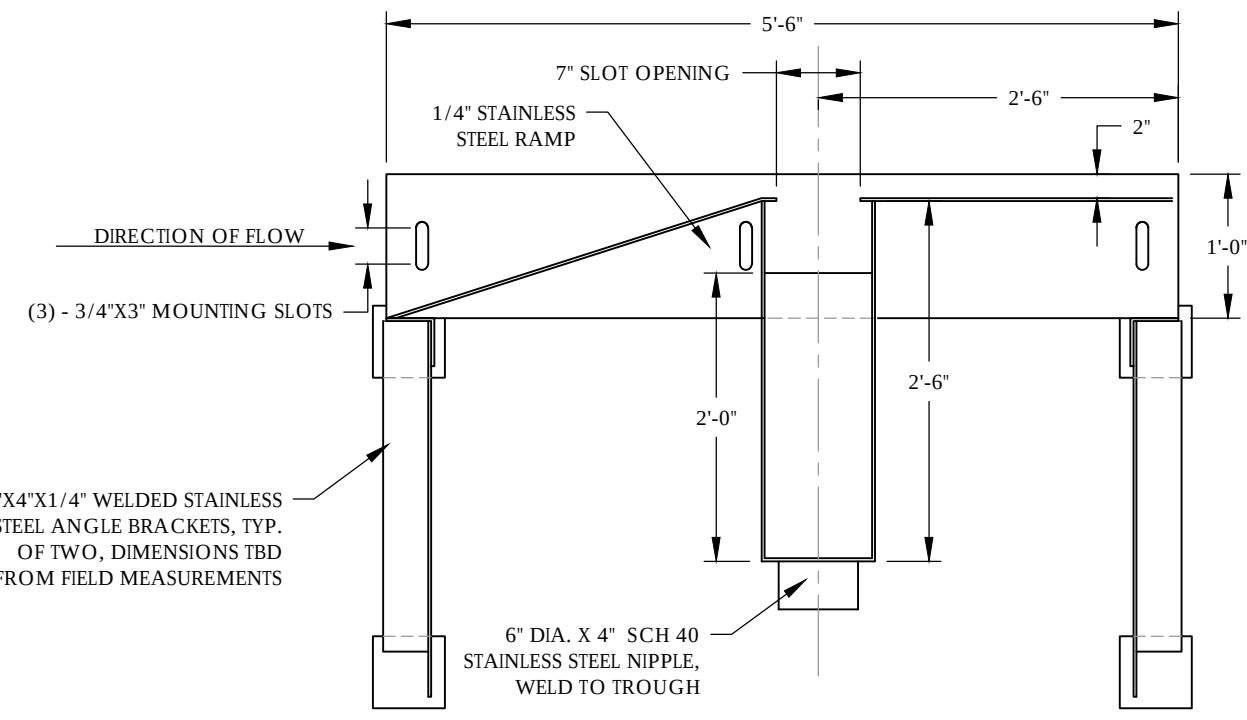
2 SCUM BAFLE SHORT SUPPORT
SCALE: 3/4" = 1'-0"



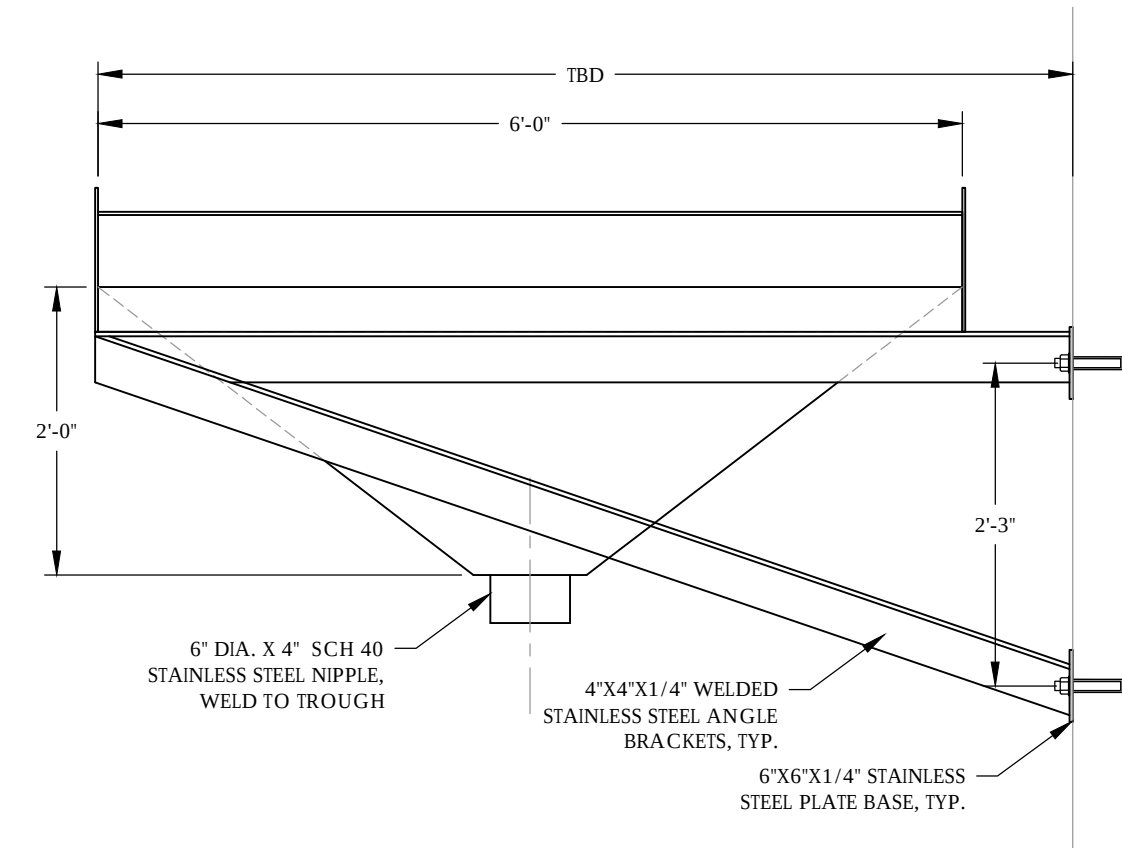
3 SCUM BAFLE INTERMEDITE SUPPORT
SCALE: 3/4" = 1'-0"



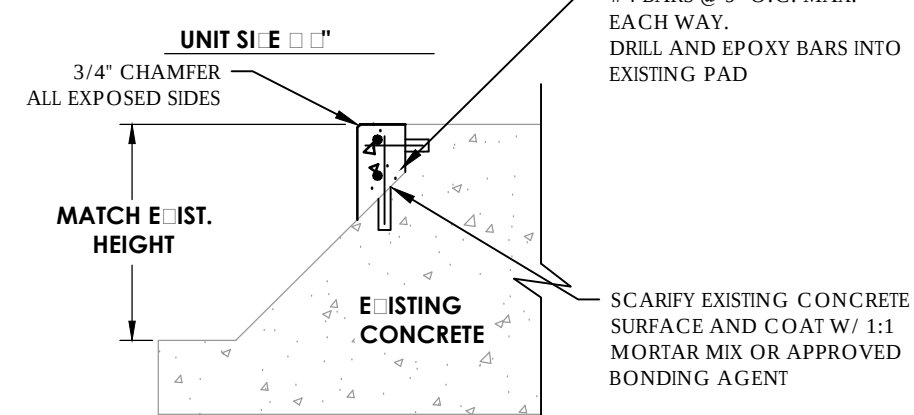
4 SCUM BOX PLAN
SCALE: 3/4" = 1'-0"



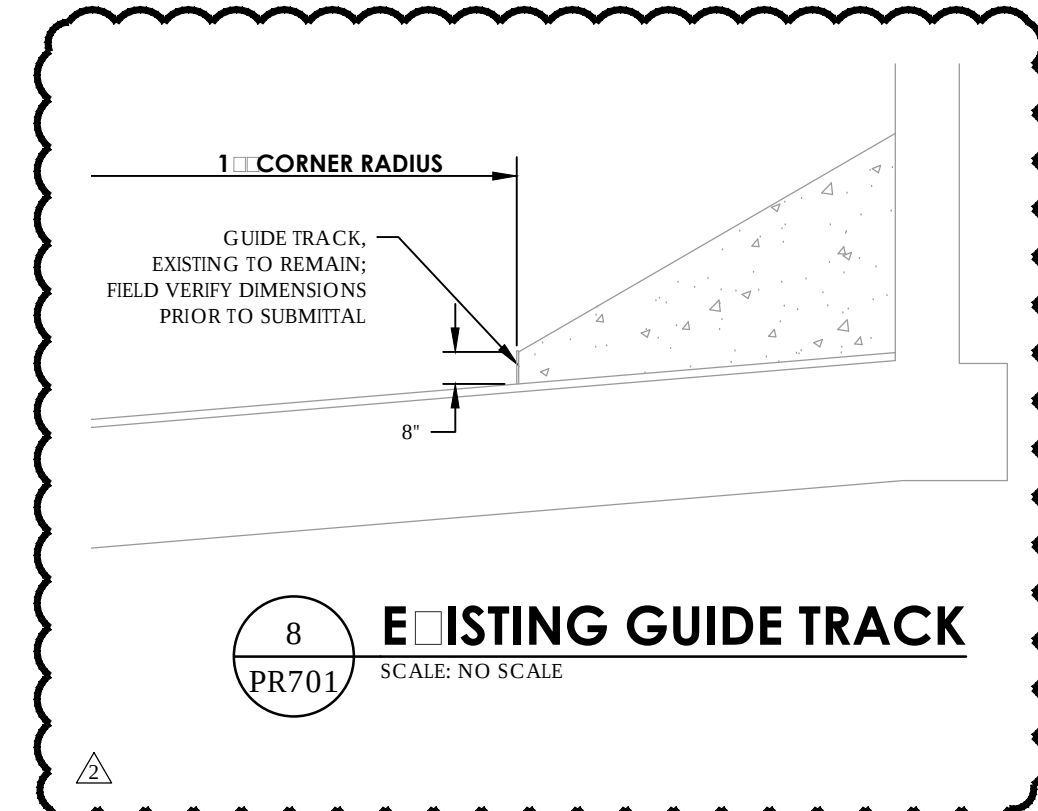
5 SCUM BOX SECTION
SCALE: 3/4" = 1'-0"



6 SCUM BOX ELEVATION
SCALE: 3/4" = 1'-0"



7 CONCRETE FILL DETAIL
SCALE: NO SCALE

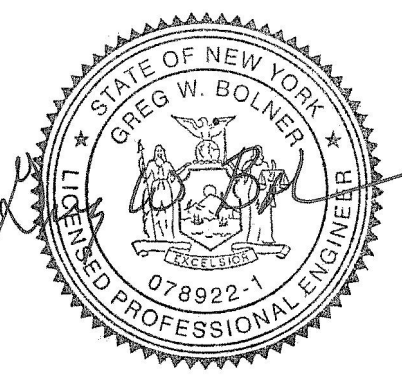


8 EXISTING GUIDE TRACK
SCALE: NO SCALE

Clark Patterson Lee
ARCHITECTURE | ENGINEERING | PLANNING

50 FRONT STREET, SUITE 202
NEWBURGH, NEW YORK 12550
TEL (845) 567-6700
FAX (845) 567-9614
www.clarkpatterson.com

REVISIONS	NO.	DATE	BY	DESCRIPTION
	1	02/09/2021	RT	ISSUED FOR BID
	2	05/20/2021	CPL	ADDENDUM NO. 1



CITY OF POUGHKEEPSIE
ENGINEERING DEPARTMENT
WATER POLLUTION CONTROL PLANT
SECONDARY CLARIFIERS IMPROVEMENTS
CITY OF POUGHKEEPSIE, NEW YORK

DATE	DRAWN	CHECKED
11/1/2020	RT	GB
SCALE	AS SHOWN	
SHEET TITLE	SECONDARY CLARIFIER IMPROVEMENTS SCUM BAFFLE PLANS AND DETAILS	

PROJECT NUMBER
12422.06
WPCP PR701
DRAWING NUMBER



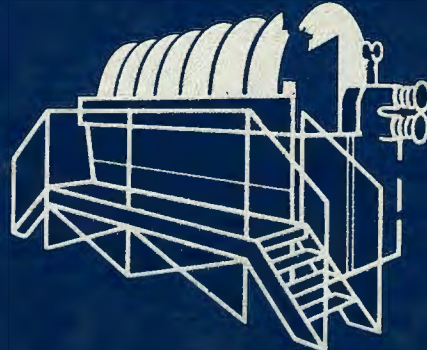
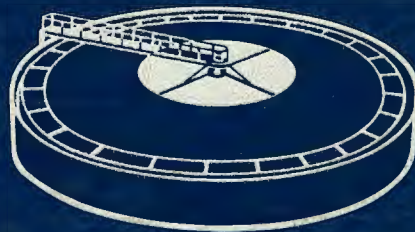
Secondary Clarifier Installation, Operation and Maintenance Instructions - dated at or around 1975

ENVIROTECH



EIMCO BSP

INSTALLATION OPERATION AND MAINTENANCE INSTRUCTION MANUAL



EIMCO BSP

669 West Second South, Salt Lake City, Utah 84110

TO Doug S. + FILE
SAMD

3/11/89

RE EIMCO CLARIFIERS - 22214-02-A+B

EIMCO CLARATHICKENERS-22214-01 A+B

Eimco Div - 801-526-2000 Gary Bean

(669 West 2nd South
SALT LAKE CITY Utah. 84101)

Clarifier Div Municipal - 801-526-2353 Steve Workman

Gary handles parts. He says he can supply all parts in 8 to 12 weeks in a worst case situation.

Dist. Burde Assoc - Chris Burde

NJ. 201-664-0400. I have contacted his office and they say 8 to 12 weeks is a good number. In some cases it can be expedited...

I have the manual for both units and a parts list.

It is recommended that we keep one C-30 Basic Drive unit / and one C40. That would cover both Clarifiers + clarathickeners.

Municipal Product Div.

* Nii - Mensah ex 2239 801-526-2239

C-30 - 20,000 } Complete
C-40 - 26,000 }

Air Freight \$2000 48 HRS. Normal truck ship time 1 week to 10 days. Normally a stock item.

U.S. Motors

GWB From #6

Emerson Electric Co
old Gate Lane
Melford Conn. 06460



Office 203-878-9311

Service - Pat Morino
HP-1 Frame - 143T-6
TYPE-TF GWB
DESIGN - B - CODE-20
GEAR RATIO - 855 CODE-M

ID. # 65-09085-573
FO 71362

3/PH INSTALLATION, OPERATION AND MAINTENANCE
MOTOR RPM - 1740 INSTRUCTIONS

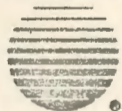
RIGHT ANGLE
SYNCHRO GEAR

(2) EIMCO CLARIFIERS
TYPE C2DC
80' Sq. X 10 S.W.D.
Serial No. 22214-02-A&B

For

Poughkeepsie, New York
Sewage Treatment Plant

ROUSE CONSTRUCTION CO.
P.O. No. 173
Eimco Order No. 22214-02

EIMCO INSTRUCTIONSPage Nos.

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EIMCO PARTS LIST

22214-02 Complete Parts List

EIMCO DRAWINGS

22214 D201 General Assembly
22214 D254 General Erection

INSTRUCTIONS AND DRAWINGS
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1BC3

(4/75)

22214 D253	Corner Rake Erection
22214 C252	Skimmer Erection
22214 C205	Center Col. Arr.
22214 D232	Motor Drive Package
111737	C30 Drive Ass'y
110685	Drive Control Ass'y
42700	Skimmer Ass'y
22214 B2	Drive Motor Wiring
22214 B3	Drive Control Wiring

ACCESSORY EQUIPMENT

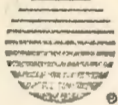
Gear Motor: U.S.
Bulletin 409-1
Data Sheets

It is important to thoroughly read and study these instructions before erecting or operating the equipment, to ensure full warranty protection.

The instructions cover equipment of standard design and most common deviations. Special equipment modifications or variations may not be covered; however, these items will be included in the certified assembly drawings, copies of which are contained in the manual. Further, although the procedures are recommended by Eimco, they may be modified or substituted in the event of minor discrepancies with the drawings or in keeping with the experience of the individual doing the erecting. For additional information, refer to page 1AA1 covering Field Charges, Modifications and Shortages.

As a part of the Eimco equipment, certain accessory items will be furnished, but not manufactured by Eimco. This equipment must be stored, installed, maintained and operated as specified in the manufacturer's instructions to obtain full warranty coverage.

The illustrations and instructions in this manual are based on information available at the time of issue. The right is reserved to make subsequent changes without obligation to replace existing copies.



SPECIAL INSTRUCTIONS
TO EQUIPMENT ERECTORS
FIELD CHARGES, MODIFICATIONS,
STORAGE AND SHORTAGES

Eimco BSP does not anticipate problems with the erection of this equipment. However, due to the nature of fabricated steel equipment, a certain amount of fit-up and adapting work must be done by the erector which is considered to be a normal part of erection, as well as the use of such tools as come-alongs, welding and cutting torches, and drift pins. But in case of problems, the following will apply:

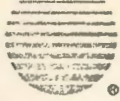
- A. The AISC "Code of Standard Practice" Section 5-180 specifically states that cutting, reaming and use of drift pins are a part of standard erection practice:

"Corrections of minor misfits by the moderate use of drift pins, and a moderate amount of reaming, chipping or cutting are considered a part of erection. Any errors which prevent the proper assembly of parts by these measures, or which require correction or adjustment, must be immediately reported to the fabricator and erector to enable whoever is responsible either to correct the error or to approve the most efficient and economic method of correction to be used by others."

- B. Should a problem develop because of fabrication or engineering errors, Eimco will accept backcharges only if they are authorized in advance and in writing by Eimco BSP. Before work is started the erector must obtain an Eimco Field Work Order which must include a cost limitation. Payment may be refused for corrective work that is done without the above authorization.

Authorized charges will be paid only on the basis of standard direct field labor hours, material, and variable overhead. Other charges will not be allowed.

- C. Drawings and erection or installation instructions must be followed. The drawings will govern in case of minor discrepancies. In the event of major discrepancies, notify Eimco BSP immediately, referring to the addresses at the front of this manual.

RECEIVING, INSPECTION

Although all possible precautions are taken to protect the equipment against damage or losses during shipment, before accepting the shipment check for shortages and for evidence of physical damage. Notify the carrier, if necessary. Keep a record of all claims and correspondence. Photographs are recommended.

PACKING BOXES AND COVERS

Do not remove protective covers unless there are indications of damage. Boxes opened for inspection should be carefully repacked to ensure protection of the contents or else the parts should be packaged and stored in a safe place. Examine all packing boxes, wrappings and covers for items attached to them, especially if they are to be discarded. Refer to the Storage Instructions.

SHIPPING BRACES AND BARS

All braces, bars, etc., that are required for shipment, but are not a part of the fabrication, are painted purple. These should not be removed until prior to installation, or during the erection as specifically noted.

STORAGE

When the equipment is not to be installed immediately, refer to the storage instructions. These are important to ensure warranty protection.

ERECTION BOLTS

Make sure the bolt lists are followed to ensure the correct lengths and sizes and to avoid shortages later in assembly.

IMPORTANT NOTICE REGARDING MOTORS AND MOTOR REDUCERS
FOR THE EQUIPMENT ON THIS ORDER

In order not to delay shipment of the equipment on this order, due to the long lead time on motors and motor reducers, the equipment may be shipped without the motors installed.

If installation of the motor drives is required, it is the responsibility of those who are charged with installation and/or erection of the equipment. Instructions and drawings are provided in this manual to guide the installation work. Minor fit-up may be required.

Eimco Servicemen will approve the installation at the time of equipment check-out.

SequencePage Nos.

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4. Install the sludge discharge pipe and influent
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5. Place the cage and sludge collection drum around
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17. Grout the bottom of the tank (Warning: Do not use
the corner rakes for grouting) ----- 31 - 36



INSTALLATION SEQUENCE OUTLINE

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- | | |
|--|----|
| 18. Assemble and install the corner raking mechanisms | 37 |
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| 20. Install the sludge suction piping ----- | 39 |
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CHECK THE TANK
AND MAKE BENCH MARKS4-CL4
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Reference Drawings: Elevation Layout, General Arrangement
and Guide Track Erection

TANK

The tank must conform to specifications in order to accommodate the mechanism. If the tank fails to meet these specifications, requiring any modifications of the equipment, Eimco will not accept charges. Check the tank as follows:

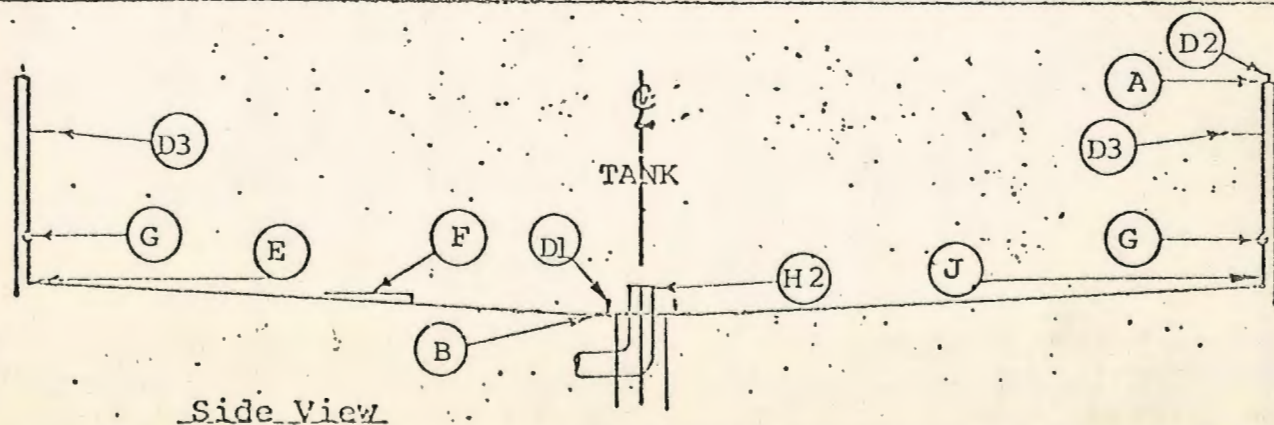
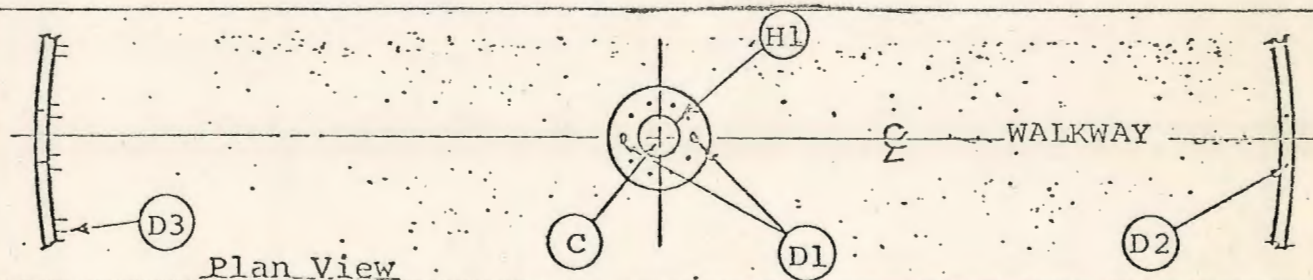
CHECK the elevation at the walkway mounting surfaces at (A) only.

CHECK the elevation at the center column base at (B).

CHECK for true center at (C) in order to check the anchor bolts at the (D) locations and the wall circumference at (E).

CHECK that 2 anchor bolts for the center column at (D1) are on the center line of the walkway and that the anchor bolts are concentric with true center at specified radius.

CHECK all anchor bolts at (D) locations for proper size, projection, elevation and orientation. Wall bolts at (D3), if furnished, should be on a radial line with true center.



CHECK THE TANK
AND MAKE BENCH MARKS

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CHECK the tank bottom for specified diameter all around at (E) and for specified slope (F) at approximate 90° locations around the tank.

CHECK the influent opening (H1) for proper diameter and the incoming sludge discharge pipe (H2), not by Eimco, for correct size and projection.

CHECK the corner raking mechanism guide track for specified elevation (J) and proper radius in the corners.



Reference Drawings: General Arrangement, Erection of Skimming Mechanism, General Erection and/or Scum Box Assembly

Start the installation of the weirs, scum baffle and scum box, completing the installations during the erection of the mechanism.

WEIRS (Not by Eimco)

Apply a mastic sealer between the weirs and mounting surface, during or after installation. This is to prevent leakage and improper flow. Weirs must be level. Check them with a surveyor's level.

BAFFLES (Not by Eimco)

Do not secure the baffles until adjustments are completed and the scum box has been installed.

Make sure the inside face of the baffle is free of projections, such as welds, offset, etc. Revolve the scum skimmer to where it is over the scum box. Measure the horizontal distance from the end of the support pipe to the scum baffle. Then revolve the skimmer and adjust the baffle assemblies for this same horizontal measurement. Adjust the baffles as necessary and secure the fasteners.

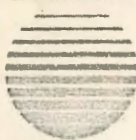
NOTE: Since the baffle sections connecting to the scum box (by Eimco) will vary in length, Eimco cannot be responsible for the fitting of these pieces.

SCUM BOX (By Eimco)

The baffles should be installed ahead of the scum box, but the adjustments should be made at the same time.

Mount the scum box supports to the anchor bolts, then mount the scum box to the supports. Attach the box loosely to the baffles to allow for adjustment.

Adjust the scum box for elevation and level referring to the drawings. When the skimming device is installed, adjust the box



for concentricity with the device and recheck elevation and level. Adjust the scum box as follows:

Radial Adjustment:	Slots in scum box
Vertical Adjustment:	Slots in supports and baffles
Level Adjustment:	Shim between scum box supports and wall and baffle adjustments

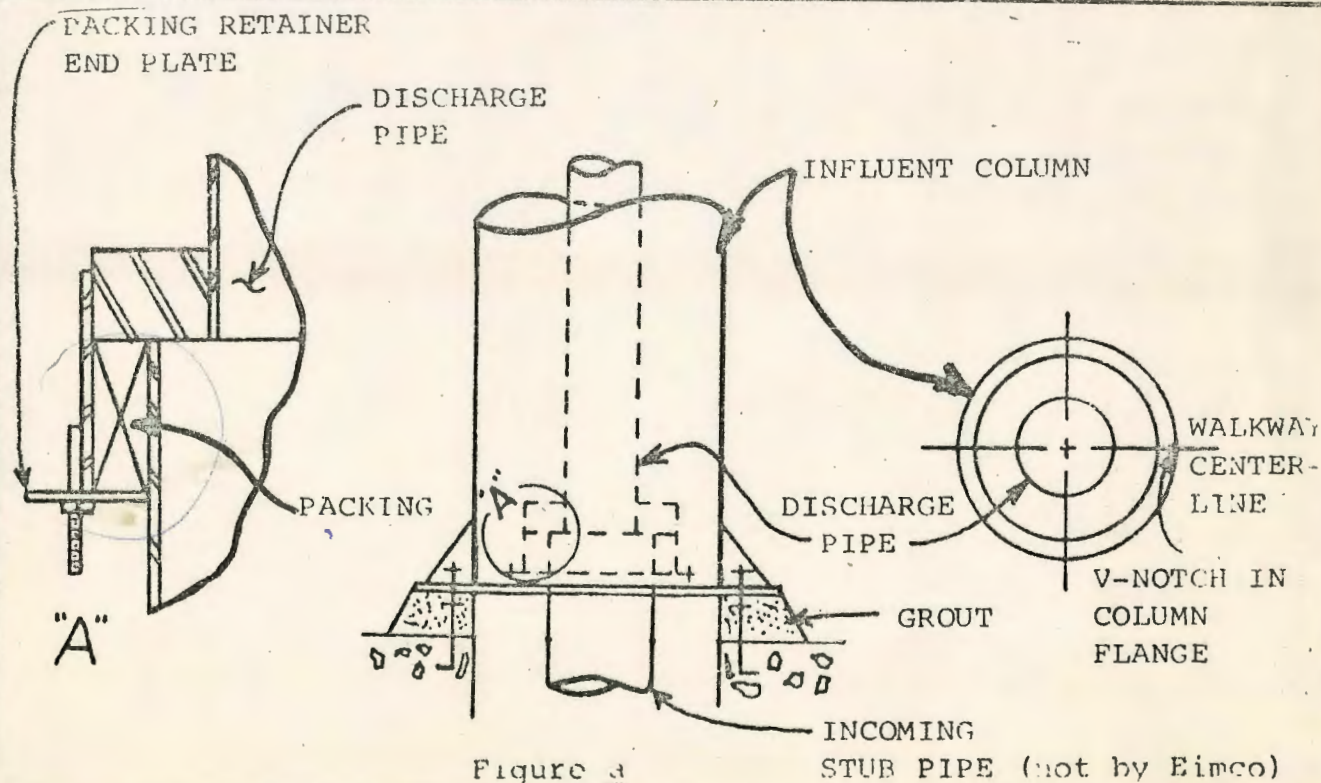
Secure all fasteners. Then connect scum box nozzle, with multiflex connectors, clamps, or welding, to the discharge piping, as specified.



Reference Drawings: General Erection and General Arrangement

The influent column serves both as a support for the drive and mechanism and as a central tank inlet. The sludge discharge pipe inside the column is, however, simply a conduit pipe for the sludge. Its flow is separated from the influent by seals at the top and bottom of the pipe.

1. Place the packing retainer end plate (for the pipe sleeve packing) over the stub of the incoming discharge pipe (not by Eimco). Refer to the illustration below, Figure a.
2. Place the sludge discharge pipe (flanged end) over the incoming stub pipe and block it firmly in an upright position.
3. Caulk the space between the stub pipe and the discharge pipe with asbestos wick (or specified similar packing), as shown. Do not use oakum. Tamp the caulking firmly in place. Then mount and tighten the packing retainer end plate against the packing. The discharge pipe should be plumb.
4. Paint or coat the bottom flanged areas of the pipe, as specified, for rust protection.

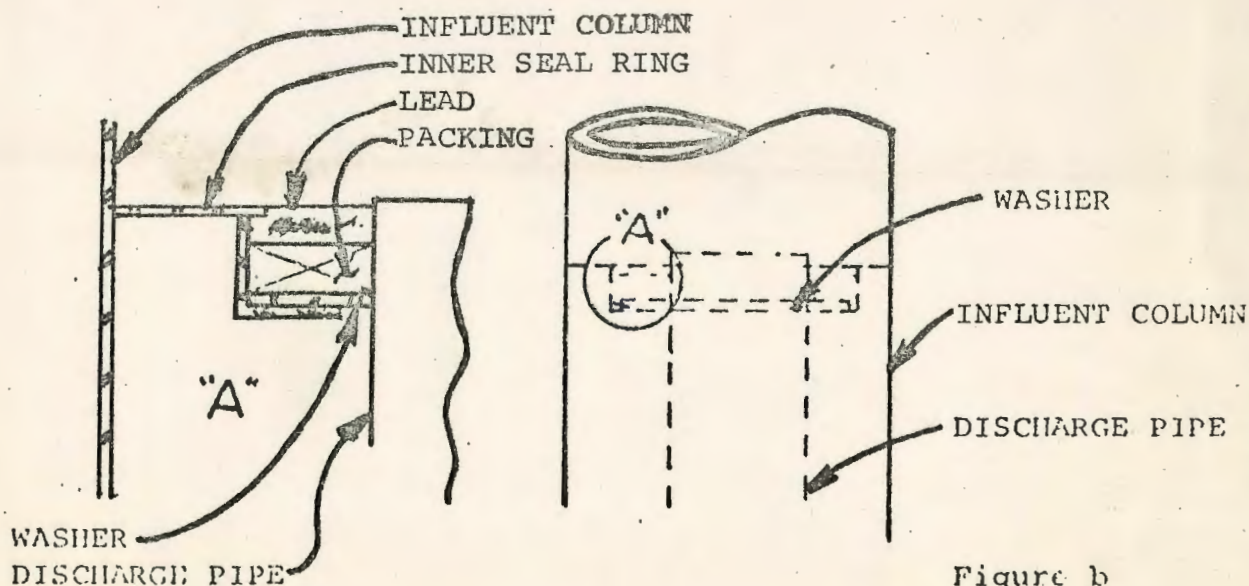




5. The anchor bolts for the influent column have two nuts each. Remove the upper nuts and set the lower "leveling" nuts with their top faces at the elevation specified for grout thickness. All nuts should be level within the same plane.
6. The influent column has a "V" notched in the outer edge of the upper flange. When the column is installed this V-notch must be in line with the walkway centerline. Refer to the preceding illustration.

Remove the blocking from the discharge pipe. Orienting the influent column for the V-notch, place it over the discharge pipe, taking care not to bump the discharge pipe from its plumb position. Watch particularly when the smaller inner opening (inside seal ring) goes over the discharge pipe. See Figure b. Check the notch alignment.

7. Install the upper locking nuts and tighten them and the leveling nuts.

Figure b



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SLUDGE DISCHARGE PIPE AND
INFLUENT COLUMN INSTALLATION

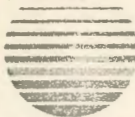
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8. Check the column for plumb, using a surveyor's instrument. Adjust for plumb with the leveling nuts. Slug tighten the upper nuts after each adjustment, using a slug wrench.

NOTE: Do not grout under the influent column. This will be done after final leveling of the drive.

9. Place the seal washer around the sludge pipe to rest in the circular seal pocket (inside seal ring of column).
10. Install the packing (not by Eimco) in the seal pocket. Then fill the seal pocket the rest of the way with molten lead.



Reference Drawings: General Erection

The sludge collection drum fits between and is assembled with the upper and lower sections of the cage. Since the drum is furnished in one piece, it must be in place around the column before the drive is installed.

The cage and drum can be assembled either in place around the column or separately from the column.

Follow one of two methods of assembly:

1. If the cage and drum are to be assembled around the column, start with the bottom cage section and work upwards.
 - a. Assemble the lower cage section around the column, or assemble it and set it over the column.
 - b. Assemble the upper cage section and place it and the sludge drum on the lower cage.
 - c. These sections can either be (1) all connected and mounted as a unit to the drive, or (2) they can be mounted to the drive unit one at a time. (The installation of the cage follows drive unit installation.)
2. If the cage and drum are to be assembled separately from the column, assemble them completely, then place them over the column.

IMPORTANT: Check orientation of the sludge drum control boxes with relation to the sludge piping to be sure the piping will connect directly into the sludge drum.

Use High Strength Bolts and tighten them as specified in the instructions for the Turn-of-Nut Method, using an impact wrench. All connecting surfaces (torqued surfaces) must be clean and unpainted where H.S. Bolts are used.



Reference Drawings: General Arrangement, Motor Drive Assembly and General Erection

The drive unit is shipped fully assembled, including the drive control (overload cutout device). The main drive housing, to which the cage attaches, is on the bottom and the worm drive assembly is on top.

1. HANDLING THE DRIVE UNIT

Lift and install the drive as a complete assembly, using the eye bolts provided. Lifting the drive by any other means may cause damage. A spreader bar is recommended to prevent bending strain on the eye bolts.

2. INSTALL THE DRIVE

CHECK the mounting surface of the drive housing for foreign matter and the column mounting flange for spatter or other foreign matter. Remove as necessary for a clean flat surface.

Place the drive unit on the column, orienting as shown on the Motor Assembly and General Arrangement drawings. Insert but do not tighten the drive mounting bolts.

3. LEVEL THE DRIVE

The drive must be uniformly supported and as near level as possible to prevent uneven loading on the drive housing and bearing. This is essential since uneven loading is a cause of bearing and housing failure. Shimming may be necessary to level the drive and provide uniform support.

A. Check for Level

Do the checking and leveling during an overcast day or during the early morning when the center column is a uniform temperature. A correct reading will not be obtained when the column is in direct sunlight due to one side being warmer than the other, causing uneven heat expansion.



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INSTALL AND LEVEL THE DRIVE UNIT

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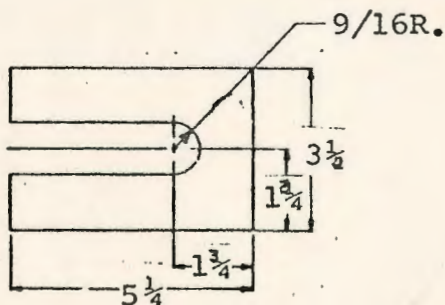
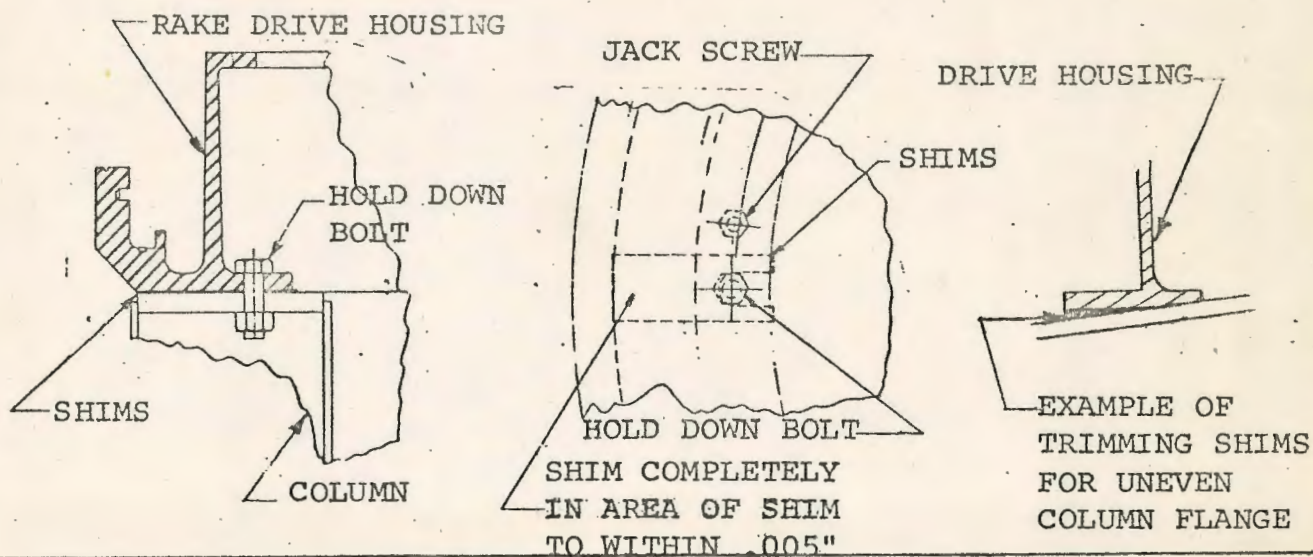
The drive unit should be level within .005 inch per foot distance, in two directions. Check this with a precision machinist's level placed on the surface of the main drive cover. Check in two directions (90°). Remove paint, burrs, etc., for accuracy.

NOTE: A final check for level will be made later following erection of the mechanism.

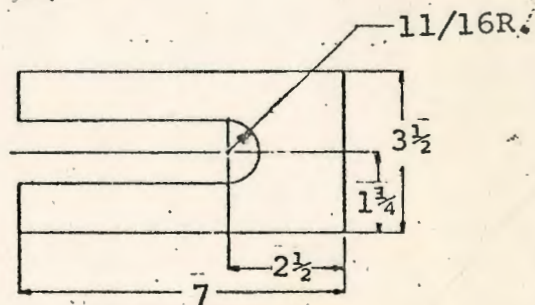
B. Leveling Procedure (Shimming)

Do this before the cage is installed.

- 1) Use the jack screws provided in the base casting to level the drive.



FOR RAKE DRIVES C30
AND C54



FOR RAKE DRIVES C40
AND C60



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INSTALL AND LEVEL THE
DRIVE UNIT

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- 2) Check clearances with a feeler gauge at the bolts. Mark the clearances on the drive base for ready reference.
- 3) Shim only at the bolts, using the "horseshoe" type shims shown in the illustration of suggested shim dimensions. Shim under each bolt to the nearest .005 inch and trim shims as necessary for uneven column flange. (Eimco does not furnish the shims.)
- 4) Loosen the jack screws. Tighten the hold down bolts, turning them equally.
- 5) Recheck the level of the drive. Adjust as necessary until the drive is within specified level. Tighten the bolts after each adjustment.

LUBRICATION WARNING: The drive unit is shipped from the factory without operating lubricant.

SANDBLASTING WARNING

The Eimco main drive unit and motor drives must be fully covered or sealed off to protect against sand and dust when sandblasting in their vicinity. All external openings, including vents and oil fill plugs and the space between rotating the main gears and stationary bases on the main drive, should be taped closed, covered with polyethelene film, or stuffed with oakum or rag waste. After sandblasting and before start-up, drain a portion of oil from the drive through nylon stocking to be sure grit has not penetrated the drive. Remove all covers.

Failure to observe this warning will void the drive warranty.



Reference Drawings: General Erection, General Arrangement
Reference Illustrations, below and next page

A. Attach the Cage to the Drive

1. Referring to the illustration below, attach the cage to the drive with the adjusting studs (A). Align the bolt holes with the center of slotted holes in the cage (B).

Avoid unnecessary projection of the studs above the upper lock nuts in order to clear the drive platform.

2. Install the bolts and nuts w/washers (B) and snug them. Turn them equally to keep the cage centered about the drive. Shim, if necessary, between the drive and cage (B) to center the cage.
3. Check the cage for plumb with a surveyor's instrument. Use the take-up studs (A) to adjust for plumb. Secure all nuts and bolts (B) and the inside nuts on the take-up studs (A) after each adjustment. Secure the jam nuts on the take-up stud nuts after the cage is plumb.

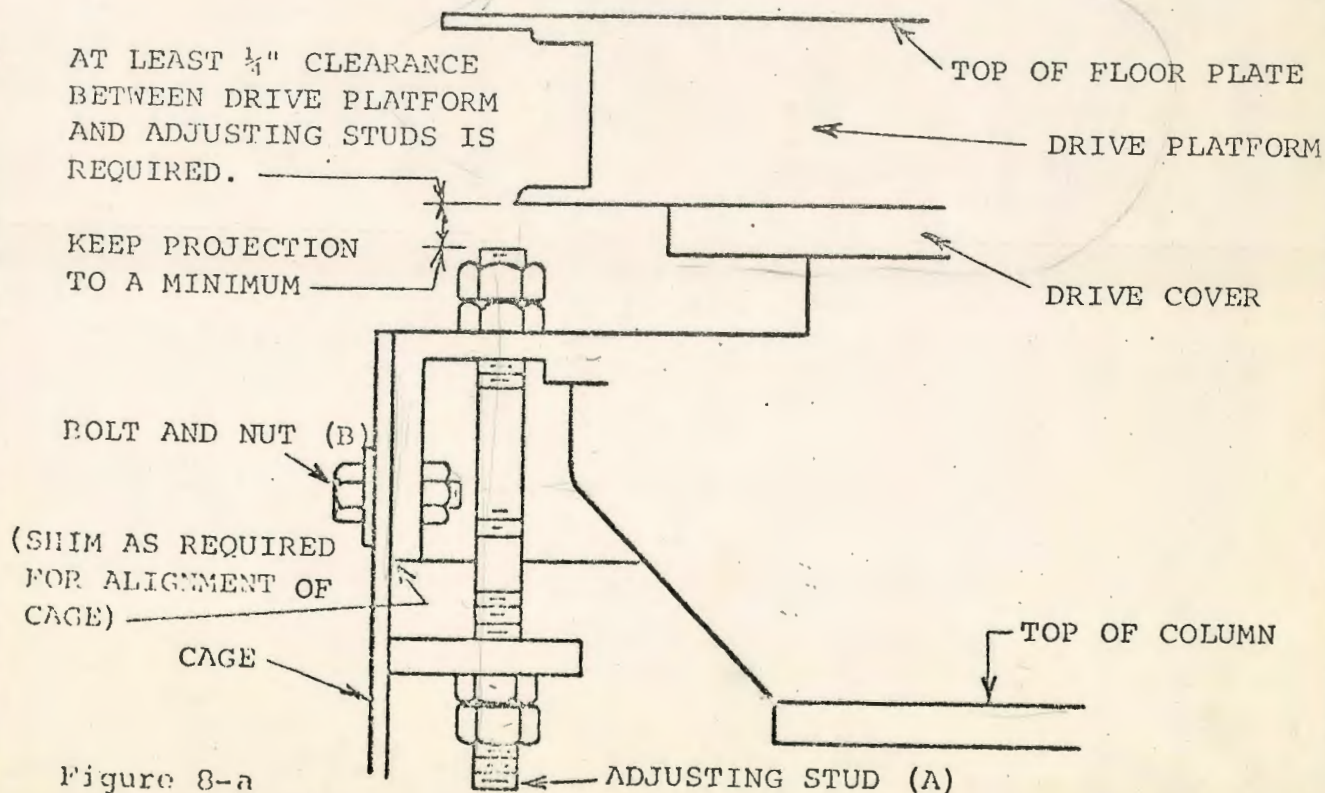
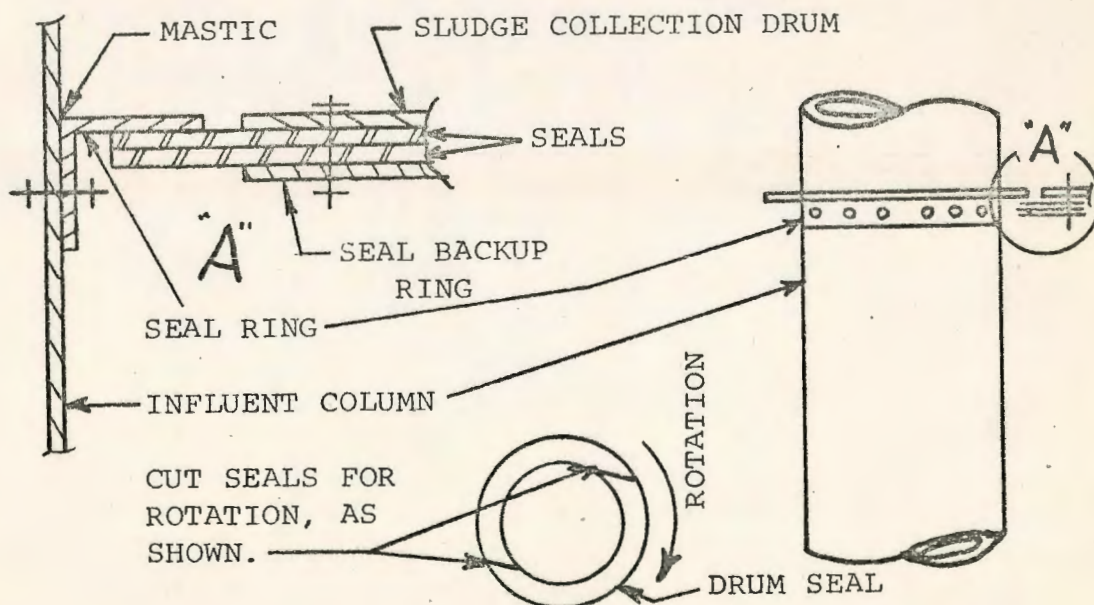


Figure 8-a

In some cases, in order to entirely plumb the cage it may be necessary to shim between the sludge drum and the flanges of the cage sections for the alignment required. This is important - the cage must be in alignment as well as plumb.

B. Install the Sludge Drum Seal

1. Referring to the illustration below, apply mastic to the influent column for the seal ring, then loosely mount the seal ring pieces. Cut the seals as shown.
2. Assemble the seal sections with the seal back-up ring, being sure to orient the seal sections as shown. Mount the seal and ring to the sludge drum.
3. Rotate the sludge collection drum to check the adjustment of the seal ring. Adjust the seal ring for firm, but even contact with the seal all around. Then secure the fasteners.
4. Install the sludge drum control box(es), gates and indicators, as shown on the reference drawings.





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INSTALL THE RAKE ARMS
(OR, SUCTION ARMS)

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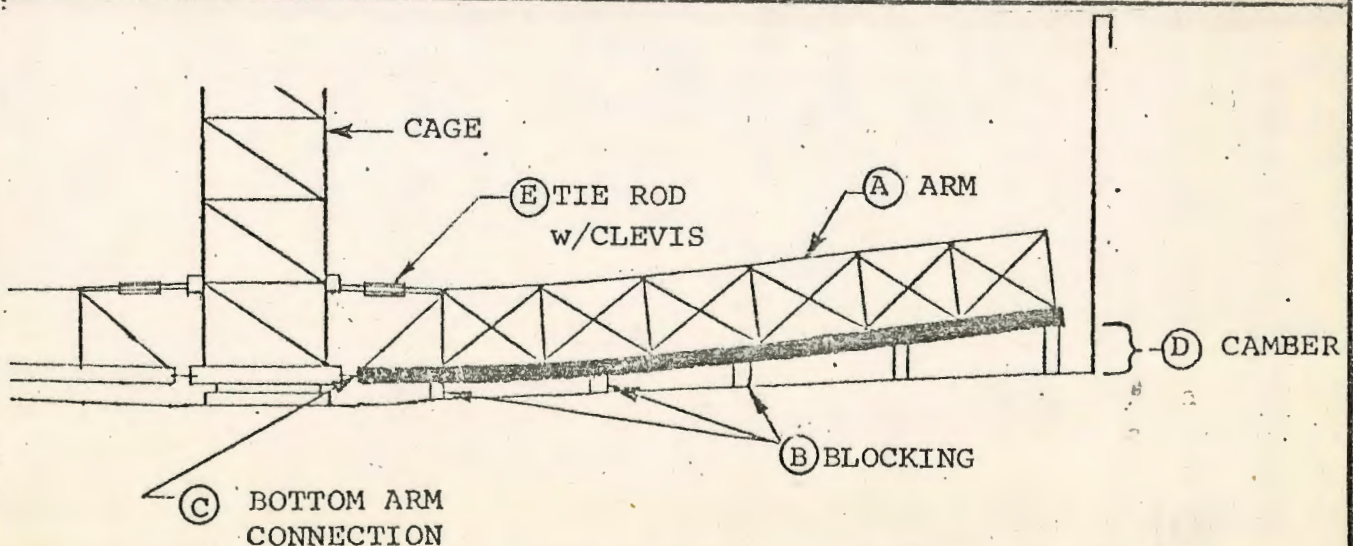
Reference Drawing: General Erection

To prevent misalignment or damage to the cage, install the arms as a pair and support the arms with blocking arranged so that the connection to the cage will not be forced.

1. Arrange the arms (A) around the cage. Install the blades according to the part numbers.
2. Set the arms (A) on blocking (B) arranged with the bottom arm connections (C) adjacent their matching fittings at the cage. Set up the blocking for the slope of the tank, plus the specified camber (D). (See the Camber Diagram on the General Erection drawing.)
3. Connect the arms to the cage first at the bottom connection (C). Do not force the connection. Then connect the arms, above, with the tie rods and clevis (E). Avoid jostling the cage.
4. Remove the blocking (B) equally from each arm, beginning at the cage and working outward. Check the arm blades for clearance with the tank bottom to be sure they do not touch. (Final arm level will be checked later.)

Do not use the tie rods (E) for adjusting the arms.

Use jacks, placed near the outer ends of the arms. Since the arms will deflect, calculate the number of turns on the tie rod before the arms are lifted or lowered.





5. The squeegees will be installed after tank grouting.

Final Leveling Adjustment

1. If it is necessary to adjust the arms, adjust them as a pair, or adjust one arm while supporting the opposite arm with blocking. This is to maintain equal weight on the cage.
2. Do not use the arm tie rods for elevating the arms; use jacks for arm lifting.

1. LUBRICATE THE DRIVE

Reference Drawings: Drive Assembly and Motor Drive

Drive units - Refer to the Drive Maintenance and Lubrication instructions in this manual and the lubrication instructions plate on the drive unit.

Motors and Reducers - Refer to the respective manufacturer's instructions in this manual.

2. DRIVE ROTATION WARNING

Whether air rachets, hand cranks, or independent motors are used to rotate the rake arms for final leveling, make sure the drive worm shaft(s) is turned the direction of the "rotational arrows" on the drive cover or chain guard. This is necessary to ensure full warranty coverage on the drive unit.

If the drive's electrical motor drive(s) is used for drive rotation, refer to the electrical wiring instructions on a following page.

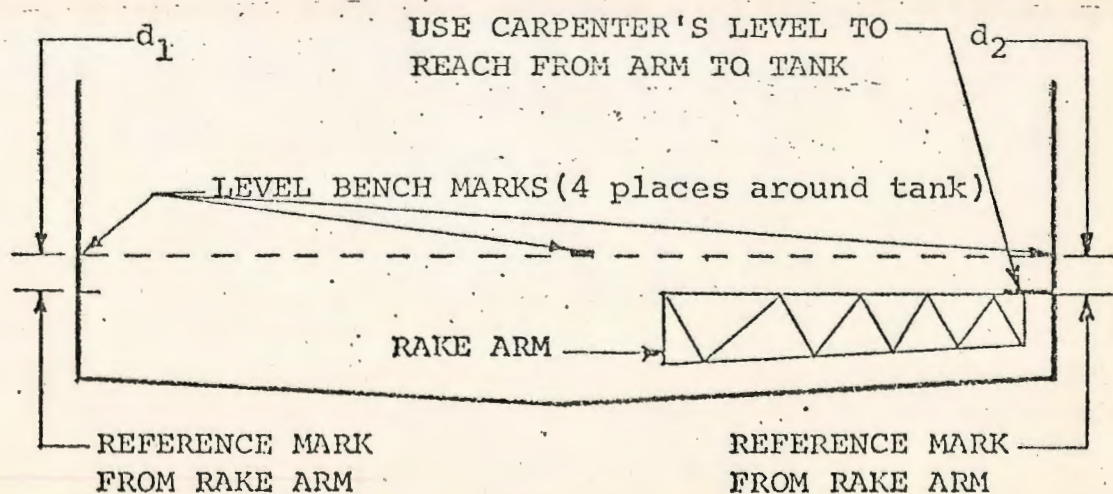
FINAL CHECK FOR LEVEL

The main bearing of the rake drive must be level for proper operation of the mechanism and maximum bearing life. To ensure that it is level, it is necessary to make another, but final check for level of the drive unit. This will be done by measuring the level of the drive at the end of an arm, at various points around the tank. (Note that the drive was shimmed previously for level.)

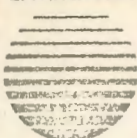
The previous instructions for leveling the drive unit specified a maximum out-of-level tolerance of .005 inch in 12 inches distance, as measured from the machined surface of the drive unit. This is the same tolerance that will be measured now, but this time on a larger scale using the rake arm, rather than the relatively small area of the drive cover.

1. The tank was bench marked previously during the tank inspection. These 4 level marks (90° apart) will now be used to check the level of the drive.
2. Rotate the drive and stop one (and the same) long arm at each of the four level points marked around the tank, using a carpenter's level as an extension from that arm to the tank wall, make the second marks. These are shown as the "Reference Marks" in the illustration.

NOTE: Checking and leveling must be done when the center column is a uniform temperature, such as the early morning or an overcast day.



NOTE: d_1 and d_2 are diametrically opposite.



3. Referring to the illustration, compare the difference in dimensions between the level marks and the rake arm reference marks at diametrically opposite sides of the tank.
4. The difference between the two observed dimensions (d_1 minus d_2) must not exceed the maximum out-of-level dimension below:

<u>Mechanism Diameter</u>	<u>Maximum Out-of-Level Tolerance ($d_1 - d_2$)</u>
50' or less	1/4"
100' "	1/2"
150' "	3/4"
200' "	1"
250' "	1-1/4"
300' "	1-1/2"
350' "	1-3/4"
400' "	2"

A proportional allowance should be made for intermediate diameters, except for mechanisms 50' or less which would remain as 1/4 inch.

FINAL LEVEL ADJUSTMENT

If a final adjustment for level is necessary, it will be done by reshimming between the drive and column flange. Refer to the preceding drive leveling instructions under Drive Installation in this Manual.

In making a final shimming adjustment, care should be taken to tighten the drive mounting bolts equally and to support each drive mounting bolt, as necessary, with the proper thickness of shim material. Uneven tightening and shimming may cause deformation of the bearing races, causing shortened bearing life.

Maximum bearing life of the drive unit main bearing is dependent on proper leveling and shimming. Perfect final leveling is not practical; however, it should be as accurate as possible. As the diameter of the mechanism increases, it becomes increasingly difficult to obtain an accurate adjustment.

MECHANICAL CHECK

A field mechanical check of the equipment should be made at this stage of the erection before the column is grouted. Arrangements should be made in advance with your Eimco representative, referring to the addresses page.

GROUT THE COLUMN

Grout under the column with a non-shrinking type of grout. Pack the grout by tamping to prevent air pockets. For influent columns, use a sheet metal dam or similar device to prevent the grout from spilling into the influent opening.

NOTE: If the column must be readjusted for plumb after the drive is final leveled, the drive must be checked again for level. Use the procedure previously followed for checking final level.

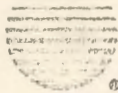
Reference Drawing: General Erection

The feedwell mounts to the cage, by way of supports, and rotates with the arms. The skimming device, which attaches to the feedwell on one end and to a skimmer support on the outer end, requires proper orientation of the feedwell when it is installed.

1. Mount the feedwell supports to the cage, as shown on the drawing. Use the High Strength Bolts. Tighten them according to the High Strength Bolt Instructions when all adjustments are complete.
2. If the feedwell is in more than two pieces, bolt the pieces together to make two half sections. Orient the pieces as shown on the drawing.
3. Mount the feedwell half sections to the supports, then bolt the sections together. Orient the sections, as shown on the drawing, when they are installed.

NOTE: On a machine furnished with a scum skimmer, the holes in the upper part of the feedwell are for attaching the skimmer brackets. These holes must line up with the cage in such a way that, when the arm with the skimmer is installed, it will line up with the holes.

4. Check the feedwell for elevation and level and adjust, if necessary. Secure all bolts.
5. Install the scum deflector (or scum gate assembly if furnished) to the feedwell at the scum outlet opening. The bottom of the scum outlet opening should not be higher than the bottom of the weir V-notches.



INSTALL THE WALKWAY

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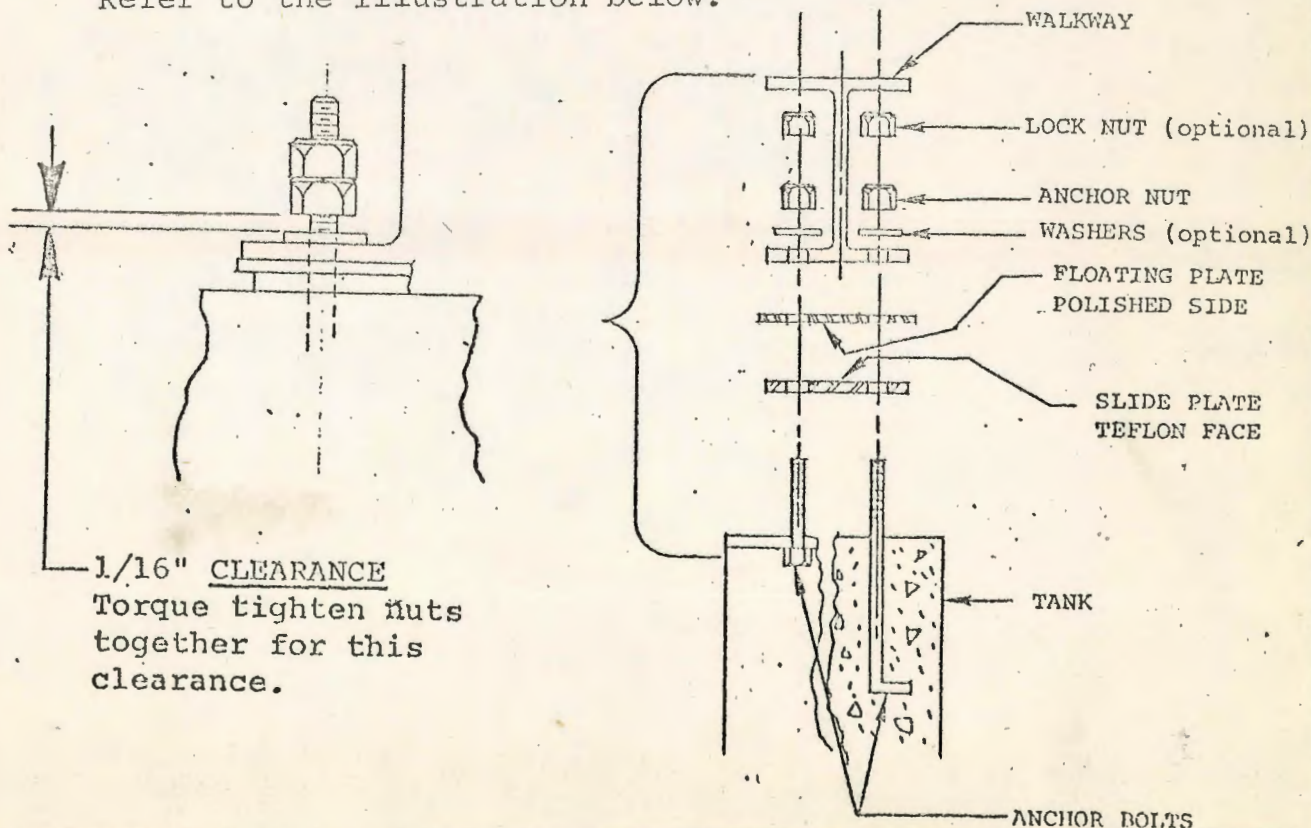
Reference Drawings: General Arrangement and General Erection

1. Mount the slide and floating plates on the drive or tank, as specified on the drawings. The floating plates mount on top of the slide plates with the special sliding surfaces face to face; the sliding surface on a floating plate is polished. (Mounting plates, if furnished, are located on the opposite end of the walkway.)
2. Assemble the platform and walkway on the ground using simulated supports. Adjust for alignment. Use the High Strength Bolts at the platform and walkway connection. Install the walkway assembly.

NOTE: Refer to the High Strength Bolt instructions for proper tightening, using a torque wrench.

3. The bolts where the sliding and floating plates are located should remain loose to allow for contraction and expansion of the walkway during temperature changes. Snug these bolts, then back them off one half turn and secure with lock nuts. Tighten the bolts on the opposite end of the walkway.

Refer to the illustration below.





INSTALL THE WALKWAY

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4. Install the drive platform floor plates or grating. Install any support brackets for piping, etc., that attach to the walkway.
5. Install handrails, kick plates, windows and nameplate. Refer to the handrail splice instructions on the following page, if furnished by Eimco.



Reference Drawings: General Arrangement and Superstructure
Erection

HANDRAIL

1. Install the walkway handrail as shown. If handrail "splice locks" are used, install as follows, referring to the illustration below:
 - (a) Remove the screws from the splice lock fitting, then insert the splice lock into one end of the handrail and line up the tapped hole with the matching hole in the handrail. Replace the screw for that side but do not tighten.
 - (b) Slide the mating handrail over the projecting end of the splice lock and replace the second screw.
 - (c) Tighten both screws. This causes the lock to expand and grip the inside of the handrail. The screws are always on the underside of the handrail.

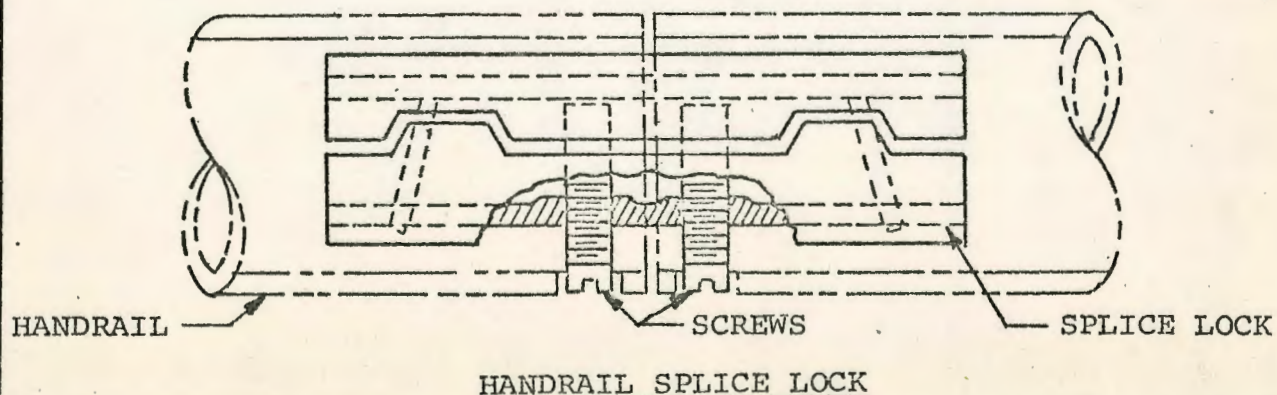
FLOOR PLATES

Install the floor plates, and toe plates if furnished, for the walkway, referring to the part numbers and match marks.

CHECK the floor plates to ensure clearance with all drive unit components.

NAMEPLATE

Install the Eimco nameplate as shown.



1. LUBRICATE THE DRIVE

Reference Drawings: Drive Assembly and Motor Drive

Drive units - Refer to the Drive Maintenance and Lubrication Instructions in this manual and the lubrication instructions plate on the drive unit.

Motors and Reducers - Refer to the respective manufacturer's instructions in this manual.

2. CONNECT ELECTRICAL WIRING

Reference Drawings: Motor Drive Wiring, Drive Control Wiring, and Alarm Wiring, if furnished

Refer to the drawings for connection of the wiring to the motor drives, drive control, and, as furnished, alarm, control panels, torque recorders, etc. Eimco does not furnish, locate or install the interconnecting wiring, control panels, etc. Note that all interconnecting wiring must meet local electrical codes.

Drive Control Caution: The drive control is the overload cut-out device for the drive. Since it is installed and adjusted at the factory for proper operation, do not tamper with it. If the original cam settings are not considered satisfactory for the operating conditions, contact your Eimco representative before attempting any adjustments.

3. CHECK DRIVE ROTATION

Make sure the drive motor(s) is connected for proper direction of rotation. If it is not, the drive unit warranty will be void and any costs for drive damage will not be accepted by Eimco.

CHECK the motor drive for direction of rotation before it is connected to the drive unit. Refer to the directional "arrows" on the drive cover, chain guards or Motor Assembly drawing for direction of rotation.



If the motor drive was not shipped installed, the drive sprockets or sheaves must be aligned as follows, when the motor drive is installed:

Set the driven sprocket or driven sheave on the worm shaft* outward 5/16 inch from true alignment. This is necessary since the worm shaft will be displaced inward 5/8 inch under maximum running load. This initial setting, then, will allow for near true alignment with the displacement that occurs under normal running load. Adjust the chain or belt for tension as recommended by the manufacturer.

* Driven sprocket on shaft mounted reducers



Reference Drawings: General Arrangement and General Erection

The purpose of this adjustment is to ensure that all arms have proper and equal clearance with the tank bottom so that each arm shares its load, preventing unbalanced loading on the mechanism.

This adjustment must follow the final check for level of the drive unit.

1. Check the bottom of each arm for proper clearance with the tank bottom at the center of the mechanism, referring to the General Arrangement drawing. Vertical adjustments are made by raising or lowering the cage by means of the take-up studs and slotted connections between the drive and cage. Use of jacks under the cage for this adjustment is recommended. In this case, recheck the cage for plumb.
2. The arms must sweep at the specified clearance with the tank bottom and in the same plane. This is checked by means of a reference device on the tank floor. Adjust or mark the device for the required clearance of the arms from the tank floor.
3. Rotate each arm to the place of the checking device and adjust the arm for the required clearance. Since the arms will deflect, calculate the number of turns of the tie rods before the arms are raised or lowered. DO NOT attempt to lift the arms with the tie rods. Use a jack for lifting.
4. Secure all arm connections.



Reference Drawings: General Arrangement and Illustrations on the following pages

Carefully review these instructions before starting the grouting:

WARNING: The drive control (torque indicator) must be connected before starting the grouting. This is a protective device for the drive unit and mechanism. Bypassing it directly to the motor drive will void the warranty.

SCREED BOARD CONSTRUCTION

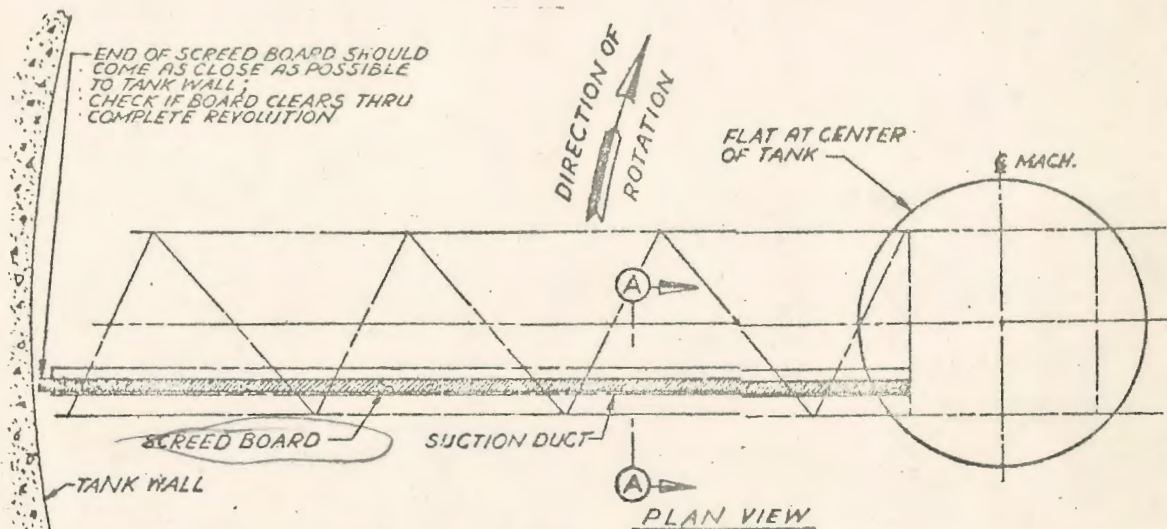
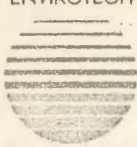
1. Cut two by six timber as shown on the next page. Using 3/8" bolts, bolt the timbers to the ducts with the bent sheet metal. The screed board arrangement shown will allow for an average two inch grout thickness. At no point should the grout thickness be less than one inch to avoid cracking.

The details of the drawing must be followed to obtain a proper grouting and the constant two inch space between the screed board and tank bottom.

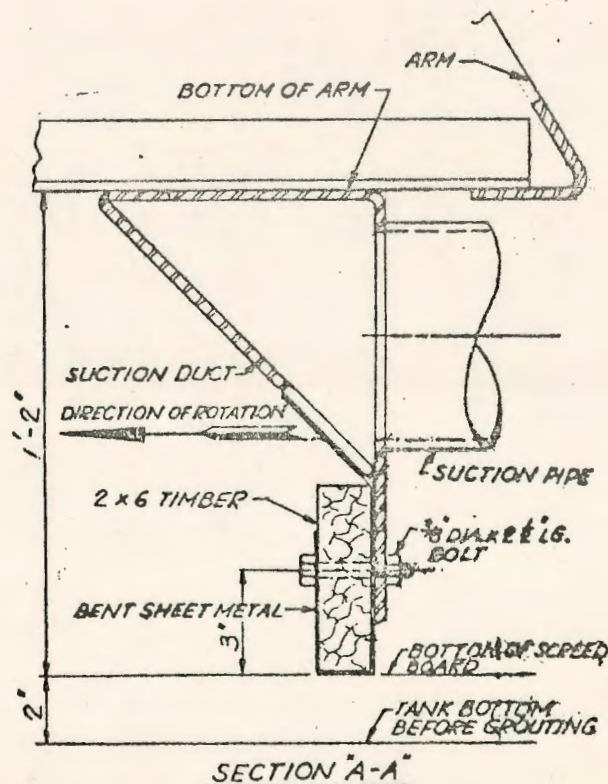
2. Since the center of the tank may be flat, sloped or cone shaped, it may require grouting by hand. Whether it is grouted flat or sloped, be sure a constant depth of grout not less than 1 inch is maintained. Prepare a form around the trough or cone, as required, to keep out the grout.
3. Nail a piece of sheet metal to the end of the screed board to scribe the outer circle of the rounded part of the tank.
4. A thin board may be attached to the corner rake blade to be used as a template for determining the depth of grout in the corners. However, it must never be used as a screed to spread the grout.

GROUTING

1. Prepare the grout about the consistency of mortar so that it is wet enough to be workable, yet stick to the tank bottom. Too much water will cause the grout to run or slide down the sloped tank bottom. (Slump is maximum 5", minimum 4").



- NOTES: 1. SCREED BOARDS ON ONE ARM ONLY FOR TANKS BELOW 50'-0" DIA. SCREED BOARDS ON TWO ARMS FOR TANKS 50'-0" DIA. AND OVER.
2. SCREED BOARDS, SHEET METAL, NUTS AND BOLTS TO BE FURNISHED NOT BY EIMCO.



2. Begin by grouting the round part of the tank with the mechanism. Start with a 2 foot wide ring (2 rings, one for each arm on units over 50 feet diameter) of grout at the outer edge of the tank. This ring can be gradually widened to about 4 feet as it approaches the center of the tank, but avoid excessive loading on the arm(s). Continue the outer ring in a spiraling pattern working towards the center of the tank.

Cement finishers should work just ahead of the screed arm(s) to be certain the grout is proper thickness to cover the area and to prevent excessive loads accumulating in front of a moving arm, it should be wide enough for the cement finishers to work it at the rate of arm travel.

NOTE: Two other procedures for grouting have been used, but are discouraged for the following reasons:

- (a) Grouting in "pie" or wedge shaped sections extending the full radius of the tank. This will cause the screeding arm to deflect enough to result in an unevenly grouted bottom, and, further, impose excessive loads on the drive and arm mechanisms.
 - (b) Grouting from the center of the tank outward. In this case, excessive water from the freshly placed grout will run down toward the center of the tank and sometimes channel the area that has already been grouted. It will also tend to wash out the cement, resulting in a weak grout.
3. Rotate the mechanism 2 to 3 times to pick up any grout that may have sloughed toward the center. When sloughing occurs, it will be necessary to remove the excess and fill in the low areas with fresh grout. Watch for rocks or dried pieces of grout during this procedure, which may catch under the screeds and gouge the surface. The ungrouted area at the center of the tank can be filled in by the cement finishers working from the arms.

Careful grouting can produce a finished tank bottom that is uniform within a $\pm 1/4$ inch of the specified depth.

4. Grout the flat corner areas of the tank last. By rotating the rake arms, the outer circle of the round part of the

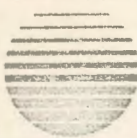


tank will be scribed, as shown in the illustration on the next page.

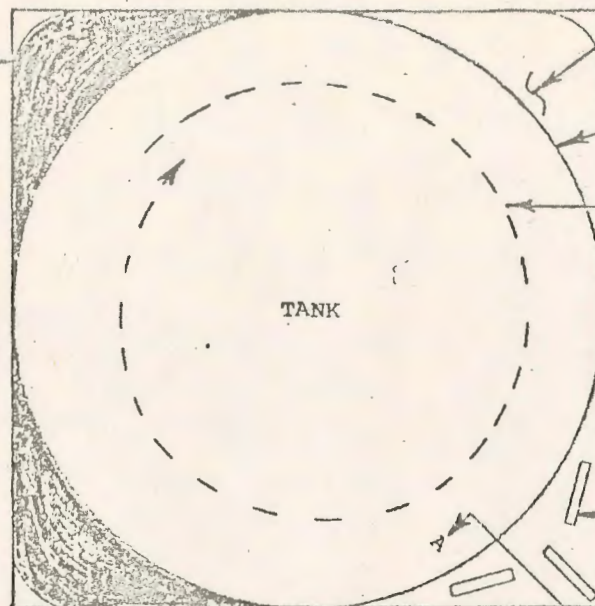
The depth of grout at the scribed edge is the depth the flat corner areas should be grouted. Referring to the illustration, set screed guides (on piles of grout) for the depth of grout in the flat areas. Make sure the guides are level.

Grout the corners by hand. A thin board may be mounted to the corner rakes to serve as a template. Do not use the corner rakes as screeds.

5. Remove the screeds when the grout has dried and replace them with the squeegees or blades.



ALL CORNERS
FLAT AND
LEVEL



GROUT OF CIRCULAR PORTION
ESTABLISHES ELEVATION FOR
EACH CORNER

SCRIBE MARK DETERMINES
OUTSIDE OF ROUND PORTION

ROUND PORTION OF TANK
GROUTED WITH RAKE ARMS
IN SPIRALING PATTERN

SCREED GUIDES SET ON
CONCRETE PILES TO
ELEVATION OF SCRIBED
GROUT OF ROUND PORTION

DEPTH OF GROUT AT
SCRIBED EDGE DETERMINES
DEPTH OF GROUT IN FLAT
AREA

SCRIBED
EDGE - SEE
DETAIL A

GROUT SWEEP IN
BY MECHANISM

CONCRETE
TANK BOTTOM

SCREED GUIDES SET ON
CONCRETE PILES PRIOR
TO GROUTING

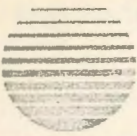
STEEL GUIDE
PLATE IF
FURNISHED

SECTION AA

SCREED ON
RAKE ARMS

SCRIBE ON
END OF
SCREED BOARD

DETAIL A



The corner raking mechanism may be used as a template for grouting in the corners of the tank.

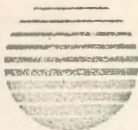
DO NOT use it for grouting. This part of the grouting must be done by hand.

Although the corner raking mechanisms are designed with a safety factor, they are not designed for the heavy loading that would be imposed by grout.

DO NOT install the squeegees until the tank is grouted.

Reference Drawing: Corner Raking Mechanism Assembly

1. Turn the rake arms into the corners.
2. Install the end frames and diagonals.
3. Assemble the pivot arm shafts, bearings, tension spring and spring tensioner assembly. Do not tension the spring at this time.
4. Assemble the outer arm diagonals, ties and blade. Then assemble and mount the roller wheel assembly. (Alignment will be checked later.)
5. Grease all bearings. This is for start-up only, since they will be water lubricated during operation.
6. Turn the arms to a side wall position and pull the corner rakes into position with the wheel against the wall.
7. Remove the bolts which lock the spring bracket to the spring tensioner. Using the tool provided, turn the spring tensioner clockwise, approximately 3/4 revolution. Then replace the locking bolts. Thus, the spring will wind up when loaded.
8. Install opposite corner raking mechanism.
9. After final arm alignment, rotate the arms at least once around the tank to be sure the mechanisms function properly and track smoothly in line with the guide track. Also make sure the mechanisms extend smoothly into each corner and hold the roller against the guide plate with a minimum of 10 pounds force (in the corner position). DO NOT use mechanism for grouting.



Reference Drawings: Skimming Device Assembly, General Erection
and General Arrangement

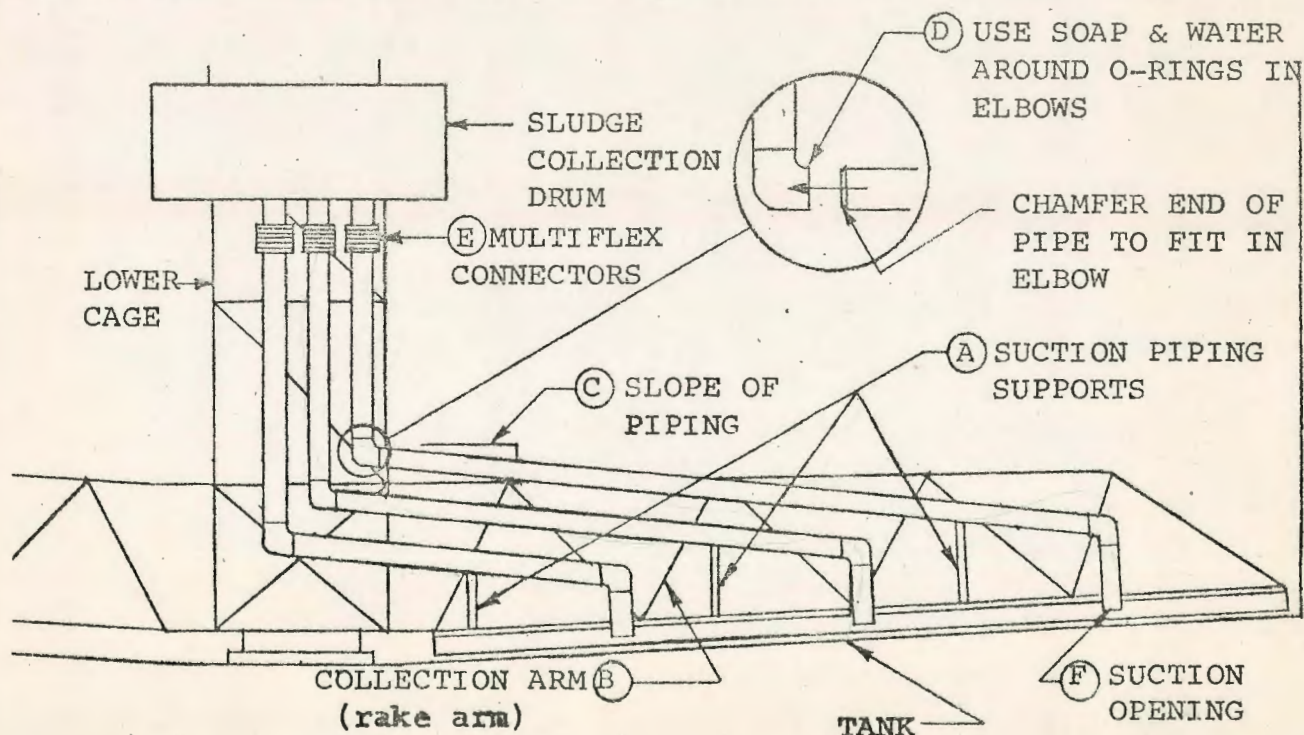
1. Place temporary blocking under the outer ends of the arms for support.
2. Mount the vertical, skimmer support(s) to the arm(s), as shown. Attach the skimmer bracket to the feedwell if specified and mount the skimmer.
3. On mechanisms with a single skimming device, install the counterweight box on the arm opposite the device, attaching it to the bottom chord. Refer to the General Arrangement drawing. Fill the box level with concrete.
4. Assemble the skimming device, as shown on the Assembly drawing, mounting it to the skimmer arm. Then mount the skimming device and arm assembly to the vertical, skimmer support.
5. Attach the spring to the hinged skimmer. If furnished, mount the skimmer arm roller.
6. Check the scum box for proper elevation and level.
7. Refer to the Skimmer Arm Assembly Maintenance and Adjustment instructions for complete adjustment and maintenance procedures.

Reference Drawing: General Erection

1. Mount the suction piping supports (A) to the collection arms (B), locating them as specified on the Erection drawing.
2. After cutting the pipes to length, chamfer the ends in order to fit within the elbows.
3. Mount the piping to the arms, arranged for the specified slope (C) upwards towards the cage, as specified in the drawing. In assembling the piping, it will help to lubricate the ends of the pipes and elbows with a soap and water solution, particularly around the O-rings (D).
4. Make sure the vertical pipes leading into the sludge drum are aligned before the multiflex connectors (E) are installed. The connectors should not be twisted, bent or stretched from their natural form.

AFTER GROUTING

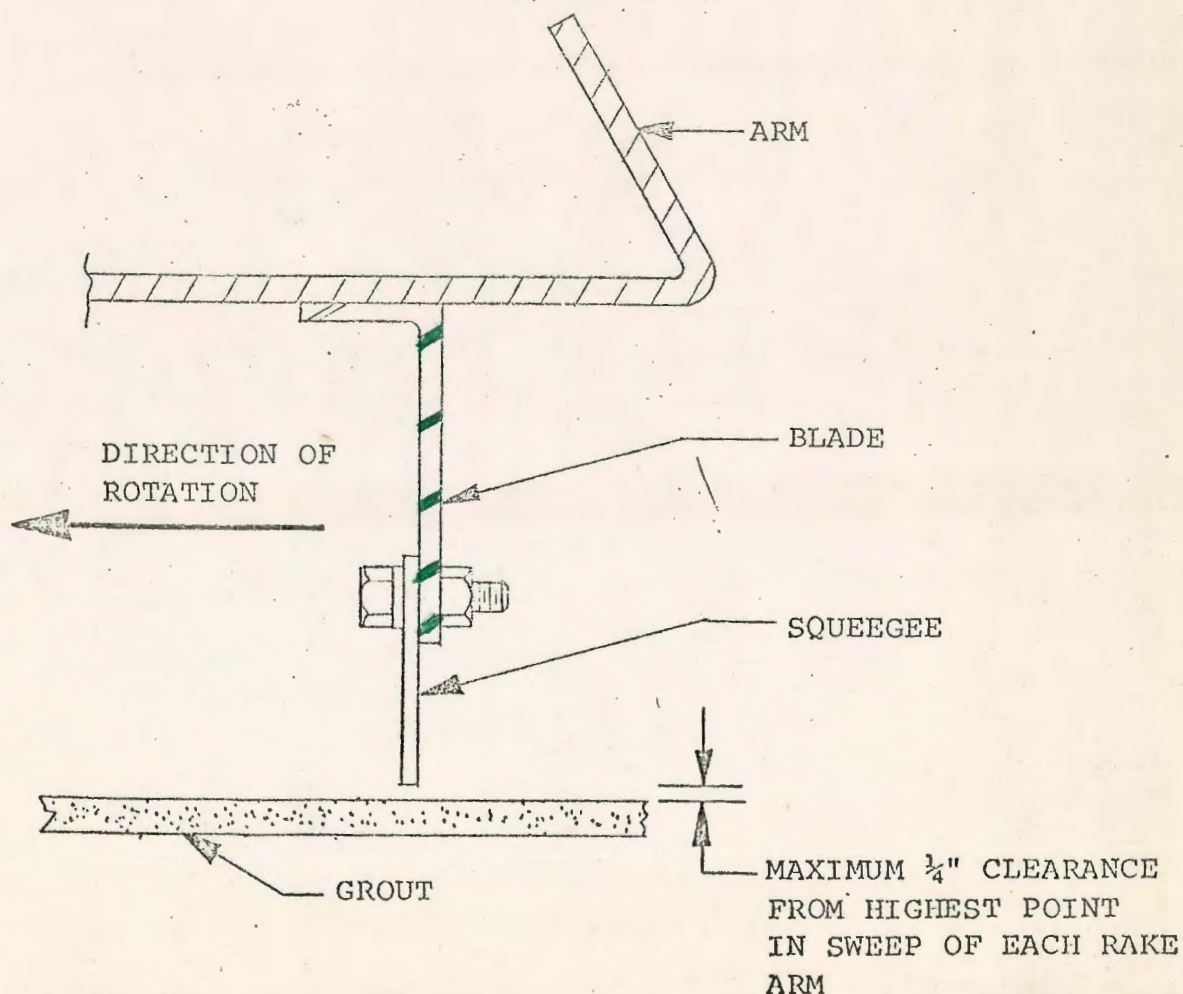
CHECK the suction openings (F) after grouting to be sure they are clear and open.



Reference Drawing: General Erection

1. After the tank has been grouted, install the squeegees, referring to the part numbers in the drawing. The squeegees must be installed on the side of the blade facing the direction of arm rotation, as shown in the illustration below.
2. Adjust each squeegee for minimum clearance with the bottom of the tank, not to exceed $1/4$ inch from the highest point in the geometric plane of its sweep.
3. Rotate the arms and check clearances.

☐ CHECK squeegee clearance around the tank by rotating the arms.



To make sure you receive the right replacement parts for your equipment and avoid delay, it is important to give the following information with each order:

1. SIZE AND TYPE OF UNIT: These are found on the cover page of the manual and on the Material List pages.
2. SERIAL NUMBER: This is found on the unit name plate and the Material List. In case the S/N is omitted on the Material List, use the Order Number since it and the S/N are similar.
3. PART NUMBER AND DESCRIPTION: Listed on Material List.
4. SPECIAL FIELD MODIFICATIONS: This is important if the original material or design has been changed. Include drawings or other descriptive information.

Example: 400' Dia. Eimco Thickener, Serial No. 72311-01, for C-120-BX Drive Unit; Bearing (#5217), part no. G2019, etc.

Send your parts orders to Eimco, Division of Envirotech Corporation, PMD Parts Department, Salt Lake City, Utah, or your Eimco Representative. Refer to the address page.

Equipment stored or out of use more than 30 days must be protected against corrosion and damage. This includes equipment for erection which is the responsibility of the erector.

FAILURE TO COMPLY WITH THESE STORAGE INSTRUCTIONS WILL VOID EIMCO'S FACTORY WARRANTY.

SHORT TERM STORAGE

If the equipment is installed, but will not operate for two months or less, leave the power connected. Operate for five minutes about once a week to lubricate all running surfaces. If motors are furnished with space heaters, they should function throughout the nonoperative period.

If equipment received in shipment will be stored less than two months, including the intransit time, no special precautions are required other than those listed below under "General Precautions".

GENERAL STORAGE PRECAUTIONS

1. Always store drive equipment in normal operating position.
2. If possible, store drives indoors in a dry, well ventilated place with a relatively constant temperature.
3. When drive equipment is not installed, but must be stored outdoors:
 - a. Use wooden blocks to elevate above ground, arranged for even and firm support. Shipping crates or skids will often do. Make certain storage area is not where water can collect.
 - b. If protective covers have been removed or damaged, cover with canvas or protective tarpaulin, but allow adequate ventilation. Do not use plastic covers if space heaters are used.
 - c. Whenever possible, store in shaded area protected against wind. This should also be an area that is out of the way of moving equipment.



4. Apply a corrosion inhibitive agent to all unpainted metal surfaces, such as drive shafts. For relatively short storage periods, a coat of oil is sufficient. Refer to special "Paint Durability" precautions page at the end of these storage instructions.

LONG TERM STORAGE PRECAUTIONS - MECHANICAL

The following precautions cover nonoperation or shutdown periods that exceed two months. They apply mainly to the Eimco or accessory mechanical drive equipment. Keep records and schedules to ensure compliance with instructions.

Plan #1 - Power Available

When power is available, all equipment should be lubricated and operated about five minutes, or run through a complete cycle once each week. Drives must have accumulated water removed monthly. Some lift devices have dehumidifiers which should be operated continuously. Refer to the accessory equipment manufacturer's instructions for additional information.

Plan #2 - No Power Available

Fill housing and gear cases with clean oil to maximum level. A rust inhibitive agent is recommended for adding to the oil. On certain type Eimco drives, make sure the primary, as well as the secondary drives, are lubricated. Check that all greased bearings are well lubricated. Cover seals, screws, chains and guides with heavy grease and cover breather caps with tape. Cover with tarpaulins, but allow ventilation. Space heaters or dehumidifiers should operate continuously.

← Once each month open drain plugs to remove accumulated water and return oil to maximum level. Check all greased items monthly for adequate covering. On variable speed drives, make certain condensate plugs are removed from the speed housing. Release tension on all drive belts.

When the storage period extends into seasonable warm or cold weather, drain all gear housings and flush them with oil to remove residual water. Do not flush with solvents.

Warning: Before the drive equipment is put into operation after storage, drain all oil and lubricate according to instructions. Relubricate all greased bearings and pump out old grease. Check motor windings. Refer to accessory equipment manufacturer's instructions.

LONG TERM STORAGE PRECAUTIONS - STRUCTURAL

1. Inspect painted surfaces for deterioration of paint. Apply finish coats as soon as possible. When this is not possible, remove rust or corrosion and paint, as necessary.

For shop primed steel equipment, refer to the special "Paint Durability" Precautions below.

2. Rubber coated equipment should be protected against the sun, extremes in temperatures, including freezing, and mechanical damage.

SHOP PRIMER PAINT DURABILITY

Shop primer paints are intended to serve only as a bonding coat between metal surface and protective finish or sealing coats and act as a minimal protective finish. Envirotech will not be responsible for condition of primed or finish painted surfaces after equipment leaves its shops. Purchasers are invited to inspect painting in shops for proper preparation and application prior to shipment. Envirotech assumes no responsibility for field surface preparation or touch up of shipping damage to paint. Painting of fasteners and other touch up to painted surfaces will be by Purchaser's painting contractor after mechanism erection.

Shop primed steel surfaces should be finish coated within the time specified by the paint manufacturer. Eimco cannot accept responsibility for shop prime coats that have deteriorated due to exposure and time.

GENERAL

These instructions cover the following drive units: B-22, B-33, B-40, B-50, B-60, and C-30, C-40, C-54, C-60, C-72 and C-80.

DRIVE UNIT

These drive units consist of a main gear on the bottom, which drives the shaft or cage, and a worm assembly on top. (The C-60 and B-60 drives have a secondary gear assembly between the worm and main gear).

The worm gear drive is designed with a worm shaft that moves axially under loaded conditions of the drive unit. This movement is made possible by a thrust bearing with a sliding bearing seat arrangement on the loaded side of the worm.

The sliding bearing seat is held in place by a spring, and the compression of that spring, when the drive is under load, indicates the torque on the drive unit. When the spring compresses, its movement is transmitted by the movement of the bearing seat against an actuating pin screwed into the drive control cam support. (The spring is calibrated for load at the factory).

DRIVE CONTROL

This control protects the drive against overload and damage. It warns both visually with an indicator and automatically by stopping the motor drives, sounding an alarm, etc.

The drive control is mounted on the worm housing. It consists of a cam shaft with adjustable cams, which are set to actuate micro switches at certain percentages of torque. Thus, as the drive spring compresses under load, the actuating pin turns the cam support. This, in turn, rotates the cams and they actuate the various switches, depending on the load.

One switch usually sounds an alarm (normal setting at 60%) and the other stops the machine (normally set at 90%). The percentage of rated output torque is indicated by the pointer. With no load on the unit, the pointer is at "Zero".

The drive control is adjusted at the factory and must not be touched.

DRIVE SPRING ADJUSTING SCREWS

The screws were adjusted at the factory. Do not tamper. They were set for each drive spring according to the spring's individual compression (deflection) when under actual load. If readjustment is necessary after drive repairs, contact your Eimco Representative.

SPROCKETS AND CHAINS OR BELTS AND SHEAVES

See motor drive assembly drawing for setting of driven sprocket or sheave on the worm shaft. This distance is required to allow for movement of the shaft into the housing under loaded conditions, as explained previously.

Readjustment of the sprocket or sheaves might be required later to compensate for a certain worm shaft position under average loaded conditions. This should be done by moving the drive sprocket or sheave on the output shaft of the Motor Drive unit.

WARNING: Make certain the drive motor is connected for proper direction of rotation, as shown on the Motor Assembly drawing and shown by an arrow on the drive cover. Check this before mounting the chain or belts. Improper direction of rotation will cause drive damage and void the warranty covering the drive unit.

LUBRICATION

Drive Lubrication Must Follow the Manufacturer's Instructions:

The drive is a combination of Eimco manufactured parts and gear reducers, purchased from others. The following instructions apply only to the Eimco main drive unit. They do not cover gearmotors or reducers built by manufacturers other than Eimco, although those drive units may be furnished integrally with the main drive. Refer to the respective manufacturer's instructions, attached to the drive units or contained in this manual.

Refer to the lubrication plate and the schedules as follows.

LUBE MAINTENANCE

Drain and refill after the first 250 operating hours. Thereafter, change oil every six (6) months. *5440 HRS*

Check mark on oil gauge or dipstick periodically, to make sure the oil is maintained at proper level. The oil level shows that the gears are only partly submerged. Lubrication of the full contact surface of the teeth depends on the pumping action created by the meshing of the teeth of the pinion and the main gear and therefore oil level is important.

Condensate drains should be opened at regular intervals to drain possible condensation.

The oil fill plugs have a vent hole; be sure this hole is not closed by paint and is open at all times. Lubricate chains periodically with grease.

OIL SPECIFICATIONS

Proper lubrication depends on the correct viscosity of the oil. Too heavy an oil will not run down fast enough resulting in oil being pumped over the gear edge and through the dust seal to the outside. Too light an oil can result in the tooth contact surface not being lubricated fully to the top of the teeth.

Extreme temperature differences, as in winter and summer, therefore require different grades of oils. Refer to the lubrication plate on the following page or affixed to the drive for the proper lubricant.

OIL QUANTITIES (APPROXIMATE)Worm Gear:

B-22	1/2 gal.
B-33, C-30	1 1/4 gal.
B-40, B-50, C-40, C-54, C-60, C-72, C-80....	3 gals.

Main Gear:

B-22	1/2 gal.	B-50	3 1/2 gals.
B-33	1 3/4 gals.	B-60	18 gals.



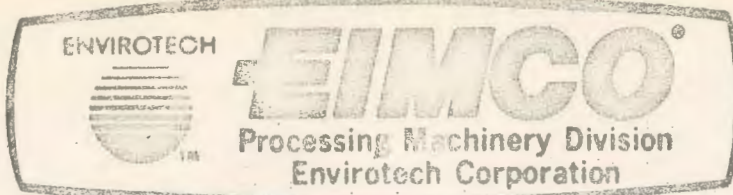
**DRIVE MAINTENANCE
AND
LUBRICATION INSTRUCTIONS**

B-40	2 1/2 gals.	C-60	4 gals.
C-30	1 1/4 gals.	C-72	6 gals.
C-40	2 1/2 gals.	C-80	10 1/2 gals.
C-54	3 1/4 gals.		

Secondary Gear:

Note: This housing is on the C-60 and B-60 Drives only.

C-60, B-60 .. 9 1/2 gals.



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DRIVE UNIT DIAGRAM



LUBRICATION INSTRUCTIONS

PART	SYMBOL NO.	METHOD	AMBIENT TEMP.	LUBRICANT	AGMA NO.
WORM GEAR	1	RESERVOIR	30 F. & BELOW 0 F. TO 110 F.	MOBIL GEAR 629 MOBILGEAR 632	4 EP 6 EP
GEAR	2	RESERVOIR	30 F. & BELOW 0 F. TO 110 F.	MOBIL GEAR 629 MOBILGEAR 632	4 EP 6 EP

THE ABOVE ARE MOBIL OIL CORPORATION PRODUCTS

GEARCASES SHOULD BE DRAINED & REFILLED WITH FRESH OIL AFTER FIRST 250 OPERATING HOURS. THEREAFTER ONCE EACH 6 MONTHS. DRAIN CONDENSATE FROM HOUSINGS ONCE EACH WEEK.

NOTE: OTHER VENDOR EQUIPMENT SHOULD BE LUBRICATED ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

87227A

$\frac{3}{32}$ DIA. (4 HOLES)

$\frac{3}{32}$ (TYP.)

NOTE

REMOVE ALL BURRS AND SHARP EDGES

INSTRUCTION PLATE

EIMCO PART NUMBER..... 87227A

SPECIFICATIONS

MATERIAL..... STAINLESS STEEL
PLATE TO BE FURNISHED TO EIMCO BY MOBIL OIL CORPORATION.

C		
B	3700	1-9-74
A	3118	10-9-72
	D/R	DATE
REVISION		



EIMCO PROCESSING MACHINERY DIVISION-ENVIROTECH CORPORATION-Salt Lake City, Utah

This drawing and all information thereon is the property of Eimco and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.

HOLD FRACTIONAL MACHINED DIMENSIONS TO $\pm 1/64$ "

DO NOT SCALE PRINTS

DATE 12-28-71

DRAWN Banks

CHECK'D R.D.P.

APPR. G.F.H.

INSTRUCTION PLATE

DWG. NO.

87227

REV.

B

LUBRICANT EQUIVALENT LIST

MANUFACTURER	GREASE	OIL						
	NLGI	AGMA EQUIVALENT NUMBER / VISCOSITY (SUS @ 100°F.)						
	No. 1	2EP/284-347	4EP/626-765	5EP/918-1122	6EP/1335-1632	7EP/1919-2346	7EP/1919-2346	8EP/2837-3467
MOBIL EP LEAD-BASED	MOBILPLEX #1	COMPOUND AA	COMPOUND BB	COMPOUND CC	COMPOUND DD	COMPOUND EE	COMPOUND FF	COMPOUND GG
MOBIL EP NON-LEADED	MOBILUX EP2 or MOBILPLEX 47	MOBILGEAR 626	MOBILGEAR 629	MOBILGEAR 630	MOBILGEAR 632	MOBILGEAR 633	MOBILGEAR 634	MOBILGEAR 636
AMERICAL OIL + NON-LEADED	AMDEX #1	PERMAGEAR #50	PERMAGEAR #60	PERMAGEAR #70, #90	PERMAGEAR #110	PERMAGEAR #140*	PERMAGEAR #140*	PERMAGEAR #160
STANDARD OF CALIF. + NON-LEADED	RPM MULTIMOTIVE #1	CHEVRON GEAR COMPOUND NL# 60**	CHEVRON GEAR COMPOUND NL# 80	-----	CHEVRON GEAR COMPOUND NL# 120	CHEVRON GEAR COMPOUND NL# 140	CHEVRON GEAR COMPOUND NL# 140	CHEVRON GEAR COMPOUND NL# 160
SUN OIL NON-LEADED	SUNAPLEX 1 EP	SUNEP 1050	-----	SUNEP 1070	SUNEP 1090	SUNEP 1110	SUNEP 1130	SUNEP 1150

* Amoco Permagear #140 is intermediate to AGMA #7 and #8. It is recommended by American Oil for use where either AGMA grade is specified.

Blanks "----" indicate no equivalent lubricant is shown by respective manufacturers in this viscosity.

** Chevron Gear Compound #60 is not available in 100% non-leaded compound. Standard advises that lead content of #60 is very low and will meet all but the most stringent lead-free requirements.

+ Unconfirmed rating



EIMCO
PROCESSING
MACHINERY
DIVISION

DRIVE MAINTENANCE
WARNING

M-55 51
(4/75)

DRIVE MAINTENANCE WARNING

CHECK:

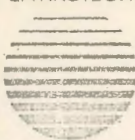
Before starting the disassembly of a worm drive, make certain the torque indicator on the drive control is on "0".

Next, try rotating the worm shaft (or shafts) by hand. The shaft(s) must rotate freely both directions within the limits of normal backlash.

This is necessary since the drive spring may be compressed and under extreme pressure. In this case, if an attempt is made to remove the drive end plate, the plate assembly and spring would be ejected with extreme force out the end of the drive!

RELIEVE SPRING TENSION:

In case of stored-up torque, drain the tank and find the cause. Check the trough scraper, the rake arms, the cage or shaft. Whatever is holding them must be released and the arms backed up. Dig out the rake arms if that is necessary. But never start the disassembly of a drive head if torque is indicated.

CHECK POINTS BEFORE START UP

1. Remove any foreign matter from the tank or pipe lines.
2. Operate the unit for at least 4 or 5 revolutions after the machine has been leveled.
3. Observe the rotation, watching particularly for clearance of the arms with the tank bottom. Observe from outside the tank for safety.

DRIVE UNIT

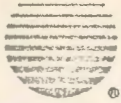
1. Do not try to restart the unit when it has stopped due to extreme overload. Correct the cause of the problem first. Do not bypass or tamper with the drive control cut-out device.
2. Be sure the drive unit operates in a clockwise direction. Normal rotation is clockwise.
3. Check lubrication of the Eimco drive unit and the motor drive with the instructions contained in this manual.
4. Refer to the Drive Maintenance Instructions for adjustment of the drive sprockets or sheaves and the drive control.
5. Check the operation of automatic control devices and/or torque indicator transmitter.
6. Bypass the flow to the unit in case of power failure.

UPKEEP AND MAINTENANCE

* The following procedures should be followed according to the schedule provided:

1. Once a week:
 - a. Check the drive lubricant level and drain condensate.
 - b. Check all vent holes. Clean as required.
 - c. Test all overload devices for proper function.

- d. Check that the scum skimmer assembly is properly adjusted and working efficiently. This includes neoprene wipers and spring-loaded hinges.
 - e. Ensure that the sludge collection drum control gates are at correct setting for proper sludge density. Do not force the control gate shaft. If it is binding, lower the water level and free the binding portion of the gate. Lubricate the gate mechanism as required with a waterproof grease.
2. Every six months, change the drive oil as specified in the drive maintenance instructions.
 3. Examine gears, oil seals and bearings yearly.
 4. As required:
 - a. Clean the tank and associated parts such as weirs, skimmers, etc.
 - b. Remove rust spots and paint.
 - c. Drain the tank far enough to check suction piping which may disconnect at elbows. This is indicated by lack of flow at the sludge collection drum or by evidence of lower sludge density than usual in the drum.
 - d. When the tank is drained, inspect the sludge collection drum seal for wear or damage. Drum seal wear may be indicated during operation by water bubbling up near the influent column in the sludge collection drum.
 - e. Whenever the tank is drained, inspect all underwater parts for adjustment and deterioration.
 5. Follow the written maintenance instructions for the Eimco drive unit and gearmotor.

SKIMMER ARM ASSEMBLY
MAINTENANCE AND ADJUSTMENT

M #4154

(8/74)

Reference Drawings: Skimmer Assembly

CHECK POINTS BEFORE START-UP

Observe skimmer rotation for one complete revolution. The skimmer must be level and at the proper elevation. All wipers or scrapers must contact their wiping surfaces. The baffles must also be concentric and provide a smooth and uninterrupted surface for the scraper.

Any deviation should result in adjustment as specified below.

UPKEEP AND MAINTENANCE

Once a week, check that the scum skimmer assembly is properly adjusted and working efficiently. This includes neoprene wipers and spring loaded hinges and is particularly critical when the skimmer passes the scum box.

SKIMMER ADJUSTMENT

1. Adjust the scum scraper for proper skimming depth, using the stop screws (collars and eye bolts).
2. Adjust the hinged skimmer (vertical hinged deflector) radially and longitudinally on the skimmer arm to maintain contact with the inner vertical skirt of the scum box. This is to minimize the loss of scum when the scraper goes up the scum box ramp.

OPERATING INSTRUCTIONS FOR
THE EIMCO PROCESS CLARIFIER
TYPE C2D-MSWOp. #7⁵⁵

(4/67)

PURPOSE

This machine has been designed as the final unit in the activated sludge process to continuously remove substantially all settleable solids from sewage or waste water after prior treatment and to discharge these solids or sludge in a highly active state for either further use in the process or disposal, while, at the same time, discharging an effluent with minimum settleable solids content.

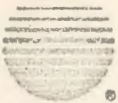
PRINCIPLE

This machine consists of rotating arms attached to a driving unit containing an integral bearing for supporting the mechanism with sludge removal ducting mounted on the arms, and with sludge discharge through the center of the mechanism, through a conduit concentric with a central influent inlet. The influent is introduced through the center column, entering from beneath the tank and is discharged through submerged ports directly under the sludge collection drum which communicates with the center column for sludge removal. The influent, upon exiting from the center column, has its entering velocity dissipated by means of feedwell surrounding the center column and supporting cage for the mechanism from whence the clarified effluent leaves the feedwell at its bottom in a uniform radial pattern and flows upward and outward to the effluent overflow weir.

The effluent overflows a V-notched weir extending around the outside of the tank into a collection launder and then flows to the effluent discharge pipe and thence to outfall.

Sufficient time has been allowed in the sizing of the mechanism so that the solids in the influent will settle out to the tank bottom along a flow path from center column to outer wall.

It is essential that the weirs be absolutely level in order that a steady and uniform liquid flow will be discharged at all points. Irregularity in this level will cause more flow at the low points, and the consequent increase in velocity will likely carry fine suspended solids into the effluent. V-notched weirs are used to minimize the effect of wind across the liquid surface which might produce unequal weir loading.



OPERATING INSTRUCTIONS FOR
THE EIMCO PROCESS CLARIFIER
TYPE C2D-MSW

Op. #7
2

56

A unique feature of the C2D-MSW Clarifier is its ability to rapidly and continuously remove the settled sludge and discharge it in a biologically active state for reintroduction into the process. It is economically necessary to return this activated sludge in as highly concentrated form as is consistent with the freshness required, the one being inversely proportional to the other. As such, it will probably be desirable to operate with a sludge blanket depth over the tank bottom of approximately two feet. This will not retain the sludge in the Clarifier more than two hours while allowing a much higher concentration than would be possible if the bottom were "swept clean".

Bottom sludge is continuously "sucked up" through sized orifices into a hollow duct collection arm and thence to the sludge control boxes which are fastened to the sludge collection drum by means of a series of suction pipes. Each of the suction pipes transports sludge from an annular area of the tank bottom thus allowing a controlled flow from each of these areas by means of the control box mounted on the sludge collection drum.

Sludge flow is induced by a head differential between the liquid levels in the sludge collection boxes and the main tank. The amount of this differential, and hence the amount of flow through any of the several sludge suction pipes, depends on the rate of flow through the sludge recirculation pumps (or gravity flow system). Each of the control boxes is provided with an adjustable orifice opening to the annular sludge collection drum. The purpose of the adjustable orifice is to control the flow from any annular area of the tank bottom in order that sludge of equal concentration is withdrawn from all sectors. Comparative samples should be taken from the individual control boxes and the gates adjusted so that individual samples are of equal density. This may be accomplished by comparing the percent solids produced by 30 minutes settlement in a 1,000 cc graduated cylinder. The adjustable orifice should be set at the largest opening as possible consistent with density equalization in order that head loss through the Clarifier be held to a minimum.

An adjustable continuous squeegee extends downward from the duct arm to scrape the tank bottom and prevent septic action of the sludge settled on the Clarifier tank floor. Grit and other foreign material are raked to the grit pocket at the center by this squeegee for periodic removal via the drain line from the Clarifier tank bottom.

OPERATING INSTRUCTIONS FOR
THE EIMCO PROCESS CLARIFIER
TYPE C2D-MSW

Sludge is withdrawn from the rotating collection drum through an opening in the center column which communicates with a sludge discharge pipe which is laid in the center of the influent pipe, at least through the Clarifier tank floor.

On some machines an adjustable variable speed drive motor has been provided to regulate the rotational speed of the collection arms. By changing the speed of rotation of the arms, it is possible to change the percent solids removed in sludge withdrawal, and in some instances, it is necessary to change the speed in order to prevent solids from being disturbed to the point where they pass over the effluent weir with the effluent. The optimum speed of the mechanism is that maximum which allows the sludge withdrawal in relation to arm speed to "keep up" with the sludge deposition without disturbing the sludge layer to the point of solids overflowing into the effluent.

STARTING PROCEDURE

It is assumed that the machine is properly installed and thoroughly lubricated, that all parts are in alignment and proper clearance exists between the mechanism and concrete at all points, that the bottom of the Clarifier has been screeded in, and that the arms have been adjusted so that there is proper clearance between squeegees and the tank bottom at all points throughout the complete revolution of the raking mechanism. There should be minimum clearance between each squeegee and the tank bottom at all times during a complete revolution of the raking mechanism. The clearance between the tank bottom and the squeegee should not exceed $1/4$ inch over an appreciable area.

The mechanism should be run before allowing any feed to enter the Clarifier and any discrepancies noted and corrected.

After operating the mechanism in a dry tank for several hours, flow may be admitted while the mechanism continues to operate. The tank should be completely filled before sludge recirculation is started. In this way, all sludge removal conduits will be filled, and a starting of the sludge recirculation system will then result in the complete sludge recirculation system being operative. The sludge control gates should be adjusted as outlined above after allowing a proper sludge blanket buildup and process equilibrium to be established.

NORMAL OPERATION

The Clarifier mechanism and the sludge pumps should be operated continuously in order that a sludge build-up will not occur to the point where it begins to overflow with the effluent. After the initial settings of the sludge control gates, no subsequent adjustments need be made unless the quantity and/or solids character of the influent changes noticeably. Such changes, if occurring, will probably be of a cyclic nature so that a record of necessary adjustments will be of value in anticipating future changes.

OPERATING PROBLEMS AND CORRECTIONS

Although provision has been made to minimize damage resulting from objects such as tools, rocks, rags and other foreign bodies being dropped into the tank, it is imperative that these objects be removed immediately before continuing the mechanism operation.

1. Sludge Suction Lines Become Plugged

If one of the sludge suction pipes appears to have become plugged due to a rag or other foreign material, it will be evidenced by a radical change in the level in its control box. It will be necessary to clear the line by reversing the flow with a high pressure water hose, or by unplugging with a flexible pipe rod. It may be necessary to drain the tank and find the reason for pluggage. At any rate, the obstruction should be located and removed before continuing with normal operation.

2. It is unlikely that the main sludge return line will become plugged; however, if it does, it will become evidenced by lack of recirculation flow, and the level in the sludge control boxes will become the same as that in the tank and no flow for sludge recirculation will be evidenced. It will be necessary to locate the problem and correct the situation.

3. Overload Alarm Sounds or Stops Motor

There may be an accumulation of sludge in the tank which has been gradually building up due to the sludge being discharged at an average rate less than the rate of

OPERATING INSTRUCTIONS FOR
THE EIMCO PROCESS CLARIFIER
TYPE C2D-MSW

introduction of solids with the feed. It will be necessary to increase the rate of recirculation in order to bring a sludge level to the appropriate value. Should the sludge load become so heavy that torque build-up occurs in the machine, the drive control will indicate a load sufficient to actuate the alarm, and the operator will then know that there is something causing an overload on the mechanism. If the overload continues to increase, the drive control will cut electrical power to the drive unit thereby stopping the mechanism rotation. Should this occur, it will be necessary to somehow remove the sludge from the tank. This is possible by draining the sludge, or draining the tank and sluicing out the sludge. It is also possible that some foreign object may be dropped into the tank accidentally. If this occurs, the mechanism may become overloaded and sound the alarm and stop. If this occurs, the object should be removed which is causing the obstruction and overload. It might be necessary to bypass the influent if the obstruction cannot be located rather quickly, as it may be necessary to drain the tank.

Also, if a very gradual increase in the torque load is noted on the drive control indicator, it is possible that grit or silt is being introduced with the influent. Since there is no way for this material to be removed normally, it will gradually overload the mechanism until the alarm sounds. It will then be necessary to remove the cause of this overload.

Usually, provision is made to insure that grit and silt are removed from the influent to a Clarifier of this construction and it is very unlikely that this kind of load will occur. In the event that an overload does occur due to any reason, it is necessary that:

DO NOT ATTEMPT TO KEEP ON RUNNING WHEN AN OVERLOAD IS INDICATED!

FIND THE TROUBLE AND CORRECT IT!

DO NOT START UP WITH A LOAD OF SLUDGE IN THE TANK!

DO NOT TAMPER WITH THE OVERLOAD ALARM SWITCH ADJUSTMENTS IN AN ATTEMPT TO KEEP THE MACHINE RUNNING UNDER OVERLOADED CONDITIONS!

ATTENTION

1. All bolts and nuts should be kept tight and original alignments and adjustments maintained. Inspection should be made at regular intervals.
2. Whenever possible, examine gear and all wearing parts periodically to determine whether excessive wear is taking place. Open all condensate drains on the drive unit periodically to prevent accumulation of moisture in the drive unit bearings.
3. Test the overload alarm at least once per week to make certain that the mechanism is protected.
4. If the power is shut off, or if the mechanism is stopped for any reason longer than an hour, bypass the flow until the machine is started again.
5. Keep the machine and surroundings clean and touch up all rust spots or other paint damage frequently.
6. The entire mechanism above and below water line should be inspected once every year and painted as required.

LUBRICATION

Lubrication instructions and recommended lubricants are attached in a form of a metal tag which is fastened in a conspicuous place on each drive unit. These lubrication instructions, when followed, will provide long life and trouble-free operation of the drive unit. A copy of these lubrication instructions are included with this booklet.

The process performance of the equipment referred to in these instructions is dependent upon many factors, including influent or feed quality and quantity, additives required, time, temperature, rates of change, sizing criteria used, operating conditions, etc. Therefore, unless a written Process Performance Warranty has been included, Envirotech cannot assume any liability or responsibility for performance results that the user of the equipment is expecting or has predicted.

Should assistance be required in the operation of the equipment, due to unexpected conditions, or should accessory or add on components or changes be required to meet your performance needs, Envirotech can, at additional cost, provide the service of experts to assist you in determining what actions must be taken.

Experienced Eimco engineers and service personnel are available to assist in the installation and start-up of your Eimco equipment. They offer you the benefits of their technical know-how and first-hand knowledge of the equipment, plus the backing of Eimco's entire engineering and research facilities.

They can instruct on proper operating and maintenance procedures, advise on trouble shooting and proven methods of assembly and, if necessary, supervise the entire installation and start-up, depending on your requirements.

If you should want such assistance, arrangements should be made at the earliest possible date, outlining the services required, giving the approximate duration of such services, and inquiring into the charges.

Write to the Eimco Division of Envirotech Corporation, PMD, Salt Lake City, Utah 84110, or your Eimco Representative. Refer to the address page.

PARTS LIST No. L-22214D254

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	 PART NUMBER	DRAWING NUMBER	DESCRIPTION	PATTERN NUMBER	*	REQ'N. NUMBER	REL. No.
1				22214D254	GENERAL ERECTION		19285		
2				22214C251	SUCTION DUCT SHOP ASSEMBLY				
6	1	2	22214D261A	22214D261	INFLUENT COLUMN	STL	2315		
8	1	2	22214C262A	22214C262	WALKWAY	STL	3192		
10	1	2	22214D263A	22214D263	PLATFORM	STL	809		
14	1	2	22214C264A	22214C264	FLOOR R SECTION	STL	80		
15	1	2	22214C264B	22214C264	FLOOR R SECTION	STL	19		
16	1	2	22214C264C	22214C264	FLOOR R SECTION	STL	92		
17	1	2	22214C264D	22214C264	FLOOR R SECTION	STL	35		
20	1	2	22214D265A	22214D265	CAGE - UPPER	STL	413		
21	1	2	22214D265B	22214D265	CAGE - LOWER	STL	963		
22	4	8	22214D265C	22214D265	CROSS BRACE	STL	74		
24	4	8	22214B266A	22214B266	TIE ROD	STL	42		
26	1	2	22214C267A	22214C267	HANDRAIL (WALKWAY)	ALUM	92		
27	1	2	22214C267B	22214C267	HANDRAIL (WALKWAY)	ALUM	90		
31	1	2	22214C268A	22214C268	HANDRAIL (PLATFORM)	ALUM	38		
32	1	2	22214C268B	22214C268	HANDRAIL (PLATFORM)	ALUM	38		

ALL CAPSCREWS ARE SAE GRADE 5 UNLESS OTHERWISE SPECIFIED * WEIGHT SHOWN IS TOTAL FOR ONE UNIT. LETTERS (A), (B) OR (C) ARE RECOMMENDED SPARE PART CODES. SEPIA FROM:

TITLE: GENERAL ERECTION - 80'-0 SQ.
TYPE-C2DC, CLARIFIER

REVISIONS:

BY CK'D BY DATE

ITEM 2 WAS 22214D251

KIV

3-5-75

SUB-PARTS LIST

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PAGE 1 OF 5

PARTS LIST No.

L-22214D254

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ORDER PAGE NO.

5-14

ORDER NUMBER

22214-02

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	 PART NUMBER	DRAWING NUMBER	DESCRIPTION	PATTERN NUMBER	*	REQ'N. NUMBER	REL. No.
38	1	2	22214D269A	22214D269	SLUDGE COLLECTION DRUM	STL		1283	
41	1	2	22214D270A	22214D270	DISCHARGE PIPE	STL		386	
42	1	2	22214D270B	22214D270	END PLATE	STL		7	
43	1	2	22214D270C	22214D270	WASHER	STL		6	
46	1	2	22214D273A	22214D273	FEEDWELL SECTION	STL		774	
47	2	4	22214D273B	22214D273	FEEDWELL SECTION	STL		1548	
48	1	2	22214D273C	22214D273	FEEDWELL SECTION	STL		774	
50	4	8	22214C274A	22214C274	SUPPORT BRACKET	STL		28	
51	4	8	22214C274B	22214C274	SUPPORT BRACKET	STL		28	
52	2	4	22214C274C	22214C274	FEEDWELL SUPPORT	STL		418	
54	2	4	22214B275A	22214B275	FEEDWELL SUPPORT	STL		356	
△	6	12	22214C276A	22214C276	SUCTION DUCT	STL		1584	△
△	2	4	22214C276B	22214C276	SUCTION DUCT (OUTER) (SHOP WELDED TO ARM)	STL		528	△
59	2	4	22214D277A	22214D277	COLLECTION ARM	STL		2562	
61	2	4	22214C296A	22214C296	SEAL RING	STL		116	
63	8	16	22214A297A	22214A297	SQUEEGEE	ST. STL		37	
64	1	2	22214B298A	22214B298	HANDLE WITH CHAIN	STL		10	
65	25	50	86999A	86999	CHAIN				
66	1	2	20799A	20799	NAME PLATE	ZINC		7	
68	6	12	85729A	85729	SPLICE LOCK	ALUM		1	

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SEPIA FROM:

TITLE:

GENERAL ERECTION
TYPE-C2DC, CLARIFIER

80'-0" SQ.

REVISIONS:

REVISED SUCTION DUCT

BY

CK'D BY

DATE

ALS

M.

5-5-75

SUB-PARTS LIST

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2 OF 5

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PAGE
NO.

5-15

ORDER NUMBER

22214-02

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	 PART NUMBER	DRAWING NUMBER	DESCRIPTION	PATTERN NUMBER	#	REQ'N. NUMBER	REL. No.
72	4	8	85949AB	85949	STUD	STL	-		
74	2	4	86924A	86924	SEAL BACK UP RING	STL	24		
76	1	2	86925A	86925	SEAL	NEOP.	9		
79	8	16	86929A	86929	SHAFT HOLDER	STL	16		
81	8	16	86928A	86928	GATE HOLDER	STL	16		
83	8	16	87256A	87256	CONTROL GATE	PVC	8		
85	8	16	86926A	86926	INDICATOR	ST. STL	8		
87	8	16	47230A	47230	SHAFT	ST. STL	24		
89	4	8			COUPLING - 6"Ø SCH. 40 (PVC)				
90	12	24			PIPE - 6"Ø SCH. 40 PVC TYPE II (PVC) (SUPPLIED IN 21'-0" LENGTHS)				
92	16	32	47124A	47124	ELBOW	ST. STL			
93	32	64	86540A	86540	O-RING	NEOP.			
95	8	16	87131D	87131	MULTIFLEX CONNECTOR	NEOP.			
97	16	32	46713BM	46713	CLAMP-HOSE	ST. STL			
99	25	56	85682R	85682	U-BOLT	GALV. STL			
100	25	56	86751B	86751	CHANNEL CLAMP	ST. STL			
102	2	4	87451A	87451	FLOATING PLATE				
103	2	4	87452A	87452	SLIDE PLATE				

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TITLE: GENERAL ERECTION 80'-0" SQ.
TYPE-C2DC, CLARIFIER

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SUB-PARTS LIST

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FOR ORDER 2

PAGE 3 OF 5

PARTS LIST No.
L-22214D254CHECKED BY
SGHDATE
12-18-74

PREPARED BY DATE

CK'D BY

DATE

ORDER
PAGE NO. 5-16ORDER NUMBER
22214-02

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	 PART NUMBER	DRAWING NUMBER	DESCRIPTION	PATTERN NUMBER	*	REQ'N. NUMBER	REL. No.
106	1	2			PACKING - 5/8" SQ. x 18'-0" (GARLOCK-8733)				
110	8	18			BOLT - HEX HD. 7/8-9NC x 2 (A325 STL)				
112	2	5			BOLT - HEX HD. 3/4-10NC x 3 (A325 STL)				
114	8	18			BOLT - HEX HD. 3/4-10NC x 2 3/4 (A325 STL)				
116	8	18			BOLT - HEX HD. 3/4-10NC x 2 1/4 (A325 STL)				
118	8	18			BOLT - HEX HD. 3/4-10NC x 1 3/4 (A325 STL)				
120	8	18			NUT - 7/8-9NC - HEX (A325 STL)				
122	26	59			NUT - 3/4-10NC - HEX (A325 STL)				
124	32	70			CAPSCREW - HEX HD. 3/4-10NC x 1 3/4 (ST. STL)				
126	32	70			NUT - 3/4-10NC - HEX (ST. STL)				
128	80	176			CAPSCREW - HEX HD. 3/8-16NC x 1 1/2 (ST. STL)				
130	80	176			NUT - 3/8-16NC - HEX (ST. STL)				
132	80	176			WASHER - 3/8" DIA. STD. (ST. STL)				
134	8	18			CAPSCREW - HEX HD. 5/8-11NC x 1 3/4 (STL)				

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TITLE: GENERAL ERECTION - 80'-0" SQ.
TYPE - C2DC, CLARIFIER

REVISIONS:

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SUB-PARTS LIST

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11-14-74

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UNITS REQ'D.
FOR ORDER 2

PAGE 4 OF 5 PARTS LIST No. L-22214D254

CHECKED BY
SGWDATE
12-18-74

PREPARED BY DATE

CK'D BY

DATE

ORDER
PAGE NO. 5-17ORDER NUMBER
22214-02

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	 PART NUMBER	DRAWING NUMBER	DESCRIPTION	PATTERN NUMBER	#	REQ'N. NUMBER	REL. No.
36	8	32	85102A	85102	GREASE FITTING	STL	-		
38	6	24	85268A	85268	BEARING CLAMP	STL	4		
40	1	4	86147A	86147	WHEEL	MICARTA			
42	1	4	86621A	86621	TENSIONER SPRING	ST. STL	17		
44	2	8	86622A	86622	WASHER	RYERTEX	~		
46	1	4	86624A	86624	WHEEL AXLE	STL	5		
48	2	8	13477A346A	13477A346	BEARING SUPPORT	STL			
49	2	8	13477A346B	13477A346	BEARING SUPPORT	STL			
51	1	4	13477A349A	13477A349	SPRING BRACKET	STL			
53	2	8	13477A351A	13477A351	SPRING RETAINER	STL			
55	4	20			CAPSCREW-HEX HD. 3/4-10NC x 1 1/2	STL			
56	2	10			CAPSCREW-HEX HD. 3/4-10NC x 2	STL			
57	16	70			CAPSCREW-HEX HD. 3/4-10NC x 4 1/2	STL			
59	8	35			CAPSCREW-HEX HD. 5/8-11NC x 2	STL			
60	14	61			CAPSCREW-HEX HD. 5/8-11NC x 1 3/4	STL			
61	2	10			CAPSCREW-RD. HD. 5/8-11NC x 1 1/2	STL			
62	4	18			CAPSCREW-HEX HD. 1/2-13NC x 2 3/4	STL			
63	18	80			CAPSCREW-HEX HD. 1/2-13NC x 1 1/4	S. STL			
65	22	100			NUT-HEX HD. 3/4-10NC	STL			
66	1	4			COTTER PIN - 1/8 x 2 1/2	STL			
67	24	106			NUT-HEX HD. 5/8-11NC	STL			
68	2	8			WASHER - 3/4" Ø STD.	STL			
69	4	18			NUT-HEX HD. 1/2-13NC	STL			
70	18	80			NUT-HEX HD. 1/2-13NC	ST. STL			

ALL CAPSCREWS ARE SAE GRADE 5 UNLESS OTHERWISE SPECIFIED. * WEIGHT SHOWN IS TOTAL FOR ONE UNIT. LETTERS (A), (B) OR (C) ARE RECOMMENDED SPARE PART CODES. SEPIA FROM:

TITLE:

ERECTION-CORNER RAKE MECH.
TYPE-C2DC, CLARIFIER

REVISIONS:

BY

CK'D BY

DATE

SUB-PARTS LIST

PREPARED BY
ALSDATE
11-12-74When ordering parts specify Type of Equipment, Order No.,
Serial No., Part No., and Description, per this parts list.UNITS REQ'D.
FOR ORDER 4

PAGE 2 OF 2

PARTS LIST No.
L-22214D253CHECKED BY
SGWDATE
12-18-74

PREPARED BY

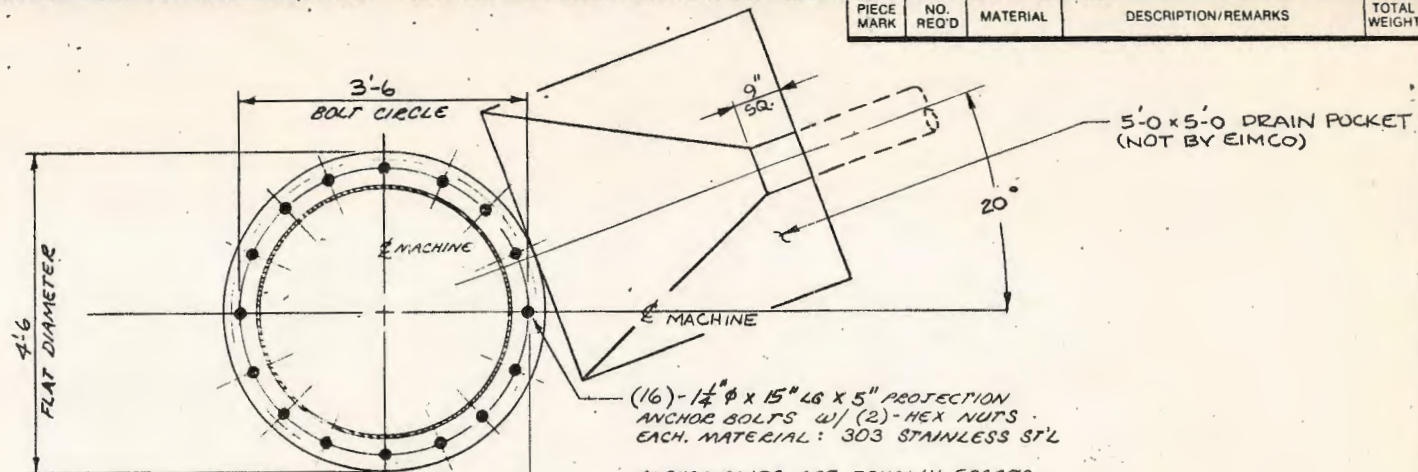
DATE

CK'D BY

DATE

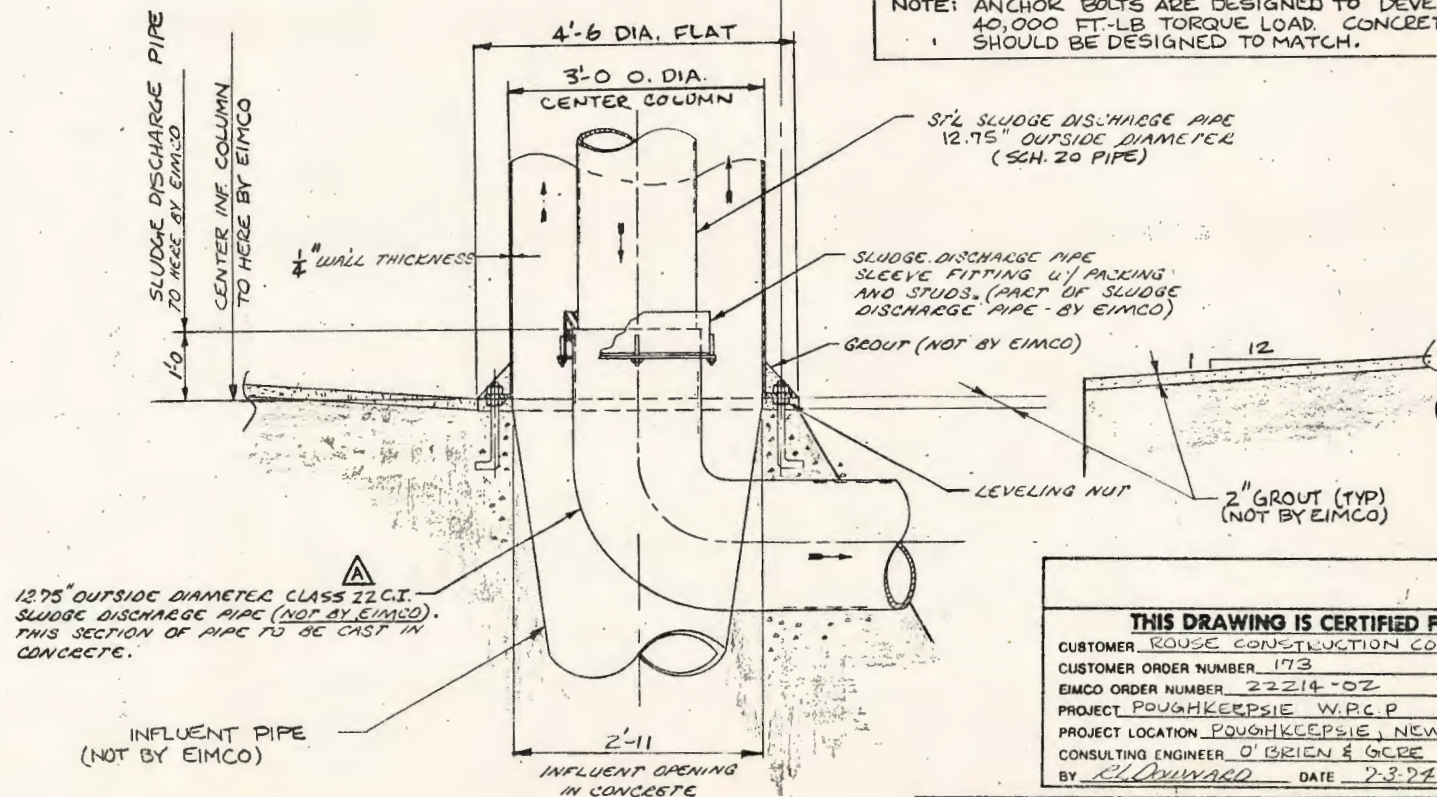
ORDER
PAGE NO. 5-13ORDER NUMBER
22214-02

PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/REMARKS	TOTAL WEIGHT
------------	-----------	----------	---------------------	--------------



ANCHOR BOLTS ARE EQUALLY SPACED. LOCATE TWO BOLTS ON WALKWAY CENTER LINE.

NOTE: ANCHOR BOLTS ARE DESIGNED TO DEVELOPE 40,000 FT.-LB TORQUE LOAD. CONCRETE SHOULD BE DESIGNED TO MATCH.



THIS DRAWING IS CERTIFIED FOR	
CUSTOMER <u>ROUSE CONSTRUCTION CORP.</u>	
CUSTOMER ORDER NUMBER <u>173</u>	
EIMCO ORDER NUMBER <u>22214-02</u>	
PROJECT <u>POUGHKEEPSIE W.P.C.P</u>	
PROJECT LOCATION <u>POUGHKEEPSIE, NEW YORK</u>	
CONSULTING ENGINEER <u>O'BRIEN & GORE</u>	
BY <u>R. L. WARD</u>	DATE <u>2-3-74</u> EIMCO



EIMCO PROCESSING MACHINERY DIVISION-ENVIROTECH CORPORATION-Salt Lake City, Utah

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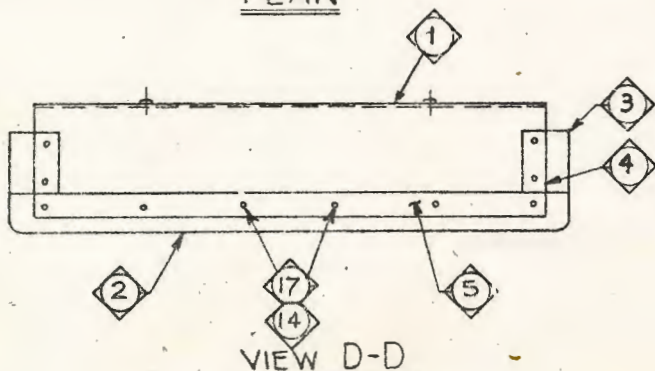
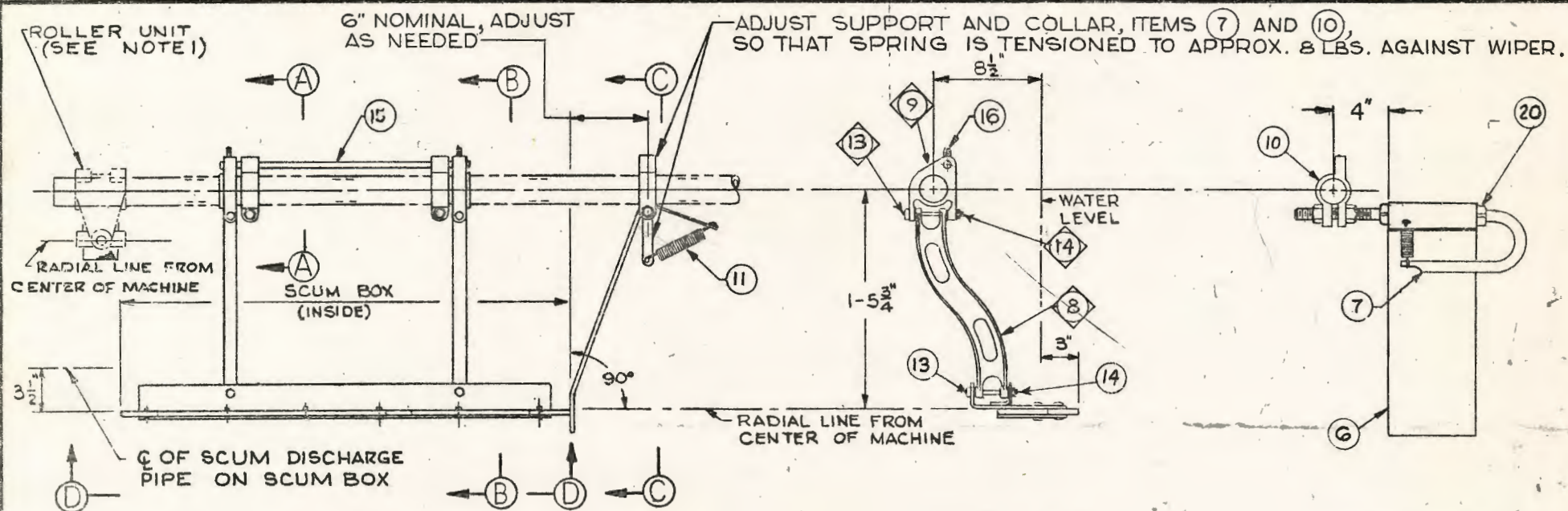
HOLD FRACTIONAL MACHINERY DIMENSIONS TO $\pm 1/8"$

DO NOT SCALE PRINTS
DATE <u>6/20/74</u>
DRAWN <u>LWC</u>
CHECKED <u>TWP</u>
APPR <u>RLO</u>

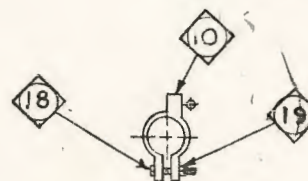
**C2DC CLARIFIER
CENTER COLUMN MOUNTING
ARRANGEMENT**

02	REV
DWG NO. 22214C205	

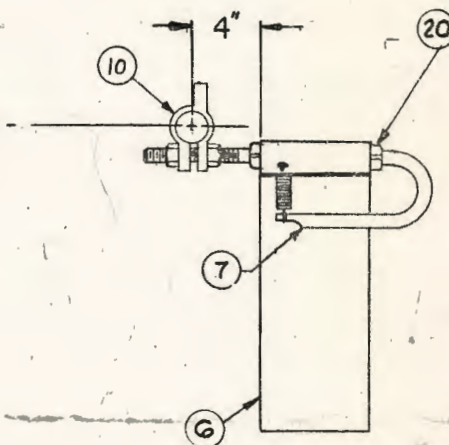
CHANGED DISCHARGE PIPE MAT'L PER CUSTOMER REQ.	LWC	RLO	9-30-74
REVISION	BY	CHECKED	DATE



SECTION B-B



SECTION C-C



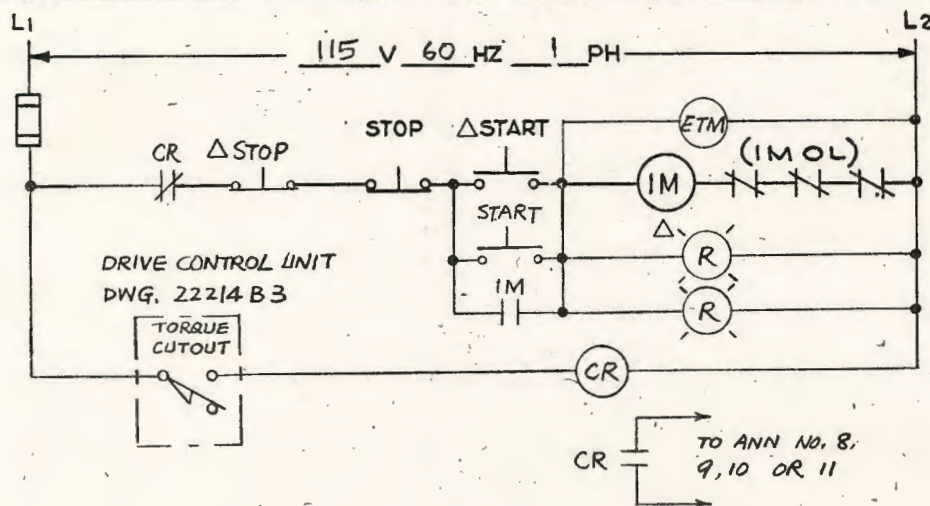
PART LIST	
L 42700-1	(20 LG UNIT)
L 42700-2	(30 LG UNIT)
L 42700-3	(40 LG UNIT)
L 42700-4	(50 LG UNIT)
L 42700-5	(60 LG UNIT)

F	3629	11-5-73
E	2755	2-2-72
D	2626	10-26-71
C	05	11-17-69
B	446	5-15-68
A	7	1-11-67
D/P		DATE
REVISION		

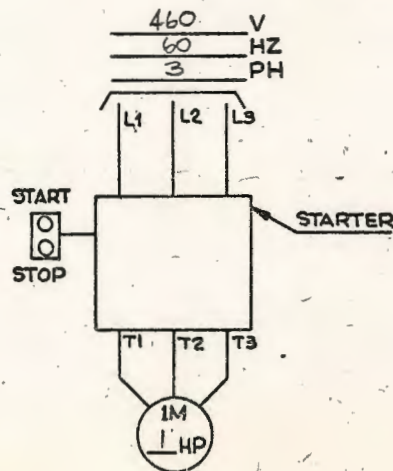
NOTE:

1. ROLLER UNIT PART NO L46378, IS USED ONLY WHEN REQUIRED. REFER TO JOB G.A. DRAWING.
2. DENOTES SHOP ASSEMBLED

THE EIMCO CORPORATION		Salt Lake City, Utah	
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DO NOT SCALE PRINTS	DATE 10-15-66	ORDER No.	
DRWN T.T.M.	CHK'D Y/C	DATE ISSUED	
APPR. (signature)			
SKIMMING DEVICE ASSEMBLY FOR SQUARE SCUM BOXES		DRAWING No.	42700
		REV	F



Δ LOCATED AT GRAPHIC PANEL



NOTES:

1. WIRING AND DISCONNECT SWITCHES SHALL BE FURNISHED BY CUSTOMER AND SHALL COMPLY WITH LOCAL AND NATIONAL ELECTRICAL AND SAFETY CODES.
2. POWER REQUIREMENTS:

DRIVE UNIT	460 V	60 HZ	3 PH
CONTROL CIRCUIT	115 V	60 HZ	1 PH
ALARM UNIT	— V	— HZ	— PH
3. EQUIPMENT FURNISHED BY EIMCO:

DRIVE MOTOR	YES ☒	NO ☐
MOTOR STARTERS*	YES ☐	NO ☒
PUSH BUTTONS	YES ☐	NO ☒
ALARM UNIT	YES ☐	NO ☒

THIS DRAWING IS CERTIFIED FOR

CUSTOMER ROUSE CONSTRUCTION CO.
 CUSTOMER ORDER NUMBER 173
 EIMCO ORDER NUMBER 22214-01/02
 PROJECT POUGHKEEPSIE WATER POLL. CONTROL PL.
 PROJECT LOCATION POUGHKEEPSIE, NEW YORK
 CONSULTING ENGINEER O'BRIEN & GERE
 BY R. Downman DATE 2-3-84 EIMCO

SEPIA FROM 47043

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Salt Lake City, Utah

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HOLD FRACTIONAL MACHINED DIMENSIONS TO $\pm 1/64"$

DO NOT SCALE PRINTS
DATE 6/17/74
DR'WN LWC
CHK'D TWP
APPR. RLD

TYPICAL WIRING DIAGRAM
FOR
SINGLE MOTOR DRIVE

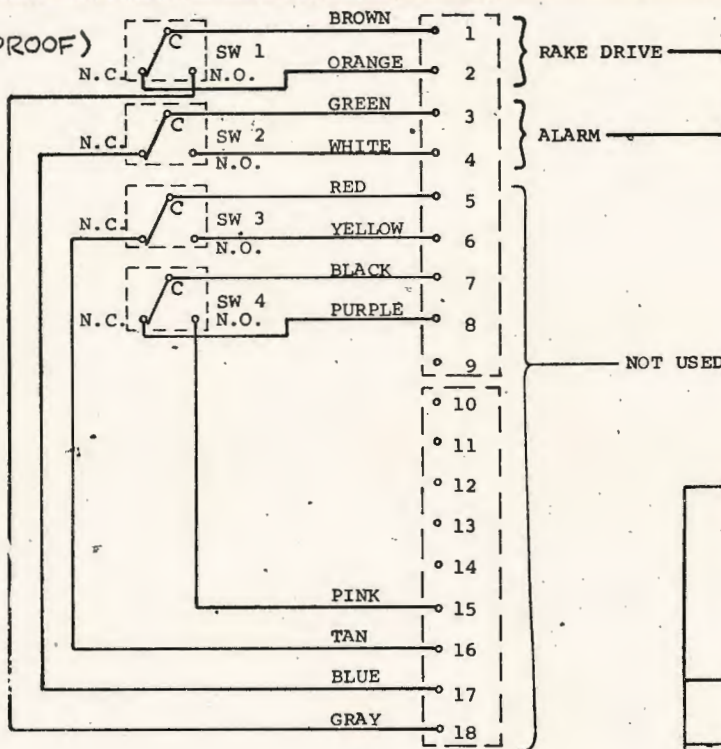
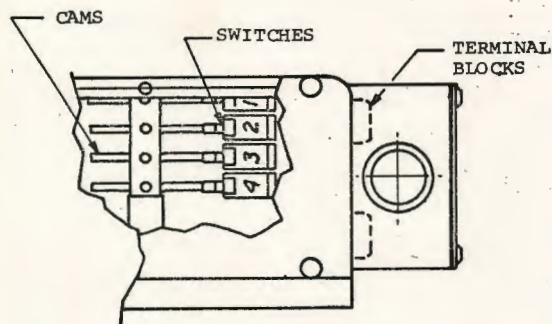
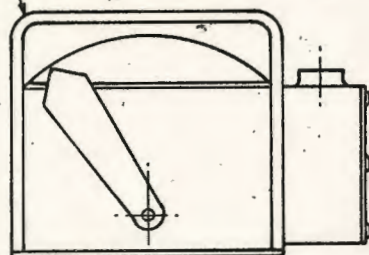
01/02
DATE ISSUED
22214BZ
REV 1

REVISED PER CONTRACT DWG.

JLS SDR 9-25-74

BY CH'K'D DATE No.

DRIVE CONTROL
(RIGHT HAND ILLUSTRATED)
(CADMIUM PLATED, WEATHERPROOF)



RAKE DRIVE

ALARM

SEE DRAWING 22214B2

NOT USED

NOTE:

CUTOUT SWITCH: (LIMIT SWITCH NUMBER 1) OPENS ON INCREASING LOAD, DE-ENERGIZING RAKE DRIVE UNIT MOTOR STARTER, STOPPING MECHANISM. THIS (NO. 1) SWITCH IS FACTORY SET: THIS SETTING SHOULD NOT BE CHANGED WITHOUT PRIOR AUTHORIZATION BY EIMCO.

WITHOUT LIFT OR WITH MANUAL LIFT..	☒ YES	☐ NO
SEMI-AUTOMATIC LIFT.....	☐	☒
AUTOMATIC LIFT	☐	☒

THIS DRAWING IS CERTIFIED FOR

CUSTOMER ROUSE CONSTRUCTION CO.
CUSTOMER ORDER NUMBER 173
EIMCO ORDER NUMBER 22214-01/02
PROJECT POUGHKEEPSIE WATER POLL. CONTROL PL.
PROJECT LOCATION POUGHKEEPSIE, NEW YORK
CONSULTING ENGINEER O'BRIEN & GERE
BY EL DOWNARD DATE 2-3-74 EIMCO

SEPIA FROM 47699



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HOLD FRACTIONAL MACHINED DIMENSIONS TO $\pm 1/64"$

DO NOT SCALE PRINTS
DATE <u>6/17/74</u>
DRAWN <u>LWC</u>
CHECK'D <u>TWD</u>
APPR. <u>ELD</u>

DRIVE CONTROL
GENERAL INSTRUCTIONS & WIRING DIAGRAM

01/02

DWG. NO. 22214B3

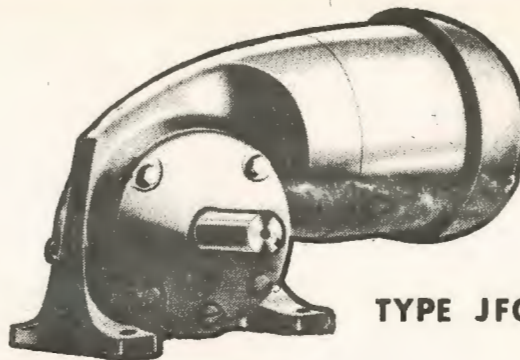
REV.

REVISION

BY CHECKED DATE



U.S. RIGHT ANGLE SYNCROGEAR INSTALLATION & MAINTENANCE



TYPE JFGW

The U. S. Right Angle SYNCROGEAR employs Worm Gears in single reduction units. In right angle combination (double reduction) both Worm and Helical steel gears are used; the Helical gear train is the second reduction. The title picture above illustrates the single reduction type JFGW. Figure 1 at the right, illustrates right angle combination, JFGWB.

Proper maintenance and careful attention to the use of the correct type and amount of lubricant will assure longest life. **YOUR UNIT IS SHIPPED WITHOUT OIL.** Always fill it to the proper oil level before operation. Refer to the Oil Selection Chart on Page 3.



FIGURE 1

Each unit has a nameplate on it specifying the type of oil to be used depending upon ambient (surrounding) temperature. After the first week of operation change the oil. Some bronze flakes will appear which indicates normal wear-in of the bronze worm wheel.

MOUNTING-OIL LEVEL When your unit is furnished as universal mounting, it contains seals at both the input and output shafts of the gear box. It may be mounted and operated in any position providing the proper oil level is maintained. Use plug on horizontal centerline of gear case for oil level location, and see Figure 2 for location of Breather Plug. Once the unit has been operated in one position for more than an hour or two, it should not be used for other mounting positions.

Units furnished for a specific mounting position, and which are not designated universal, will have tags on the gear box showing oil level and breather location.

Check oil level often enough to assure proper level is always maintained.

BREATHING PLUG LOCATION

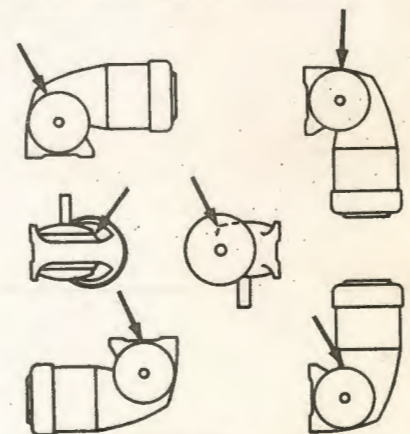


FIGURE 2



BEARING LUBRICATION In most units, bearings located in the motor end are prelubricated for life and require no relubrication. Other bearings are located inside the SYNCROGEAR frame and are lubricated by the oil bath.

BREATHING PLUG Always be sure to install the breather plug before operating. See the instruction tag attached to the unit or Figure 2 for proper location. The breather relieves pressure build-up in the oil chamber due to normal heating during operation. (Oil bath temperature may approach 200° F and be within safe limit.) Clean the breather often enough to be sure it does not become clogged.

CONDENSATE DRAINS Units furnished for universal mounting have condensate drain holes spaced around the gear frame housing nearest the motor, and sometimes around the rear motor bracket. After the unit is mounted, remove the small plastic plug in the drain hole in the lowest position on the gear frame. The plastic plug in the rear motor bracket is accessible by removing the fan cover guard. (Replace the fan cover guard carefully before operating.)

ELECTRICAL CONNECTION DIAGRAMS See Page 4

TYPICAL FRAME & TYPE DATA			
MOTOR FRAME SIZE		MOTOR SUFFIX ①	GEAR FRAME SIZE
56		- 4	- 6
MOTOR FRAME TYPE		GEAR FRAME TYPE	
JF		GW	
HF, HV, RF, RV JF, JV, TF, TV JFN, JVN, TFN, TVN EF, EV, LF, LV EFN, EVN, LFN, LVN	OPEN DRIP PROOF T.E.F.C. ENCLOSED NON-VENT EXPLOSIONPROOF FAN COOLED EXPLOSIONPROOF NON-VENTILATED	GW GWV GWB GWO	SINGLE REDUCTION WORM GEAR DOUBLE REDUCTION WORM & HELICAL GEARS SINGLE REDUCTION WORM GEAR REDUCERS
① Suffix denotes certain Electro-Mechanical specifications relative to the motor winding.			

OIL CAPACITY AND TYPES OF REDUCTION - FOR U. S. RIGHT ANGLE SYNCROGEARS			
FRAME SIZE	GEAR FRAME TYPES	NUMBER OF REDUCTIONS	APPROXIMATE OIL CAPACITY IN U.S. QTS.
1	GW, GWO, GWV	1	3/4
6	GW, GWO, GWV	1	1
6	GWB	2	1-1/4
10	GWB	2	2
11	GW, GWV	1	2

RECOMMENDED GREASES

Greases of different soap bases (lithium, sodium, etc.) may not be compatible when mixed. Lubriflush prevents such intermixing by purging the bearing of old grease without the necessity of motor disassembly.

MANUFACTURER		TRADE NAME OF GREASE	AREA
American Oil Co.	(L)	Amolith Grease #2	E, MW, W
Atlantic Div., Atlantic Richfield	(L)	Atlantic Lubricant #54	East
Cities Service Oil Co.	(L)	Trojan Grease H-2	E, MW
Continental Oil Co.	(L)	Conoco EP Conolith #2	S, MW, W
Famous Lubricants	(L)	Orange Industrial Lubricant 390	E, MW, W
Fiske Bros. Refining Co.	(Z)	Ball Bearing Lubriplate	National
Gulf Oil Corp.	(S)	Gulf Precision Grease #2	National
E. F. Houghton & Co.	(L)	Cosmolube #2	National
Humble Oil & Refining Co.	(S)	Andok B	National
Jet-Lube, Incorporated	(L)	CB-2	National
Keystone Lubricating Co.	(S)	Keystone Grease #44	E, MW, W
MacMillan Petroleum Co.	(L)	All Purpose Grease #2-Code B02	E, MW, W
Master Lubricants	(S)	Lubriko M-32	E, MW, W
Mobil Oil Co.	(L)	Mobilux Grease #2	MW, W
New York & New Jersey Lubricant Co.	(S)	5 #58	East
Phillips Petroleum Co.	(L)	Philips 1B & RB #2	E, MW, W, S
Pure Oil Co.	(L)	Poco HT Grease 2 EP	E, MW, S
Richfield Oil Corp.	(L)	Rocolube #2	West
Shell Oil Co.	(L)	Alvania #2	National
Sinclair Refining Co.	(L)	Litholine Industrial #2	E, MW, S
Socony-Mobil Oil Co.	(L)	Mobilux #2	E, MW
Standard Oil of California	(S)	Industrial Grease Medium	E, MW, W
Standard Oil of Ohio	(L)	Mobilux #2	South
Standard Oil Company (Kentucky)	(L)	Sahitran 2	MW
Sun Oil Co.	(L)	Prestige #42	E, MW
Sunray D-X Oil Company	(L)	#646 D-X All Purpose Grease	S, MW
Texaco, Inc.	(L)	Multifak #2	National
Tidewater Oil Co.	(L)	Veedol All Purpose Grease	E, MW, W
Tower Oil Company	(L)	Grezaal R	Midwest
Union Oil Co.	(L)	Unoba #2	West
Valvoline Oil Co.	(L)	Valcoline Lithium Base Grease #2	E, MW, W
Warren Refining & Chemical Co.	(B)	Plastitube #1	E, MW, W
Wilshire Oil Company of California	(L)	Gulf Precision Grease #2	West

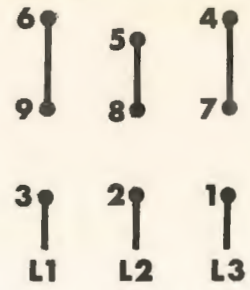
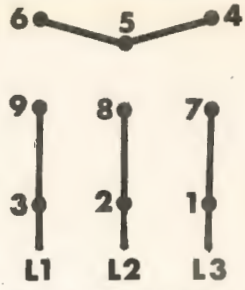
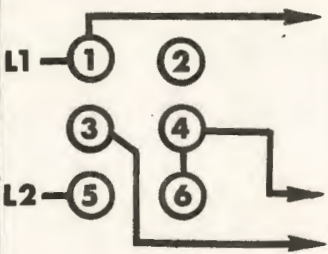
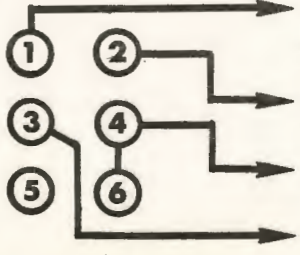
(L) — Lithium basegrease, (S) — Sodium basegrease, (Z) — Zinc basegrease, (B) — Bentonite basegrease

RECOMMENDED WORM GEAR OILS

FIRST REFER TO LUBRICATION INSTRUCTION PLATE FOR PROPER VISCOSITY OF OIL REQUIRED FOR OPERATING TEMPERATURE
SECOND SELECT ONE OF MANY BANDS LISTED

MANUFACTURER	70-100 S.S.U. @ 210°F.	125-150 S.S.U. @ 210°F.	AREA
	AGMA #5EP	AGMA #7EP	
American Oil Co.	Amogear Compound #3	Amogear Compound #5	E, MW
Atlantic Div., Atlantic Richfield	Premier Gear Oil #13	Premier Gear Oil #15	E, S, MW
Chevron Oil Co.	Chevron Gear Compound #70	Chevron Gear Compound #140	National
Cities Service Oil Co.	Trojan Compound L-2	Trojan Compound L-3X	Midwest
Continental Oil Co.	Conoco Mil Gear L100	Conoco Mil Gear L136	National
E. F. Houghton & Co.	Sp. M.E. Worm Gear Oil 90	Sp. M.E. Worm Gear Oil 140	National
Humble Oil & Refining Co.	Pen-O-Led EP #3	Pen-O-Led EP #5	National
Keystone Lubricating Co.	S.R. No. 3	S.R. No. 1	National
Mobil Oil Co.	Mobil Compound DD	Mobil Compound FF	National
New York & New Jersey Lubricant Co.	Non-Fluid Oil #S-581	Non-Fluid Oil #S-583	E, MW, W
Phillips Petroleum Co.	Philube 1LB Gear Oil 90	Philube 1LB Gear Oil 140	Midwest
Pure Oil Co.	Poco PB 8	Poco PB 12	E, MW
Richfield Div., Atlantic Richfield	Richfield Gear Oil SAE 90	Richfield Gear Oil SAE 140	W, S, MW
Shell Oil Co.	Shell Macoma 72	Shell Macoma 76	National
Sinclair Refining Co.	Peppant EP No. 3	Pennant EP No. 6	E, MW, W
Socony-Mobil Oil Co.	Mobil Compound DD	Mobil Compound FF	National
Standard Oil of California	Chevron Gear Compound #70	Chevron Gear Compound #140	West
Standard Oil Company (Kentucky)	Mobil Compound DD	Mobil Compound FF	South
Standard Oil of Ohio	Gearep 90	Gearep 140	MW
Sun Oil Co.	Sunep 90	Sunep 150	E, MW
Sunray DX Oil Company	774 D-X Sioux #4	777 D-X Sioux #7	E, MW
Texaco, Inc.	Texaco Meropa 2	Texaco Meropa 5	National
Tidewater Oil Co.	Veedol Superfilm 90	Veedol Superfilm 140	E, MW, W
Union Oil Co.	Red Line Worm 90	Red Line Worm 140	West
Wilshire Oil Co. of Calif.	EF Lubricant #75	EP Lubricant #145	West

The recommended lubricants listed above are compounded worm gear lubricants containing non-corrosive extreme pressure additives. DO NOT USE lubricants containing sulfur and/or chlorine extreme pressure additives which are corrosive to worm gear bronze. The oil bath in worm gear cases may reach a temperature of 200°F (94°C) without alarm.

<u>3 PHASE</u> TO REVERSE ROTATION, INTERCHANGE ANY TWO LINE CONNECTIONS	 HIGH VOLTAGE	 LOW VOLTAGE	
<u>1 PHASE</u> FOR UNITS WITH TERMINAL BOARD IN MOTOR (TO REVERSE ROTATION, INTERCHANGE RED & BLACK LEADS)	L1 TERMINAL 1 ——— BLUE TERMINAL 3 ——— RED GREEN WHITE L2 TERMINAL 4 ——— YELLOW TERMINAL 5 ——— BLACK HIGH VOLTAGE	TERMINAL 1 ——— BLUE TERMINAL 3 ——— RED GREEN TERMINAL 4 ——— WHITE YELLOW TERMINAL 5 ——— BLACK LOW VOLTAGE	
<u>1 PHASE</u> FOR UNITS WITH COLOR CODED LEADS & NO TERMINAL BOARD (TO REVERSE ROTATION, INTERCHANGE RED & BLACK LEADS)	L1 ——— BLUE RED GREEN WHITE L2 ——— YELLOW BLACK HIGH VOLTAGE	L1 ——— BLUE RED GREEN WHITE L2 ——— YELLOW BLACK LOW VOLTAGE	
<u>1 PHASE</u> REVERSING AT STANDSTILL HIGH VOLTAGE	ALLEN BRADLEY 350A DRUM SWITCH 	UNITS WITHOUT TERMINAL BOARD OR BLUE RED GREEN WHITE YELLOW BLACK	UNITS WITH MOTOR TERMINAL BOARD T1 ——— BLUE RED T3 ——— GREEN WHITE YELLOW T4 ——— T5 ——— BLACK
<u>1 PHASE</u> REVERSING AT STANDSTILL LOW VOLTAGE	ALLEN BRADLEY 350A DRUM SWITCH 	UNITS WITHOUT TERMINAL BOARD OR BLUE GREEN RED WHITE YELLOW BLACK	UNITS WITH MOTOR TERMINAL BOARD T1 ——— BLUE GREEN RED T3 ——— WHITE YELLOW T4 ——— T5 ——— BLACK

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	PART NUMBER	DRAWING NUMBER	DESCRIPTION	PATTERN NUMBER	*	REQ'N. NUMBER	REL. No.
1				22214D253	ERECTION		643		
4	1	4	22214C278A	22214C278	END FRAME	STL	193		
6	1	4	22214C279A	22214C279	END FRAME DIAGONAL	STL	10		
7	1	4	22214C279B	22214C279	" " "	STL	23		
9	2	8	22214C285A	22214C285	CORNER ARM DIAGONAL	STL	88		
10	3	12	22214C285B	22214C285	CORNER ARM TIE	STL	126		
12	1	4	22214B286A	22214B286	CORNER RAKE BLADE	304 S. STL.	58		
14	1	4	22214B287A	22214B287	CORNER BLADE SQUEEGEE	ST. STL.	5		
15	1	4	22214B287B	22214B287	CORNER BLADE SQUEEGEE	ST. STL.	4		
16	1	4	22214B288A	22214B288	WHEEL SUPPORT UPPER	STL	8		
17	1	4	22214B288B	22214B288	WHEEL SUPPORT LOWER	STL	6		
19	2	8	22214B289A	22214B289	CORNER BLADE SHAFT	C.F. STL	16		
21	2	8	22214B290A	22214B290	BEARING CLAMP & STOP	STL	4		
23	2	8	22214B291A	22214B291	BRACE SUPPORT	STL	8		
25	1	4	22214B292A	22214B292	PIVOT ARM SHAFT	C.R. STL	32		
26	1	4	22214B293A	22214B293	PIVOT ARM SHAFT	C.R. STL	28		
28	1	4	22214B294A	22214B294	TENSIONER	STL	5		
30	1	4	22214A295A	22214A295	SPACER	STL	3		
32	8	32	81465A	81465	BEARING	RYERTEX	-		

ALL DIMENSIONS ARE SAE GRADE 5 UNLESS OTHERWISE SPECIFIED. * WEIGHT SHOWN IS TOTAL FOR ONE UNIT. LETTERS (A), (B) OR (C) ARE RECOMMENDED SPARE PART CODES. SEPIA FROM:

TITLE: ERECTION - CORNER RAKE MECH.
TYPE-C2DC, CLARIFIER

REVISIONS:

BY CK'D BY DATE

SUB-PARTS LIST

PREPARED BY
ALSDATE
11-12-74

When ordering parts specify Type of Equipment, Order No., Serial No., Part No., and Description, per this parts list.

UNITS REQ'D.
FOR ORDER 4

PAGE 1 OF 2

PARTS LIST No.
L-22214D253CHECKED BY
SGWDATE
12-18-74

PREPARED BY DATE

CK'D BY

DATE

ORDER
PAGE NO. 5-12ORDER NUMBER
22214-02

CERTIFIED PRINT

FROM	PHILA. MISS	VIA	MEMPHIS -
	OUR ORDER NO.		CUSTOMER ORDER NO.
	F067922		F97382 RG

MAIL B/L	SHIPPING CHARGES	B/C	W/S	SALES TAX	REL	EXEM	ASSEMBLY NO.				
	PREPAID		X		X						
DATE SHIPPED		PT. SHIP	TAX CODE	EXPORT	C.C.	CODED BY	EXT. BY	AUDIT BY	RNG	CREDIT O.K.	O.K. FILE

SHIP
TO

EIMCO CORPORATION
401 SOUTH 7TH WEST PLANT 2 GATE 4
SALT LAKE CITY 8
UTAH 84110

MARKS

F97382RG SO#222 14-02

BILL
TO

EIMCO CORPORATION
PO BOX 300
SALT LAKE CITY 8
UTAH 84110



**U.S. ELECTRICAL MOTORS DIVISION
EMERSON ELECTRIC CO.**



125 OLD GATE LANE P.O. BOX 2058
MILFORD, CT. 06460 TERMINAL ANNEX
LOS ANGELES, CALIF. 90054

THIS DATA IS SENT TO YOU AS REQUESTED.
FOR ASSISTANCE WITH THIS DATA OR THE
APPLICATION OF THE MOTORS, PLEASE CALL YOUR
U.S. MOTORS OFFICE OR DISTRIBUTOR.

**THANK YOU FOR YOUR ORDER AND THIS
OPPORTUNITY OF SERVING YOU.**

U.S. ELECTRICAL MOTORS

THIS PRINT IS CORRECT FOR YOUR ORDER
MARKETING SERVICES/PRINT DEPARTMENT

REMARKS

MOD. PROD. I.D.										M	31054N					W	1962W					R	2085R					G	1279G					C						A						A					
QUAN. ORD.	HORSE POWER		VD	MOTOR	FRAME ALPHA		SUF	SYN	PHASE CYCLES		VOLTS		SPEED HIGH		LOW	POLES	TYPE CODE	TYPE AND DESCRIPTION		LIST PRICE		MULTIPLIER		ACCOUNT NO.		ITEM																									
1	1			143T				4 6	3/60		230/460		20			4	2040	TFGWB																																	
RT ANGLE 5/G W/TOT ENCL HTR																																																			
F 1 ASSY																																																			
GR 85.5																																																			
RECOMMENDED SPARE PARTS BEARING S																																																			

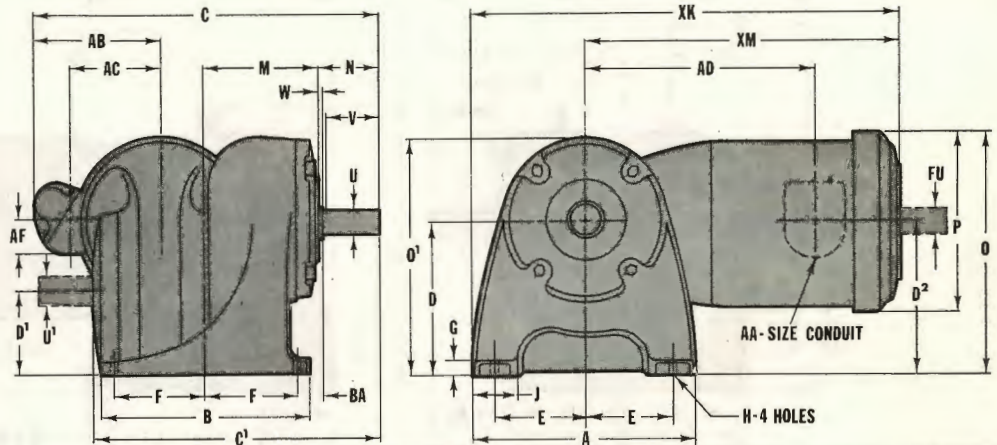
INITIAL	PRICE EACH	MAIL	AIR	QUAN.	CERTIFIED PRINTS TO:
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12

6PARTS LIST, REC SPARE PARTS (OSHA) 9 1 FORM DF 287 B/T % DOCUMENT CONTROL

CUSTOMER NAME			Syncrogear Motors	
CUST. No.	U.S. No.		Section 496	
MARK:			Page 11	
QTY	HP		FRAME	PHASE
CYCLE	RPM	VOLTS		
TOT. ENCL. TF,JF, JFN-GWB EXPL. PROOF EF,EFN, LF-GWB		RIGHT ANGLE SYNCROGEAR FRAMES 56,143,145-6 3 OR 2 PHASE		DIMENSIONS
FEATURES				

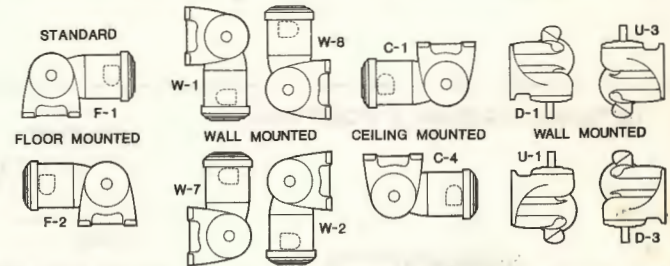
STANDARD F-1 ASSEMBLY



OPTIONAL ASSEMBLY POSITIONS

ASSEMBLY POSITION

Conduit box can be located on either side or on top and openings may be located in steps of 90° regardless of location. Standard as shown with conduit down.



ALL DIMENSIONS ARE IN INCHES

FRAME	TYPE	A	B	C	C ¹	D	D ¹	D ²	E	F	G	H	J	M	N	O	O ¹
56-6	EF-GWB	9-3/8	9	16-3/4	12-7/8	6-5/16	3-5/16	5-7/8	3-3/4	3-3/4	3/4	9/16	1-7/8	4-3/4	3-3/8	9-11/16	9-11/16
56-6	EFN-GWB	9-3/8	9	16-3/4	12-7/8	6-5/16	3-5/16	5-7/8	3-3/4	3-3/4	3/4	9/16	1-7/8	4-3/4	3-3/8	9-5/8	9-11/16
56-6	JF-GWB	9-3/8	9	16-1/4	12-7/8	6-5/16	3-5/16	5-7/8	3-3/4	3-3/4	3/4	9/16	1-7/8	4-3/4	3-3/8	9-1/2	9-11/16
56-6	JFN-GWB	9-3/8	9	16-1/4	12-7/8	6-5/16	3-5/16	5-7/8	3-3/4	3-3/4	3/4	9/16	1-7/8	4-3/4	3-3/8	9-1/8	9-11/16
143-6 145-6	LF-GWB	9-3/8	9	16-3/4	12-7/8	6-5/16	3-5/16	5-7/8	3-3/4	3-3/4	3/4	9/16	1-7/8	4-3/4	3-3/8	9-11/16	9-11/16
143-6 145-6	TF-GWB	9-3/8	9	16-1/4	12-7/8	6-5/16	3-5/16	5-7/8	3-3/4	3-3/4	3/4	9/16	1-7/8	4-3/4	3-3/8	9-1/2	9-11/16

FRAME	TYPE	P ★	U	U ¹	V MIN.	W	AA	AB ★	AC	AD	AF	BA ★	FU	XK	XM	SQ. KEY
56-6	EF-GWB	7-3/4	1-1/2	1	2-7/8	3/8	3/4	6-11/16	5-3/16	10-1/16	1-3/4	1-3/8	5/8	19	14-5/16	3/8 x 2
56-6	EFN-GWB	7-1/2	1-1/2	1	2-7/8	3/8	3/4	6-11/16	5-3/16	10-1/16	1-3/4	1-3/8	5/8	17-9/16	12-7/8	3/8 x 2
56-6	JF-GWB	7-1/4	1-1/2	1	2-7/8	3/8	3/4	6-1/2	4-7/16	7-15/16	1-3/8	1-3/8	5/8	16-1/8	11-7/16	3/8 x 2
56-6	JFN-GWB	6-1/2	1-1/2	1	2-7/8	3/8	3/4	6-1/2	4-7/16	7-15/16	1-3/8	1-3/8	5/8	16	11-5/16	3/8 x 2
143-6 145-6	LF-GWB	7-3/4	1-1/2	1	2-7/8	3/8	3/4	6-11/16	5-3/16	9-15/16	1-3/4	1-3/8	5/8	18-7/8	14-3/16	3/8 x 2
143-6 145-6	TF-GWB	7-1/4	1-1/2	1	2-7/8	3/8	3/4	6-1/2	4-7/16	8-15/16	1-3/8	1-3/8	5/8	17-1/8	12-7/16	3/8 x 2

Dimension "D" will never be exceeded, but may be less than values shown. When exact dimensions are required, shims up to 1/16" may be necessary.

All rough casting dimensions may vary by 1/4" due to casting variations

TOLERANCES

Shaft extension diameter: +.0000", -.0005"

★ Added or changed this issue

	U. S. ELECTRICAL MOTORS DIVISION EMERSON ELECTRIC CO.	Effective: July 14, 1974 Supersedes: Sec. 496 pg. 23.5 dated 10/24/71	If properly endorsed this print is correct for frame & assembly positions indicated. By _____ Date _____
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Syncrogear Motors



Section 496
Page 12

CUSTOMER NAME

CUST No.

U.S.No.

MARK:

QTY HP

FRAME

PHASE

CYCLE

RPM

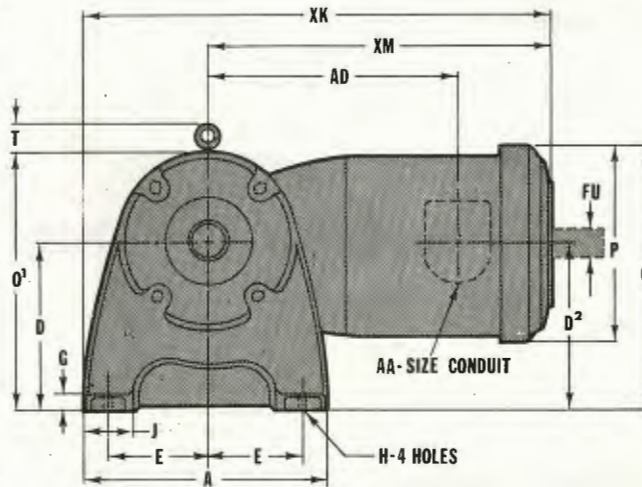
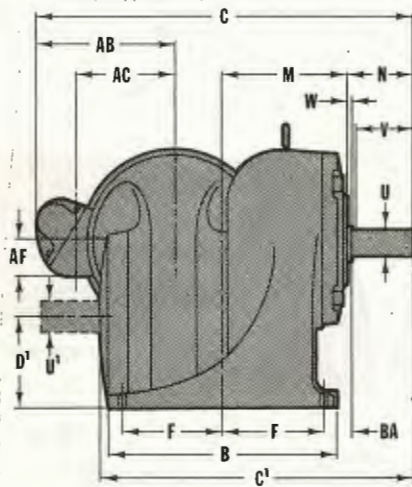
VOLTS

DIMENSIONS

RIGHT ANGLE SHAFT
FRAMES 56-143, 145-11

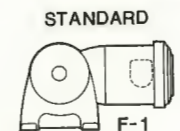
TOT. ENCL. TYPES
JF-GWB & TF-GWB

FEATURES

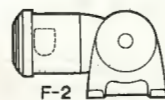


OPTIONAL ASSEMBLY POSITIONS

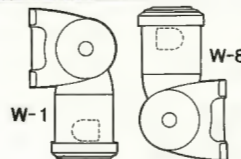
ASSEMBLY
POSITION



FLOOR MOUNTED

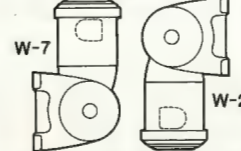


F-2



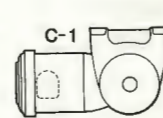
W-1

WALL MOUNTED



W-7

W-2

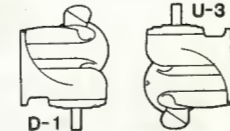


C-1

CEILING MOUNTED

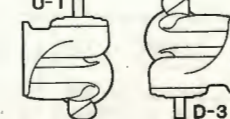


C-4



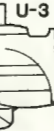
D-1

WALL MOUNTED



U-1

D-3



U-3

Conduit box can be located on either side or on top and openings may be located in steps of 90° regardless of location. Standard as shown with conduit down.

ALL DIMENSIONS ARE IN INCHES

FRAME	TYPE	A	B	C	C'	D	D'	D2	E	F	G	H	J	M	N	O	O'	P**
56-11	JF-GWB	12	11-1/2	20-7/8	17-3/4	8-1/4	4-3/16	6-3/4	4-7/8	4-7/8	1	11/16	2-1/4	5-3/4	4	10-3/8	13-5/16	7-1/4
143-11	TF-GWB	12	11-1/2	20-7/8	17-3/4	8-1/4	4-3/16	6-3/4	4-7/8	4-7/8	1	11/16	2-1/4	5-3/4	4	10-3/8	13-5/16	7-1/4
145-11																		

FRAME	TYPE	T	U	U'	V MIN.	W	AA	AB	AC	AD	AF	BA	FU	XK	XM	SQ. KEY
56-11	JF-GWB	2	1-3/4	1	3-7/16	1/4	3/4	6-7/16	4-7/16	7-15/16	1-3/8	1-1/8	5/8	17-5/8	11-5/8	3/8x2-1/2
143-11	TF-GWB	2	1-3/4	1	3-7/16	1/4	3/4	6-7/16	4-7/16	8-15/16	1-3/8	1-1/8	5/8	18-5/8	12-5/8	3/8x2-1/2
145-11																

Dimension "D" will never be exceeded, but may be less than values shown. When exact dimensions are required, shims up to 1/16" may be necessary.

All rough casting dimensions may vary by 1/4" due to casting variations.

All tapped holes are unified national course, right hand thread.

TOLERANCES

Shaft extension diameter: +.000; -.001"

**Largest motor diameter



U. S. ELECTRICAL MOTORS DIVISION
EMERSON ELECTRIC CO.

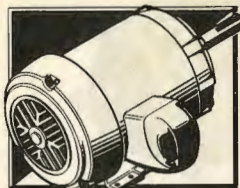
Effective: July 14, 1974
Supersedes: Sec. 496 pg. 23.7 dated 10/24/71

If properly endorsed this print is correct
for frame & assembly positions indicated.
By _____ Date _____

Renewal Parts

Section 722

Page 8

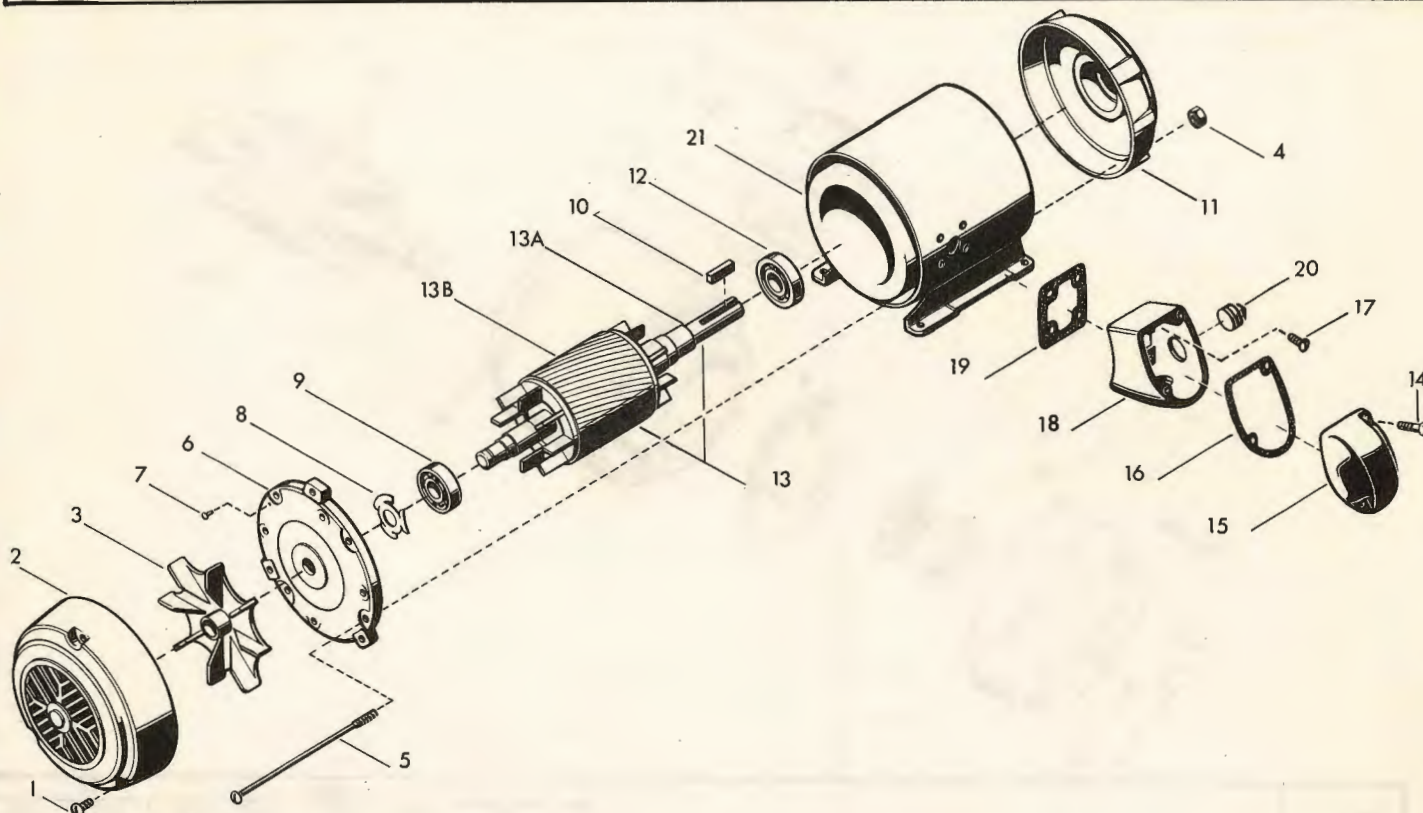


LIST PRICES & PARTS LISTS

NU/RATE TOTALLY- ENCLOSED

TYPE T & TF TOTALLY ENCLOSED • TYPE TC CORRO-DUTY

Frames
143T & 145T



ITEM NO.	QTY	NAME OF PART	LIST PRICE (EACH)
1	3	Screw & Lockwasher (Fan Cover Guard)	\$.40
2	1	Fan Cover Guard	8.30
3	1	Vent Fan	2.50
4	4	Nut & Lockwasher	.30
5	4	Screw (Short End Bracket to Pulley End Bracket)	.25
6	1	Bracket (Short End)	15.00
7	4	Plastic Plug	.05
8	1	Loading Spring	.25
9	1	Ball Bearing (Short End)	See Sec. 775
10	1	Key	.30
11	1	Bracket (Pulley End (Type 'T' & 'TC' only)	15.00

ITEM NO.	QTY.	NAME OF PART	LIST PRICE (EACH)
12	1	Ball Bearing (Pulley End)	See Sec. 775
13	1	Rotor Assembly Includes:	143T 145T
13A	1	Rotor shaft	51.10 56.60
13B	1	Rotor Core	19.80 19.80
14	2	Screw (Outlet Box Cover)	31.30 36.80
15	1	Outlet Box Cover	.25
16	1	Gasket (Outlet Box Cover)	4.90
17	4	Screw (Outlet Box Base to Frame)	.30
18	1	Outlet Box Base	.25
19	1	Gasket (Outlet Box Base)	7.20
20	1	Pipe Plug (Outlet Box Base)	.30
21	1	Wound Stator Assembly	.25
			See Sec. 770

This price list supersedes and cancels all previous prices and quotations and is subject to change without notice.

Prices are F.O.B. Factory or point of shipment with no freight allowance to destination. Prices are LIST - refer to Section 910 or to Company for discount information.

Minimum billing \$10.00 net.



U. S. ELECTRICAL MOTORS DIVISION
EMERSON ELECTRIC CO.

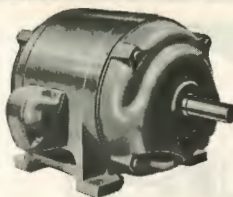
Effective:

August 1, 1971

Supersedes:

July 15, 1969 ,
Page 15

Discount Schedule: DS-28



Renewal Parts

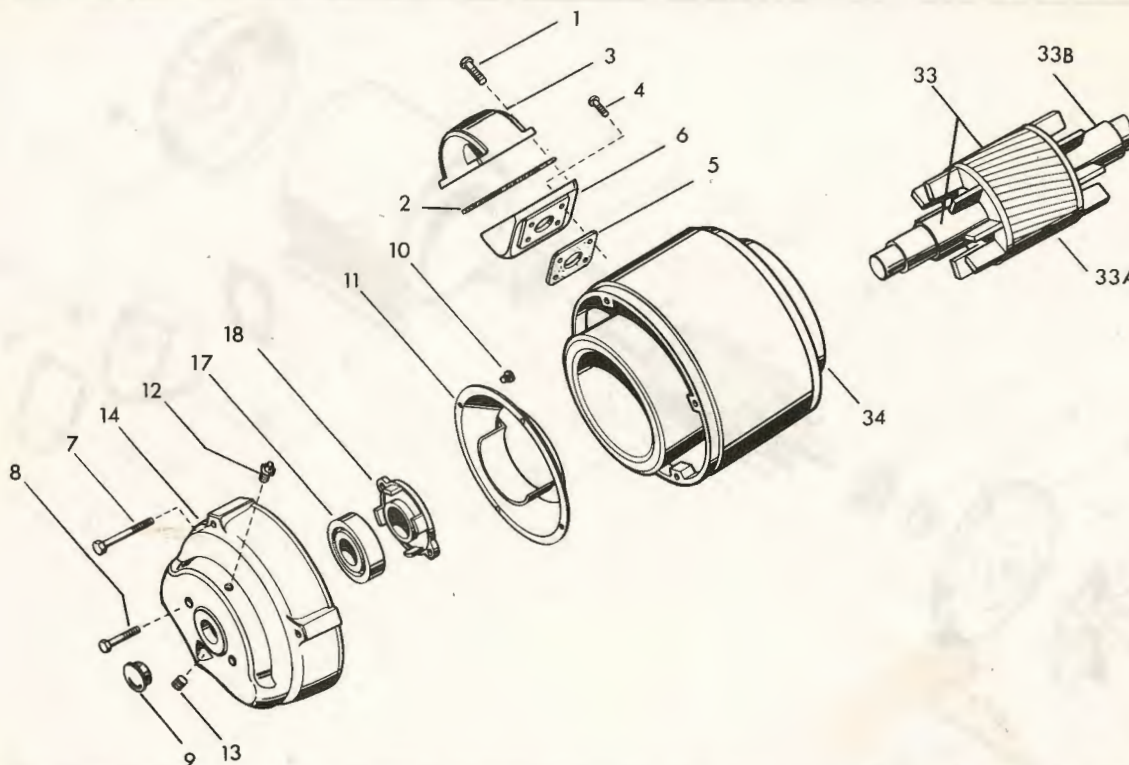
Section 722

Page 7

Frames
182-445U

UNICLOSED
DRIPPROOF
TYPE HV

LIST PRICES & PARTS LISTS



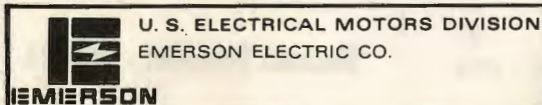
ITEM NO.	QTY.	NAME OF PART	FRAME							
			182 184	213 215	254U 256U	284U 286U	324U 326U	364U 365U	404U 405U	444U 445U
1	4	Rd. Hd. Screw (Outlet Box Cover to Base)	\$.25	\$.25	\$.25	\$.25	\$.25	\$.25	\$.25	\$.25
2	1	Gasket (Outlet Box Cover to Base)	.30	.30	.30	.30	.30	.50	.50	.50
3	1	Outlet Box Cover	5.30	5.30	7.50	12.80	12.80	25.80	25.80	25.80
4	4	Rd. Hd. Screw and Lockwasher (Base to Stator)	.25	.25	.25	.25	.25	.25	.25	.25
5	1	Gasket (Outlet Box Base to Stator)	.30	.30	.30	.30	.30	.50	.50	.50
6	1	Outlet Box Base	5.70	5.70	7.80	14.50	14.50	31.50	31.50	56.00
7	1	Hex Hd. Cap Screw (Bracket to Stator)	.25	.25	.25	.25	.25	.25	.25	.25
8	2	Screw (Bearing Cap)	.25	.25	.25	.25	.25	.25	.25	.25
9	1	Bracket Plug	.25	.25	.25	.50	.50	.50	.50	1.50
10	4	Sem (Air Deflector)(Qty. 6 used on 404U & 405U Frames)	.05	.05	.05	.05	.05	.05	.05	.05
11	1	Air Deflector	3.60	3.60	10.40	15.50	17.70	26.50	39.00	58.00
12	1	Grease Fitting (Fill)	.10	.10	.10	.10	.10	.10	.10	.10
13	1	Pipe Plug (Drain)	.25	.25	.25	.25	.25	.25	.25	.25
14	1	Bracket (Short End)	22.00	34.00	52.00	63.00	89.50	118.00	198.00	242.00
17	1	Ball Bearing	Refer to Section 775							
18	1	Bearing Cap	5.25	7.60	10.00	12.70	13.50	16.20	28.40	32.00
22	1	Square Key (Laminations)(364U & 365U) Not illustrated above.	-	-	-	-	-	.30	-	-
23	1	Locknut & Lockwasher (Used on 284U thru 405U frames)(Not illustrated)	-	-	-	2.50	2.50	2.50	3.00	-
33	1	Rotor Assembly includes:								
33A	1	Rotor Core	50.00 59.00	64.00 75.00	125.00 147.00	207.00 243.00	258.00 303.00	460.00 540.00	740.00 870.00	1200.00 1450.00
33B	1	Shaft	Refer to Varidrive or Syncrogear Parts Pages							
34	1	Stator Assembly	Refer to Section 770							

This price list supersedes and cancels all previous prices and quotations and is subject to change without notice.

Prices are F.O.B. Factory or point of shipment with no freight allowance to destination. Prices are LIST - refer to Section 910 or to Company for discount information.

Minimum billing \$10.00 net.

Printed in U.S.A.



Effective: August 1, 1971
Supersedes: July 15, 1969,
Pages 11, & 12

Discount Schedule: DS-28



Renewal Parts

Section 742

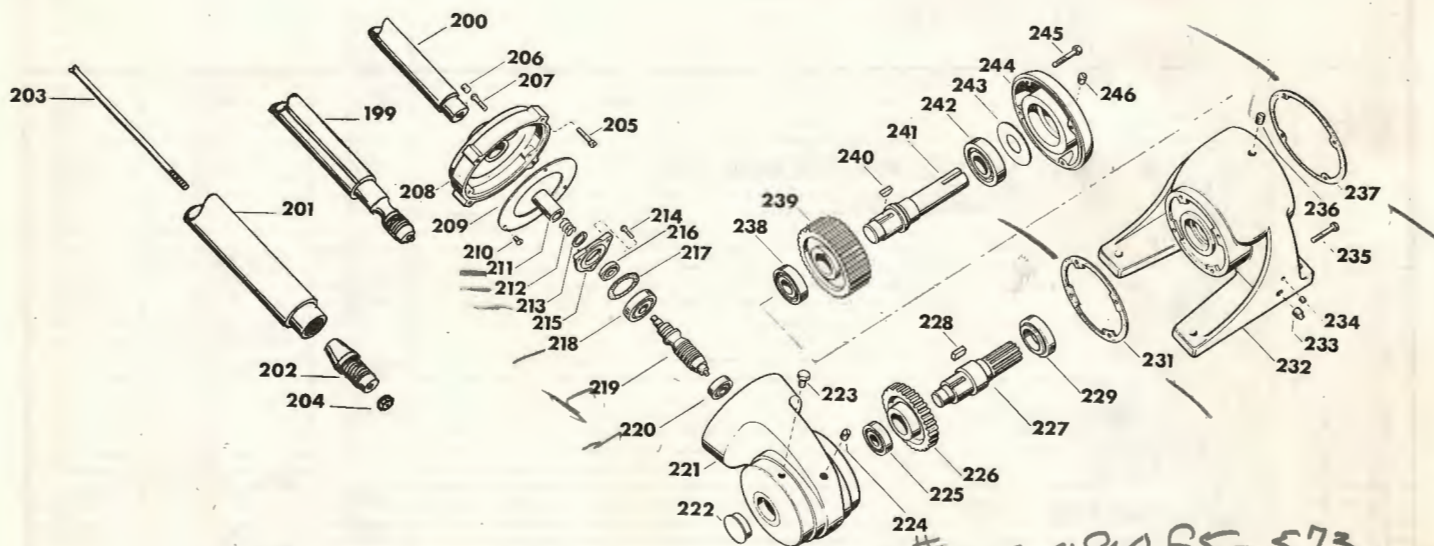
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Frames

6, 11, & 20

SYNCRGEAR HEAD ASSEMBLY RIGHT ANGLE COMBINATION TYPE GWB

LIST PRICES & PARTS LISTS



ID# 65-090F5-573

F071362

ITEM NO.	QTY.	NAME OF PART	LIST PRICE (EACH)		
			6 GWB	11 GWB	20 GWB
MOTOR TO SYNCRGEAR CONNECTION					
199	1	Geared Motor Shaft	\$ 32.00	\$ 43.00	\$ 52.00
200	1	Motor Shaft (20 Frame)	-	-	-
205	4	Screw (Adaptor Bracket/Stator)(Explosionproof Only)	.25	.25	-
206	3	Socket Set Screw (Adaptor Bracket/Gear Case)(Explosionproof Only)	.25	.25	-
207	3	Socket Head Cap Screw (Adaptor Bracket/Gear Case)(Explosionproof Only)	.25	.25	-
208	1	Adaptor Bracket (Explosionproof Only)	33.40	33.40	-
209	1	Air Deflector (6 Frame with Single Phase Motor Only)	1.30	-	-
210	1	SEM (Air Deflector)	.05	-	-
211	1	Splined Coupling (6 & 11 Frame Only)	7.20	7.20	-
212	1	Spring (6 Frame with Single Phase Motor Only)	1.20	-	-
213	1	Snapping (6 Frame Only)	.50	-	-
214	3	Screw & Lockwasher (Bearing Cap)(Qty. 4 on Frames 11 & 20)	.30	.30	.30
	1	Bearing Cap Assembly (Not illus. as Assy.) Includes:	18.70	-	-
215	1	Bearing Cap (Position #7)	10.80	12.00	29.80
216	1	Oil Seal (Position #7)	3.70	3.70	7.60
217	1	Gasket	.50	.50	.75
	1	Snapping (Position #7)(Not illus.)	.50	.50	.50
218	1	Bearing (Position #7)		Refer to Sec. 175	
VARIDRIVE TO SYNCRGEAR CONNECTION					
199	1	Geared Variable Worm Shaft (6 GWB Only)	79.00	-	-
201	1	Geared Variable Shaft (used on 11 & 20 GWB)	-	-	-
		Varidrive Frame Size: 6	-	56.00	-
		Varidrive Frame Size: 14	-	95.00	-
		Varidrive Frame Size: 15	-	-	116.00
202	1	Worm (used on 11 & 20 GWB Only)	-	69.50	100.00
203	1	Stud (used on 15 VAV - 20 GWB Only)	-	-	6.00
204	1	Hex Nut (used on 15 VAV - 20 GWB Only)	-	-	.50
205	1	Air Deflector (15 VAV - GWB Adaptor Bracket)(Not illus.)	-	-	3.60
	4	Pan Head Screws (Not illus.)	.15	.15	.15
	4	H.W. Cap Screws & Washer (Adaptor to Varidrive)(Qty. 2 on 20 GWB)	.25	.25	.25
	4	Flat Washers (Adaptor to Gear Case)(Not illus.)	-	-	.15
	4	Split Washers (15 VAV to 20 GWB Only)(Not illus.)	-	-	.15
	2	Studs (Adaptor Bracket to Gear Case 20 GWB)(Not illus.)	.25	.25	.25
	2	Hex Nuts (Not illus.)	.25	.25	.25

Printed in U.S.A.



U. S. ELECTRICAL MOTORS DIVISION
EMERSON ELECTRIC CO.

Effective: April 21, 1974
Supersedes: July 15, 1973

Discount Schedule DS-28

Renewal Parts

Section 742
Page 26



LIST PRICES & PARTS LISTS

SYNCRGGEAR HEAD ASSEMBLY RIGHT ANGLE COMBINATION TYPE GWB

Frames
6, 11, & 20

ITEM NO.	QTY.	NAME OF PART	LIST PRICE (EACH)		
			6 GWB	11 GWB	20 GWB
207	4	H.H. Cap Screw (Adaptor to Gear Case)(Qty. 2 Only on 20 GWB)	.25	.25	.25
209	1	Adaptor Bracket (15 VAV to 20 GWB C-Z Flow)	-	-	35.00
209	1	Adaptor Ring (6 VA to 6 & 11 GWB Z Flow Only)	8.60	8.60	-
210	4	Screw (6 VA to Gear Case C Flow)	.25	.25	-
219	1	Worm (used on some 6 GWB units)	59.00	-	-
220	1	Bearing (Position #5)	Refer Section 775		
221	1	Gear Case (GW)	108.00	108.00	195.00
222	1	Bracket Plug	.50	.50	.50
223	1	Vent Plug	.50	.50	.50
224	1	Pipe Plug	.25	.25	.25
	1	Bracket (S.E.GWV for F2 & F4 Assy. 6 & 11 GWB & all 20 GWB)(Not illus.)	41.40	59.40	59.40
	1	Gasket Bracket to Gear Case (Not illus.)	.50	.50	.50
	4	H.H. Cap Screw (Bracket to Gear Case)(Not illus.)	.25	.25	.25
	4	Split Washers (Not illus.)	-	-	.15
	2	Socket Hd. Pipe Plug (Not illus.)	.25	.25	.25
225	1	Bearing (Position #4)	Refer Section 775		
226	1	Worm Wheel	50.00	50.00	90.00
227	1	Final Pinion	54.90	107.00	107.00
228	1	Key (Worm Wheel)	.30	.30	.30
229	1	Bearing (Position #3)	Refer Section 775		
231	1	Gasket (GWV to GWB)	.50	.50	.50
232	1	Gear Case (GWB)	108.00	108.00	195.00
233	1	Pipe Plug (Oil Drain)	.25	.25	.25
234	1	Pipe Plug (Oil Level)	.25	.25	.25
235	4	H.H. Cap Screw (GWV to GWB)(Qty. 6 on 20 GWB)	.25	.25	.25
236	1	Pipe Plug (Oil Fill)	.25	.25	.25
237	1	Gasket (P.E. Bracket)	.75	.75	.75
238	1	Bearing (Position #2)	Refer Section 775		
239	1	Final Gear	54.90	107.00	107.00
240	1	Woodruff Key (Final Gear)	.40	.40	.40
241	1	Take-Off Shaft	57.60	86.00	86.00
242	1	Bearing (Position #1)	Refer Section 775		
243	2	Oil Seal (Position #1)	3.70	3.70	3.70
244	1	P.E. Bracket	36.00	52.00	52.00
245	8	H.H. Cap Screw & Split Washer	.30	.30	.30
246	1	Socket Hd. Pipe Plug	.25	.25	.25
	1	Socket Hd. Pipe Plug (Variable Shaft)(Not illus.)	.25	.25	.25
	1	Eyebolt (Not illus.)	.80	.80	-
	1	Plastic Plug (GWV Gear Case)(Not illus.)	.05	.05	.05

This price list supersedes and cancels all previous prices and quotation and is subject to change without notice.

Prices are F.O.B. Factory or point of shipment with no freight allowance to destination. Prices are LIST - refer to Section 910 or to Company for discount information.

Minimum billing \$15.00 net.

New gears and pinions are manufactured to give correct and identical tooth profile and may be used interchangeably, but a new pinion or gear should not be used with an old or worn gear or pinion.

WARNING: Any disassembly or repair work on Explosionproof motors will void the Underwriters' Laboratories Inc. label unless done by the manufacturer. Refer to your nearest U.S. Electrical Motors office for assistance.

CUSTOMER Rouse Const. Co.ORDER No.: 173**PARTS LIST INSTRUCTION**

THIS PARTS LIST IS MADE UP OF "MASTER PARTS LISTS" AND POSSIBLY, "SUB-PARTS LISTS".

THE "MASTER PARTS LIST" LISTS EACH PIECE OR PART AND ASSEMBLY REQUIRED FOR AN ORDER. IT IS IDENTIFIED BY THE ORDER AND PAGE NUMBER, LOCATED IN THE LOWER RIGHT HAND CORNER. **EXAMPLE:** (PAGE M1, ORDER XXXXX-00)

THE "SUB-PARTS LIST" IS A LISTING OF COMMON PARTS OR ASSEMBLIES. IT IS LISTED IN EITHER THE "MASTER PARTS LIST" OR IN ANOTHER "SUB-PARTS LIST" UNDER THE PART NUMBER COLUMN AND IS A NUMBER PREFIXED BY THE LETTER "L". (THIS NUMBER, LOCATED IN THE LOWER LEFT HAND CORNER, IDENTIFIES THE PARTS LIST AND IS ALSO THE PART NUMBER FOR THAT GROUP OF PARTS.) THE ORDER AND PAGE NUMBERS APPEAR IN THE LOWER RIGHT HAND CORNER.

EXAMPLE: (PAGE S1, ORDER XXXXX-00)

*THE SUB-PARTS LISTS WHICH ARE INDENTED ARE LISTED ON THE PREVIOUS SUB-PARTS LIST.

FILTER _____

ACCS _____

DRIVE _____

STEEL _____

ANCHOR _____

OTHER _____

PLI _____

6-21-742 P. 75MILES

ORDER

Not Complete ☐Complete ☒**EIMCO PMD PARTS LIST**PAGE
NUMBER

INDEX

M-1 THRU
M-3MASTER PARTS LIST NUMBER
22214-02PAGE
NUMBER

SUB PARTS LIST NUMBERS

DESCRIPTION TYPE 'C' CLARIFIER(1) LOT OF 2S-1 L22214A231

DRIVE UNIT

S-2 L222140232

DRIVE UNIT

S-3 S-5 L111737-1

DRIVE ASS'Y

S-6 L202316

BUSHING HOUSING ASS'Y

S-7 L202345-1

WORM GEAR ASS'Y

S-8 S-9 L110685

DRIVE CONTROL ASS'Y

S-10 L22214C252

SKIMMER EJECTION

S-11 L42700-3

SKIMMING DEVICE ASS'Y

S-12 S-13 L22214D253

CORNER BAKE WFLH. EJECTION

S-14 S-18 L22214D254

GEN'L EJECTION

E-2574
Rev. 4-74

ENVIROTECH EIMCO BSP

LINE No.	TOTAL FOR ORDER	 PART NUMBER	DRAWING NUMBER	DESCRIPTION	PATTERN NUMBER	*	REQ'D. NUMBER	REL. No.
1								
2								
3	2	L 22214 A231		C30 DRIVE UNIT				
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33				(DRIVE COMPLETE)				
34								
35								

ALL CAPSCREWS ARE SAE GRADE 5 UNLESS OTHERWISE SPECIFIED.

* WEIGHT SHOWN IS TOTAL FOR ONE UNIT. LETTERS (A), (B) OR (C) ARE RECOMMENDED SPARE PART CODES.

TITLE:

TYPE 'C' CLARIFIER
(1 LOT OF 2 MACH'S.)

REVISIONS:

BY CK'D BY DATE

When ordering parts specify Type of Equipment, Order No.,
Serial No., Part No., and Description, per this parts list.

UNITS REQ'D.
FOR ORDER 1 LOT

SERIAL NUMBER

MASTER PARTS LIST

PREPARED BY

DATE

CK'D BY

DATE

K.T.

6-11-74

CVA

6-21

PAGE 11 OF

ORDER NUMBER

22214-02

E-2574
Rev. 4-74

ENVIROTECH EIMCO BSP

LINE No.	TOTAL FOR ORDER	PART NUMBER	DRAWING NUMBER	DESCRIPTION	PATTERN NUMBER	*	REQ'N. NUMBER	REL. No.
1								
2								
3		A						
4								
5		A						
6								
7				WALKWAY ANCHOR BOLTS				
8	4	85979R	85977	3/4" X 10 ANCHOR BOLTS 303 ST. ST'L				
9	4			3/4" HEX NUTS "				
10	4			3/4" JAM NUTS "				
11								
12				CENTER COLUMN ANCHOR BOLTS				
13	32	85979JJ	85977	1 1/4" X 15 ANCHOR BOLTS 303 ST. ST'L				
14	64			1 1/4" HEX. NUTS "				
15								
16				SCUM BOX ANCHOR BOLTS				
17	8	85979P	85977	3/4" X 8 ANCHOR BOLTS 303 ST. ST'L				
18	8			3/4" HEX NUTS "				
19	8			3/4" FL. WASHERS "				
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31				"ORDER NOT COMPLETE"				
32								
33								
34								
35								

ALL CAPSCREWS ARE SAE GRADE 5 UNLESS OTHERWISE SPECIFIED.

* WEIGHT SHOWN IS TOTAL FOR ONE UNIT. LETTERS (A), (B) OR (C) ARE RECOMMENDED SPARE PART CODES.

TITLE: 80'-0 SQ. TYPE C2DC CLARIFIER
ANCHOR BOLTS &
ROLLER GUIDE IR 1 LOT OF 2 MACH

REVISIONS: A DELETED ITEMS 3 & 5 - ROLLER.
GUIDE TRACK SECTIONS
A CHANGED PG M1 TO M2

BY CK'D BY DATE

LWC

LWC

MASTER PARTS LIST

When ordering parts specify Type of Equipment, Order No., Serial No., Part No., and Description, per this parts list.

UNITS REQ'D. FOR ORDER 1 LOT

SERIAL NUMBER

PREPARED BY LWC

DATE 6/18/74

CK'D BY TWP

DATE 7/3/74

PAGE M2 OF

ORDER NUMBER 22214-02

E-2574
Rev. 5-74

ENVIROTECH EIMCO BSP

LINE No.	TOTAL FOR ORDER	PART NUMBER	DRAWING NUMBER	DESCRIPTION	PATTERN NUMBER	*	REQ'N. NUMBER	REL. No.
1								
2	2	L-22214C252		SKIMMER ERECTION			1930	
3							1394	
4	2	L-22214D253		CORNER RAKE MECH. ERECTION				
5								
6	2	L-22214D254		GENERAL ERECTION			38,553	
7								
8								
9								
10								
11			46551	TOLERANCE AND RULES				
12								
13			86858	FABRICATION AREA CLEANING GRADE [D]				
14								
15								
16				SURFACE PREPARATION:				
17				NONE				
18								
19				PAINT:				
20				NONE				
21								
22								
23								
24				REFERENCE DRAWINGS:				
25								
26			22214D201	GENERAL ARRANGEMENT				
27								
28								
29								
30								
31								
32								
33								
34								
35								

ALL CAPSCREWS ARE SAE GRADE 5 UNLESS OTHERWISE SPECIFIED.

* WEIGHT SHOWN IS TOTAL FOR ORDER. LETTERS (A), (B) OR (C) ARE RECOMMENDED SPARE PART CODES.

TITLE: CLARIFIER - TYPE-C2DC
80'0 SQ.
WT. SKB 12-17-74 1 LOT OF 2 MECH.

REVISIONS:

BY CK'D BY DATE

When ordering parts specify Type of Equipment, Order No., Serial No., Part No., and Description, per this parts list.

UNITS REQ'D. FOR ORDER 1 LOT

SERIAL NUMBER

MASTER PARTS LIST

PREPARED BY DATE CK'D BY DATE
ALS 11-14-74 SGW 12-13-74

PAGE 13 OF

ORDER NUMBER 22214-02

[illegible]

THE EIMCO CORPORATION
PROCESSING MACHINERY DIVISION

PARTS LIST NO. L 22214 D 232

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	PART NUMBER	DRAWING NUMBER	DESCRIPTION (Including Material)	PATTERN NUMBER	WT.	REQ'N. NUMBER	REL. No.	
				<u>22214 D 232</u>	ASSEMBLY					
1	1	2	L111737-1		C30 DRIVE ASSEMBLY					
2	1	2	L110685		DRIVE CONTROL ASSEMBLY, RH			(B)		
					(SET SWITCHES: #1-90, #2-60, #3 AND #4-OVER 100)					
3	1	2	85069B	85069	ACTUATING PIN					
4	1	2	46769A	46769	MOUNTING PLATE-DRIVE CONTROL					
5	1	2	202109A	202109	COVER-WORM GEAR					
6	1	2	112426A	112426	CHAIN GUARD					
7	1	2	21092D	21092	SPRING			(B)		
9	1	2	86332 A	86332	GEARMOTOR 20.0 RPM 230/460-3-60			(B)	<u>647038</u>	
					<u>SL-7(12), SL-16(12), SL-11C, SL-24</u>					
11	1	2	86143F	86143	SPROCKET 15T					
12	1	2	86143AF	86143	SPROCKET 54T					
13	1	2	85844AA	85844	BUSHING-TAPER-LOCK #1610					
14	1	2	85853S	85853	BUSHING-TAPER-LOCK #2517					
16	87	<u>174</u>	86603H	86603	CHAIN-ROLLER ASA 60					
17	1	2	86605H	86605	CONNECTING LINK ASA 60					
19	1	2			CAPSCREW-HEX HD 3/8-16NC x 1" (STL)					
20	2	4	86043K	86043	CAPSCREW- (SPECIAL THD)					
21	4	8			CAPSCREW-HEX HD 1/2-13NC x 1 1/2 (STL)					
22	2	4			CAPSCREW-HEX HD 1/2-13NC x 1 1/4 (STL)					
23	1	2			NUT-HEX 3/8-16NC (STL)					
24	6	<u>12</u>			NUT-HEX 1/2-13NC (STL)					
25	2	4			NUT-JAM HEX 3/8-16NC (STL)					
26	1	2			WASHER-LOCK 3/8 STD (STL)					
27	6	<u>12</u>			WASHER-LOCK 1/2 STD (STL)					
28	4	8			WASHER-FLAT 1/2 STD (STL)					
29	12	<u>24</u>			SCREW-TAPPING RD HD #6 x 5/16 (STL)					
31	1	2	21066A	21066	NAMEPLATE					
32	1	2	21066H	21066	LEGEND PLATE (CLARIFIER)					
33	1	2	87227A	87227	INSTRUCTION PLATE					
34	1	2	84640A	84640	INSTRUCTION PLATE (ARROW)					
					NOTE: SHOP ASSEMBLE ALL ITEMS)					
TITLE: DRIVE AND MOTOR PACKAGE: , FOR CLARIFIER, C30 DRIVE, WITH / HP .030 RPM 20,000 FT LB TORQUE					SEPIA FROM <u>L 112196-6</u>			BY / DATE		
					REVISIONS:					
SUB-PARTS LIST					PREPARED BY <u>K.T.</u>		DATE <u>6-11-74</u>		When ordering parts specify Type of Equipment, Order No., Serial No., Part No., and Description, per this parts list.	
					CHECKED BY <u>CVA</u>		DATE <u>6-21</u>		UNITS REQ'D. FOR ORDER <u>2</u>	
PAGE <u>1</u> OF <u>1</u>					PARTS LIST No. <u>L 22214 D 232</u>		ORDER PAGE NO. <u>5-2</u>		ORDER NUMBER <u>22214-02</u>	

**EIMCO PROCESSING MACHINERY DIVISION
ENVIROTECH CORPORATION**

PARTS LIST NO. L111737-1

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	PART NUMBER	DRAWING NUMBER	DESCRIPTION (Including Material)	PATTERN NUMBER	WT.	REQ'D. NUMBER	REL. No.
				111737	ASSEMBLY				
1	1	2	112282A1A	112282-1	BASE	112282A	(B)		
/	1	2	20766B	20766	BEARING STRIP, BOTTOM		(A)		
/	1	2	20766C	20766	BEARING STRIP, OUTER		(A)		
					SEE NOTE PAGE 3				
2	1	2	111664A1A	111664-1	MAIN GEAR	111664A	(B)		
/	1	2	20766B	20766	BEARING STRIP, TOP		(A)		
/	1	2	20766A	20766	BEARING STRIP, INNER		(A)		
					SEE NOTE PAGE 3				
4	1	2	111450A	111450	WORM GEAR HOUSING	12652A			
5	1	2	201415A1A	201415-1	END CAP	201415A			
6	1	2	L202316		BUSHING HOUSING ASS'Y				
7	1	2	86196A	86196	SPRING SEAT		(A)		
10	1	2	201735A1A	201735-1	SLIDING BEARING SEAT	201735A			
12	1	2	L202345-1		WORM GEAR		(B)		
13	1	2	202198A	202198	MAIN GEAR COVER		(B)		
16	1	2	202304A	202304	WORM AND SHAFT		(B)		
17	1	2	202199A	202199	MAIN PINION		(B)		
18	1	2	86213A	86213	STOP SCREW		(A)		
19	1	2	86198B	86198	STOP ROD		(A)		
20	1	2	86447A	86447	REVERSE THRUST SLEEVE		(A)		
21	1	2	40442J	40442	KEY		(B)		
22	1	2	40447A	40447	KEY		(B)		
24	1	2	80306A	80306	DIPSTICK		(C)		
/	1	2			CHAIN, SINGLE JACK #22 x 8" LONG (STL)				
25	1	2	86215A	86215	ANTI-ROTATION PIN		(B)		

TITLE:

DRIVE ASSEMBLY
C30

SEPIA FROM

REVISIONS: D/R 2682, 2752, 2980, 3272, 3325

BY / DATE

SUB-PARTS LISTPREPARED BY
H.L.DATE
12-12-70When ordering parts specify Type of Equipment,
Order No., Serial No., Part No., and Description,
per this parts list.UNITS REQ'D.
FOR ORDER 2

PAGE 1 OF 3

PARTS LIST No.
L111737-1CHECKED BY
A.G.DATE
8-25-71PREPARED BY
C.D.DATE
5-31-74CK'D BY
CVADATE
6-21ORDER
PAGE NO. 5-3ORDER NUMBER
22217-02

**EIMCO PROCESSING MACHINERY DIVISION
ENVIROTECH CORPORATION**

PARTS LIST NO. L111737-1

ITEM No.	QTY. PFR UNIT	TOTAL FOR ORDER	PART NUMBER	DRAWING NUMBER	DESCRIPTION (Including Material)	PATTERN NUMBER	WT.	REQ'D NUMBER	EST. No.
33	3	6	87548F	87548	LIFTING BOLTS				
34	1	2	86201A	86201	SPRING ADJUSTING SCREW		(C)		
35	2	4	85471F	85471	PLUG, VENTED PIPE		(B)		
36	1	2	40594A	40594	NIPPLE, DIPSTICK				
37	1	2	84640A	84640	INSTRUCTION PLATE (ARROW)				
39	86	172	85321R	85321	BEARING BALL 1 1/4 DIA		(A)		
40	1	2			BEARING CONSISTING OF:				
/	1	2	46783H	46783	INNER RACE		(A)		
/	1	2	46783K	46783	OUTER RACE		(A)		
41	1	2	46807F	46807	BEARING		(A)		
42	1	2	46789X	46789	BEARING		(A)		
43	2	4	46767BC	46767	RETAINING RING		(A)		
44	1	2	46766AZ	46766	RETAINING RING		(A)		
47	1	2	85628D	85628	GAUGE, OIL 1/2"		(B)		
48	1	2	46758L	46758	SEAL, OIL		(A)		
49	2	4	46762AC	46762	SEAL, OIL		(A)		
51	1	2	86055A	86055	DRAIN COCK 3/4"		(C)		
52	2	4	85414A	85414	GAUGE COCK 1/4"		(C)		
56	9	18	87193B	87193	PACKING 9/32		(A)		
57	10	20	87193B	87193	PACKING 9/32		(A)		
60	1	2			NIPPLE, PIPE 3/4 CLOSE TBE (STL BLK)				
61	1	2			NIPPLE, PIPE 1" x 4 STD TBE (STL BLK)				
62	1	2			NIPPLE, PIPE 3/4 x 6 STD TBE (STL BLK)				
TITLE: DRIVE ASSEMBLY C30					SEPIA FROM REVISIONS: D/R 2481, 2799, 2980, 3035, 3235 D/R 3419, 3450			BY / DATE	
SUB-PARTS LIST			PREPARED BY H.L.	DATE 12-12-70	When ordering parts specify Type of Equipment, Order No., Serial No., Part No., and Description, per this parts list.			UNITS REQ'D. FOR ORDER 2	
PAGE 2 OF 3	PARTS LIST No. L111737-1	CHECKED BY A.G.	DATE 1-6-71	PREPARED BY RLO	DATE 5-31-74	CK'D BY CVA	DATE 6-21	ORDER PAGE NO. 5-4	ORDER NUMBER 22214-02

E-2575 Rev. 12-71

**EIMCO PROCESSING MACHINERY DIVISION
ENVIROTECH CORPORATION**

PARTS LIST NO. L111737-1

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	PART NUMBER	DRAWING NUMBER	DESCRIPTION (Including Material)	PATTERN NUMBER	WT.	REQ'D. NUMBER	REL. No.
64	1	2			NIPPLE, PIPE 1/4 x 4 STD TBE (STL BLK)				
65	1	2			NIPPLE, PIPE 1/4 x 2 STD TBE (STL BLK)				
66	1	2			COUPLING, PIPE 1" STD (STL BLK)				
68	1	2			TEE, RED-PIPE 3/4 x 3/4 x 3/8 STD (STL BLK)				
70	2	4			PLUG, SQ HD, PIPE 1/2 STD (STL BLK)				
71	3	6			PLUG, CSK HD, PIPE 1/4 STD (STL BLK)				
75	1	2	46079A	46079	TEMPORARY COVER				
79	1	2	85079A	85079	WARNING TAG				
80	1	2			SETSCREW, SOC HD CUP PT 1/2-13NC x 1 3/4 (STL)				
81	4	8			CAPSCREW, HEX HD 3/4-10NC x 9 1/2 (STL)				
82	4	8			CAPSCREW, HEX HD 3/4-10NC x 2 (STL)				
83	4	8			CAPSCREW, HEX HD 1/2-13NC x 1 1/2 (STL)				
84	4	8			CAPSCREW, HEX HD 1/2-13NC x 2 1/2 (STL)				
85	4	8			CAPSCREW, HEX HD 1/2-13NC x 1 1/2 (STL)				
86	4	8			CAPSCREW, HEX HD 1/2-13NC x 1" (STL)				
88	11	22			WASHER, LOCK 3/4 STD (STL)				
89	4	8			CAPSCREW, HEX HD 1/2-13NC x 1 1/4 (STL)				
90	16	32			WASHER, LOCK 1/2 STD (STL)				
91	2	4			SCREW, DRIVE RD HD #6 x 5/16 (STL)				
92	3	6			NUT-HEX 3/4-10NC (STL)				
					NOTE: BEARING STRIPS ARE TO BE INSERTED IN ITEMS 1 & 2 DURING MACHINE SHOP OPERATION				

TITLE:

DRIVE ASSEMBLY

SEPIA FROM

BY / DATE

REVISIONS: D/R 2618, 2980, 3450

SUB-PARTS LISTPREPARED BY
H.L.DATE
12-12-70When ordering parts specify Type of Equipment,
Order No., Serial No., Part No., and Description,
per this parts list.UNITS REQ'D.
FOR ORDER

2

PAGE 3 OF 3

PARTS LIST No.
L111737-1CHECKED BY
A.G.DATE
1-6-71PREPARED BY
ELODATE
5-31-74CK'D BY
CVADATE
6-21ORDER
PAGE
NO.

5-5

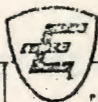
ORDER NUMBER

22214-02

**EIMCO PROCESSING MACHINERY DIVISION
ENVIROTECH CORPORATION**

PARTS LIST NO. L202316[illegible]

E-2575



THE LINCO CORPORATION
PROCESSING MACHINERY DIVISION

PARTS LIST NO. L110685

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	PART NUMBER	DRAWING NUMBER	DESCRIPTION (Including Material)	PATTERN NUMBER	WT.	REQ'D. NUMBER	DEL. No.
35	12	24			WASHER-.562 OD x .260 ID x .062T (MOLDED NYLON)				
39	2	4			SCREW-MACH FLAT HD #6-32NC x 3 1/2 (STL)				
40	4	8			SCREW-MACH RD HD #8-32NC x 1/2 (STL)				
41	1	2	85381A	85381	SPRING ANCHOR (STL)				
42	2	4			SETSCREW-SOC HD CUP PT #10-24NCx5/16 (STL)				
43	4	8			SETSCREW-SOC HD CUP PT 1/4-20NCx1/2 (STL)				
44	4	8			CAPSCREW-FLAT HD #10-24NC x 5/16 (STL)				
45	12	24			SCREW-MACH PAN REC HD 1/4-20NC x 1/2 (18-8 SS)				
46	4	8			CAPSCREW-HEX HD 3/8-16NC x 5/8 (STL)				
47	2	4			SCREW-SHLD SOC HD 5/16 x 1/2 (CAD PL STL)				
48	5	10			TAPPING SCREW-PHILLIPS PAN HD TYPE F #10-24NC x 3/8 (SS)				
49	2	4			CAPSCREW BUTTON SOC HD 1/2-13NC x 1 (STL)				
50	2	4			NUT-HEX #6-32NC (STL)				
54	4	8			WASHER-FLAT 3/8 STD (STL)				

TITLE:

DRIVE CONTROL ASSEMBLY, CONT.

REVISIONS:

D/R 491, 547, 645, 706, 1150, 1615, 3087

BY / DATE

SUB-PARTS LIST

PREPARED BY

HL

DATE

5-1-68

CHECKED BY

LANE *dtb*

DATE

4-2-70 (ET)

When ordering parts specify Type of Equipment, Order No., Serial No., Part No., and Description, per this parts list.

UNITS REQ'D. FOR ORDER

2

SERIAL NUMBER

ORDER NUMBER

PREPARED BY

K.T.

DATE

6-11-74

CK'D BY

CVA

DATE

6-21

5-8

22214-02

THE EIMCO CORPORATION
PROCESSING MACHINERY DIVISION

PARTS LIST NO. L110685

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	PART NUMBER	DRAWING NUMBER	DESCRIPTION (Including Material)	PATTERN NUMBER	WT.	REQ'D. NUMBER	REL. NO.
				110685	ASSEMBLY				
1	1	2	85370A	85370	POINTER				
3	4	8	85736A	85736	CAM				
4	1	2	28723A	28723	CAM SUPPORT				
5	1	2	85362A	85362	SHAFT				
8	1	2	110682A	110682	HOUSING				
9	2	4	85718A	85718	COVER				
10	1	2	85716A	85716	COVER				
11	2	4	84329A	84329	SPACER				
15	1	2	85680A	85680	GASKET				
16	1	2	28743A	28743	INDICATOR				
17	2	4	85719A	85719	GASKET				
18	1	2	85717A	85717	GASKET				
19	5	10	84239A	84239	SEPARATOR				
20	A/R	A/R			GLUE ROBERTS #206 OR EQ				
21	1	2	84237A	84237	GASKET				
22	1	2			GROMMET (RUBBER)				
23	1	2	87524A	87524	MARKER STRIP (1-9)				
24	1	2	87524B	87524	MARKER STRIP (10-18)				
25	4	8	86088A	86088	SWITCH			(A)	
26	1	2	86439T	86439	BEARING-(DW6 FAFNIR)				
27	2	4	87523M	87523	TERMINAL BLOCK				
28	1	2	85692A	85692	EXTENSION SPRING				
29	1	2	47324ZS	47324	PIN-DRIVE (1/4 x 1 DRIV-LOK TYPE G) (SS)				
30	2	4	47323AY	47323	PIN-DRIVE (1/8 x 1 DRIV-LOK TYPE A) (SS)				

TITLE:

DRIVE CONTROL ASSEMBLY
RIGHT HAND W/O TRANSMITTER

SEPIA FROM

REVISIONS: D/R 491, 547, 645, 706, 1266, 2236
D/R 2629, 3416

BY / DATE

SUB-PARTS LIST

PREPARED BY RET
H.L.DATE
5-1-68CHECKED BY
LANE DRTDATE
2-22-71

When ordering parts specify Type of Equipment,
Order No., Serial No., Part No., and Description,
per this parts list.

UNITS REQ'D.
FOR ORDER

2

ORDER
PAGE
NO.

5-9

ORDER NUMBER

22214-02

PAGE 1 OF 2

PARTS LIST NO.
L110685

PARTS LIST No. L22214C252

ITEM No.	QTY. PER UNIT	TOTAL FOR ORDER	PART NUMBER	DRAWING NUMBER	DESCRIPTION	PATTERN NUMBER	#	REQ'N. NUMBER	REL. No.
				22214C252	SKIMMING MECH. ERECTION		965		
3	1	2	L42700-3		SKIMMING DEVICE ASSEMBLY				
5	1	2	47356A	47356	BRACKET	ST'L	6		
7	1	2	22214C281A	22214C281	SKIMMER BLADE	ST'L	123		
12	1	2	22214C280A	22214C280	SKIMMER ARM	ST'L	80		
13	1	2	22214D285A	22214D285	SKIMMER SUPPORT	ST'L	189		
14	1	2	22214D271A	22214D271	SCUM BOX	ST'L	348		
15	2	4	22214B272A	22214B272	SCUM BOX SUPPORT	ST'L	88		
17	2	4	46713BM	46713	CLAMP	S. ST'L	-		
18	1	2	87131D	87131	HOSE (MULTIFLEX CONNECTOR)	NEOP.	-		
19	1	2	81292A	81292	NOZZLE	ST'L	13		
21	1	2	47180E	47180	COUNTER BALANCE	ST'L	118		
23	4	9			CAPSCREW HX HD 1/2-13NC x 1/2	ST'L			
24	24	50			" " 5/8-11NC x 1/2	ST'L			
28	4	9			NUT HEX 1/2-13NC STD	ST'L			
29	22	35			" " 5/8-11NC STD	ST'L			
31	8	17			WASHER FLAT 1/2 STD	ST'L			
32	15	35			" " 5/8 STD	ST'L			

ALL CAPSCREWS ARE SAE GRADE 5 UNLESS OTHERWISE SPECIFIED. * WEIGHT SHOWN IS TOTAL FOR ONE UNIT. LETTERS (A), (B) OR (C) ARE RECOMMENDED SPARE PART CODES. SEPIA FROM:

TITLE: SKIMMING MECHANISM
ERECTION

REVISIONS:

BY: CK'D BY: DATE

SUB-PARTS LIST

PREPARED BY BJB DATE 10-23-74

When ordering parts specify Type of Equipment, Order No., Serial No., Part No., and Description, per this parts list.

UNITS REQ'D. FOR ORDER 2

PAGE 1 of 1

PARTS LIST No. L22214C252

CHECKED BY SGW

DATE 12-18-74

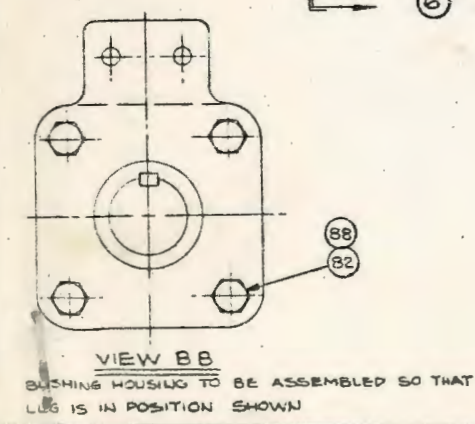
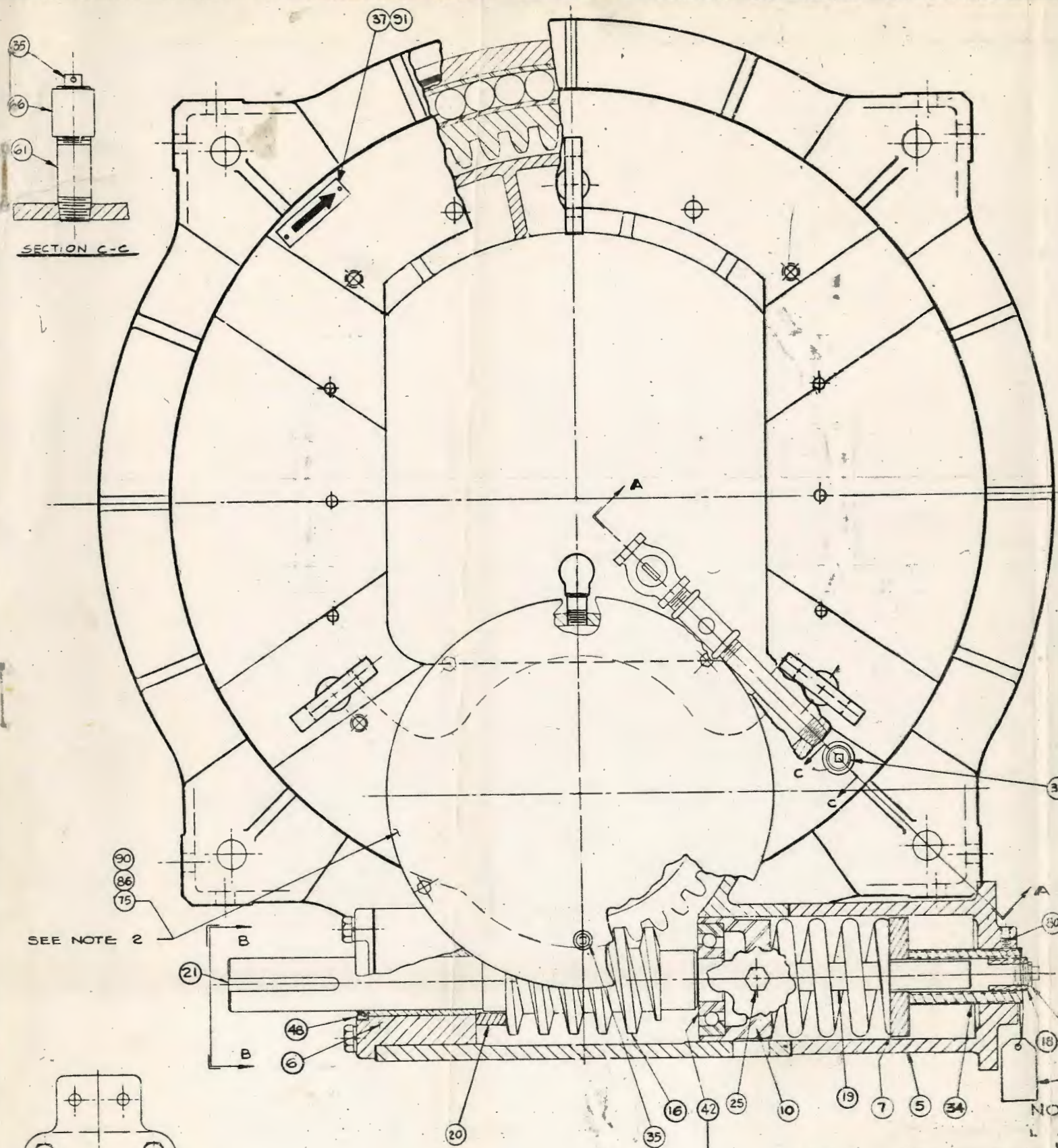
PREPARED BY DATE

CK'D BY

DATE

ORDER PAGE NO. 5-10

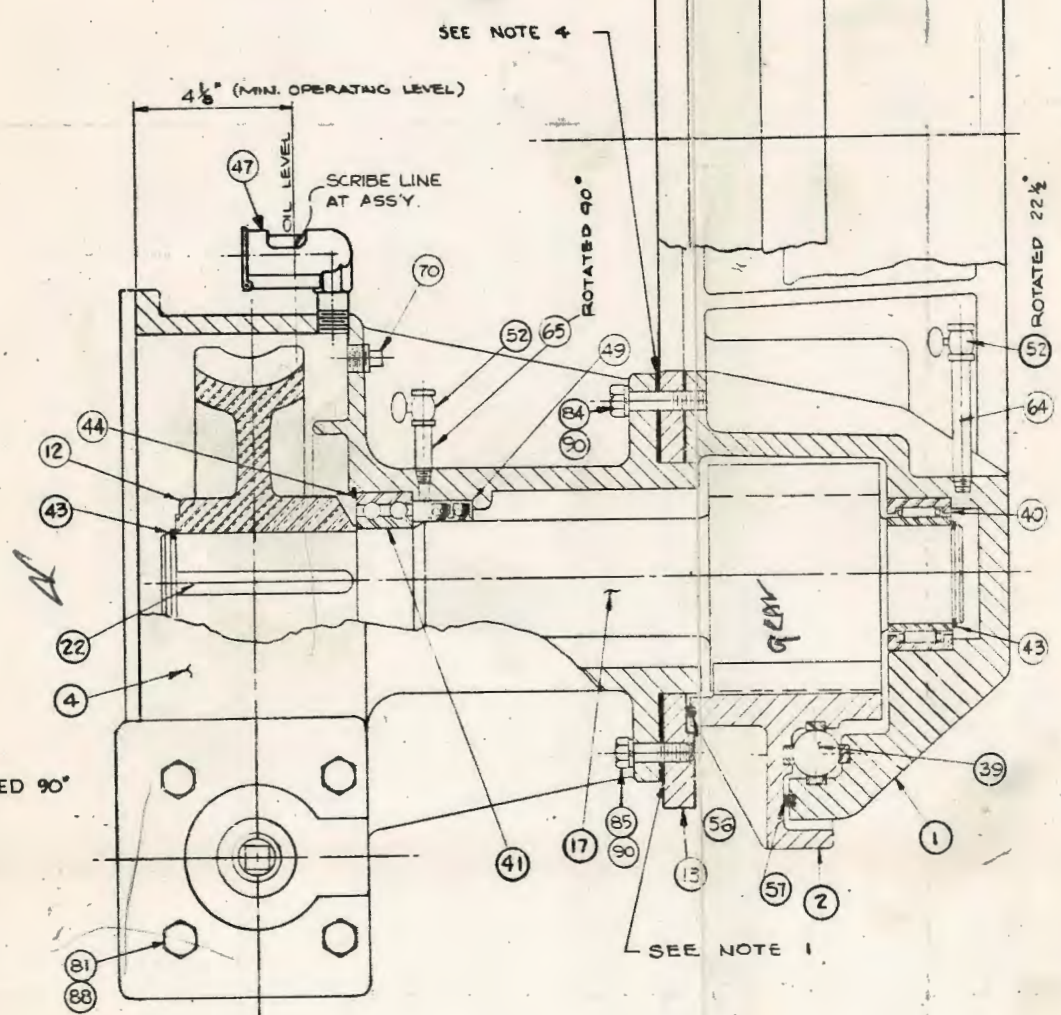
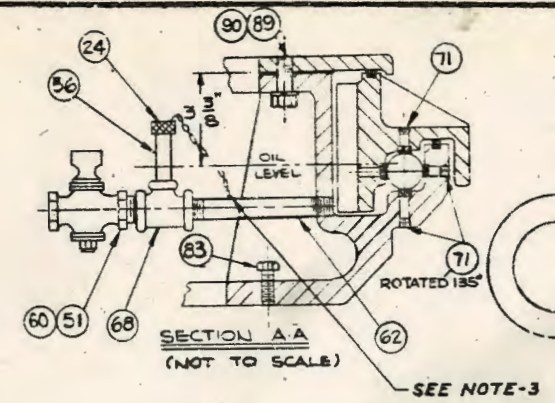
ORDER NUMBER 22214-02



CAUTION!

NOTE CAREFULLY HOW BEARING IS ASSEMBLED IN HOUSING TO TAKE THRUST TOWARD SPRING. IMPROPER ASSEMBLY WILL CAUSE BEARING FAILURE.

THRUST →

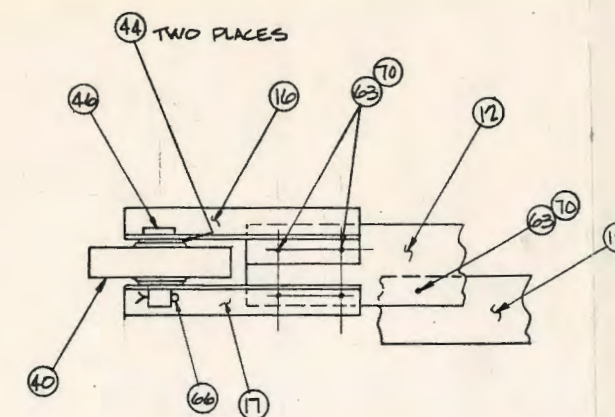
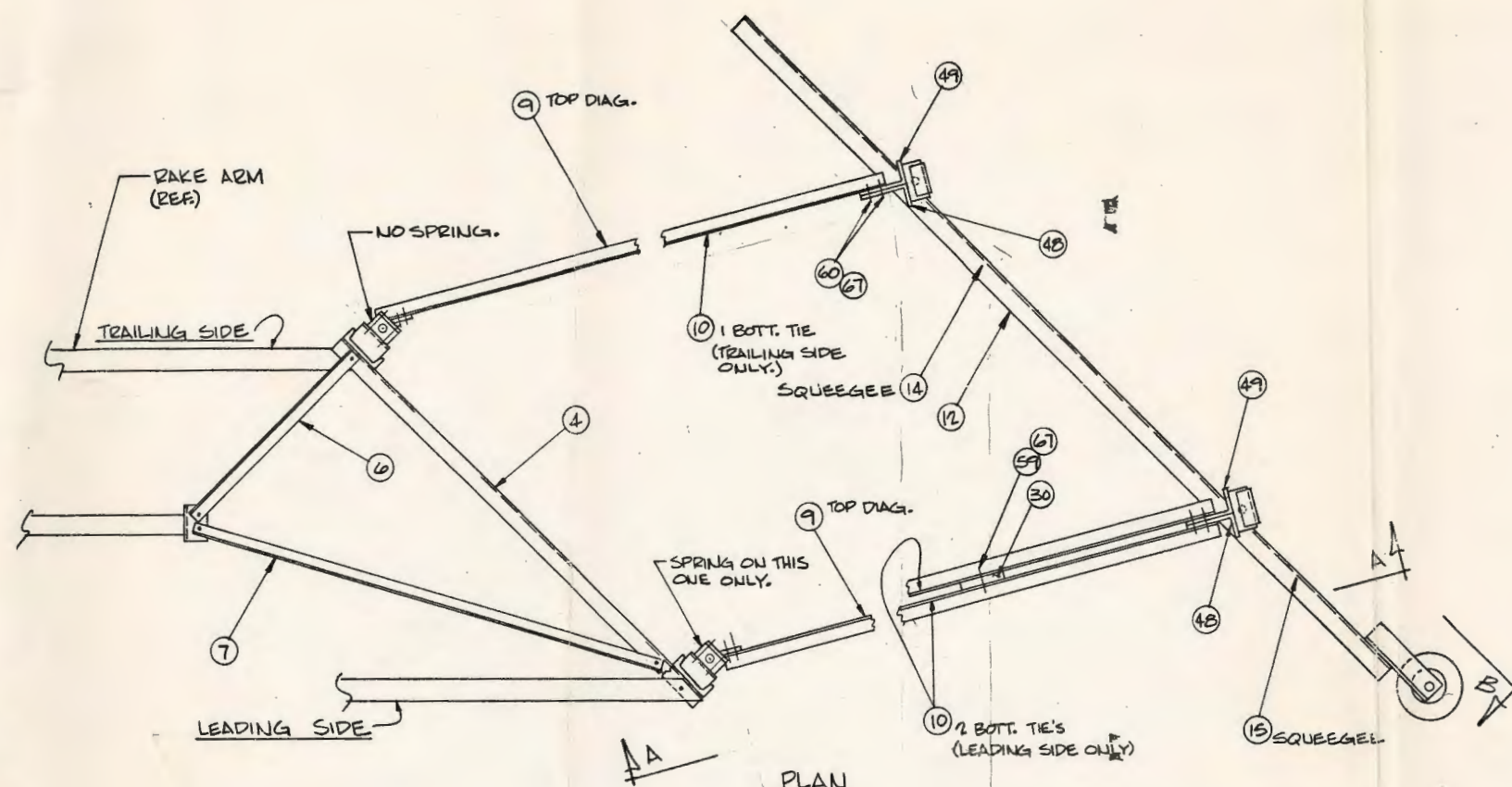


- NOTES:**
1. APPLY PERMATEX TO ALL JOINTS (INDICATED WITH HEAVY LINES) FOR OIL SEAL.
 2. DESIGN OF WORM GEAR COVER TO BE DETERMINED AS REQUIRED FOR MOTOR DRIVE COMPONENTS. ITEM 35 TO BE BAGGED AND TIED TO DRIVE UNIT. USE TEMPORARY COVER, ITEM NO. 75, FOR STOCK UNIT.
 3. TACK WELD CHAIN TO NIPPLE AS SHOWN
 4. CHECK TO SEE IF SHIMS ARE REQUIRED. USE DRAWING NO. 47602 FOR CHECKING INFORMATION.

C-30 PARTS LIST NO. L111737-1

THE EIMCO CORPORATION Salt Lake City, Utah	
DATE: 9-22-70	DRIVE ASSEMBLY
BY: G.E.N.	C-30 DRIVE (BASIC)
CHKD: [initials]	DATE: [blank]
APPR: [initials]	DATE: [blank]
111737	

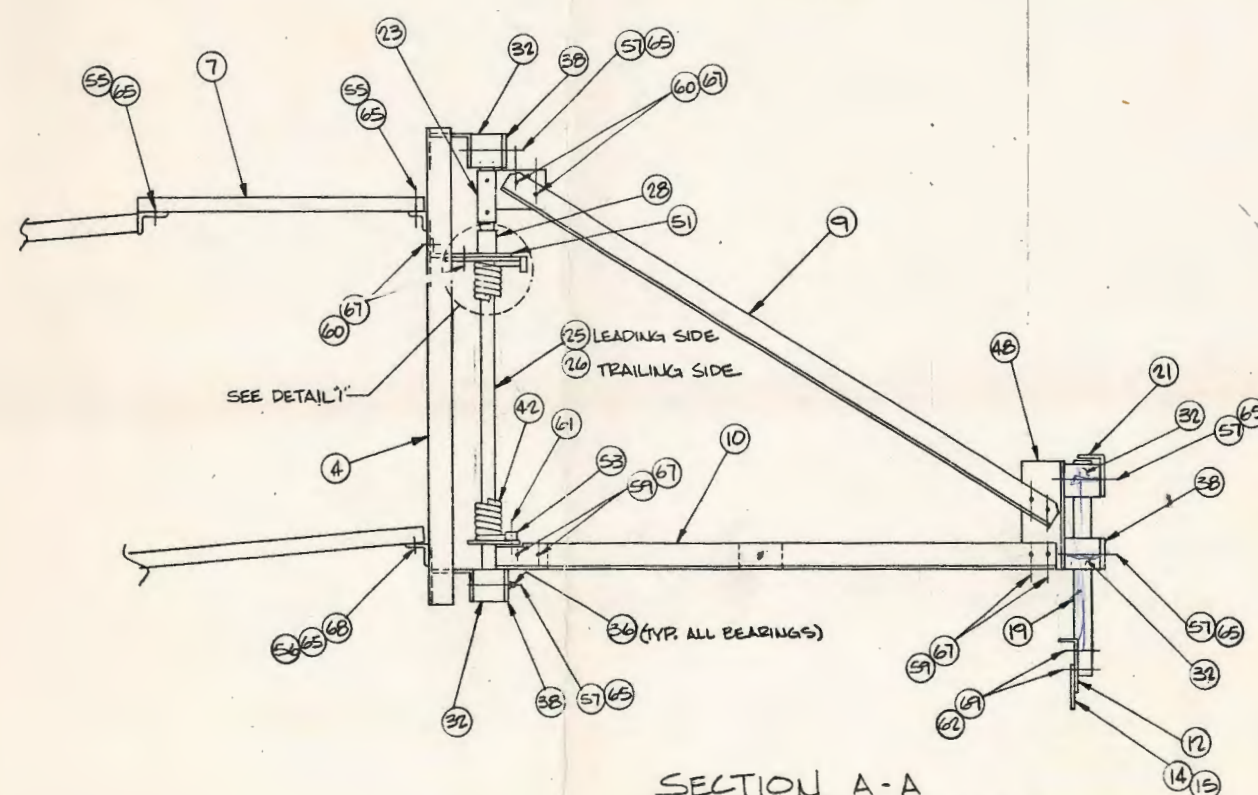
T	95539-7-73
H	3150 6 14 73
C	33793 16 73
F	3272 1-15-73
E	3224 12-14-72
D	3075 8-2-70
C	2785 5-1-72
B	2732 1-24-71
A	2618 10-19-71
DATE	27/1/80



VIEW B

INSTRUCTIONS FOR SPRING TENSION ADJUSTMENT

1. COMPLETE ASSEMBLY OF CORNER RAKING MECHANISM, GREASE ALL BEARINGS.
2. PIVOT ARM SHAFTS SHOULD BE VERTICAL.
3. ROTATE RAKE ARM TO A SIDE WALL POSITION (END OF RAKE ARM CLOSE TO TANK WALL), SWING CORNER RAKING MECHANISM UP AGAINST TANK WALL.
4. REMOVE THE BOLTS (27) WHICH LOCK THE SPRING BRACKET (51) TO THE SPRING TENSIONER (28).
5. USING A PIPE WRENCH, TURN THE SPRING TENSIONER APPROX. ONE (1) REVOLUTION CLOCKWISE. REPLACE THE 3 BOLTS.
6. ROTATE THE RAKE ARM THROUGH ONE COMPLETE REVOLUTION AND OBSERVE OPERATION. MECHANISM MUST EXTEND SMOOTHLY INTO EACH CORNER AND HOLD ROLLER AGAINST GUIDE PLATE WITH A MIN. OF 10 LBS. FORCE IN CORNER POSITION.

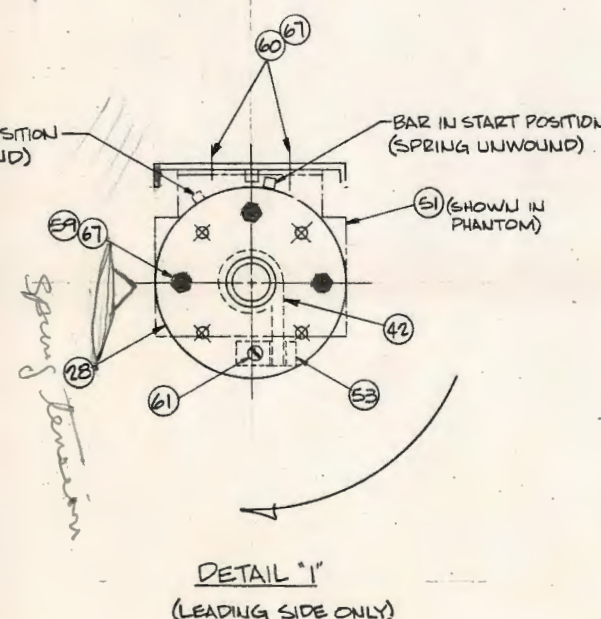


SECTION A-A

NOTE: ITEMS, (28, 51, 61, 60, 42, 53, 61) LEADING SIDE ONLY.

BAR IN FINISH POSITION (SPRING WOUND)

BAR IN START POSITION (SPRING UNWOUND)

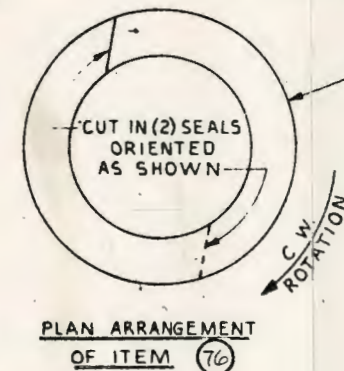
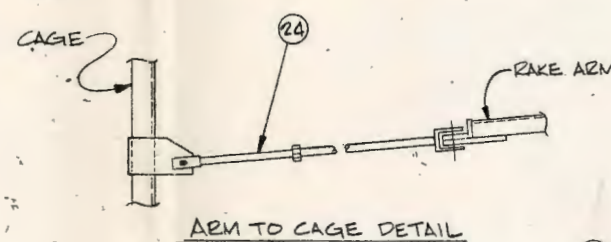
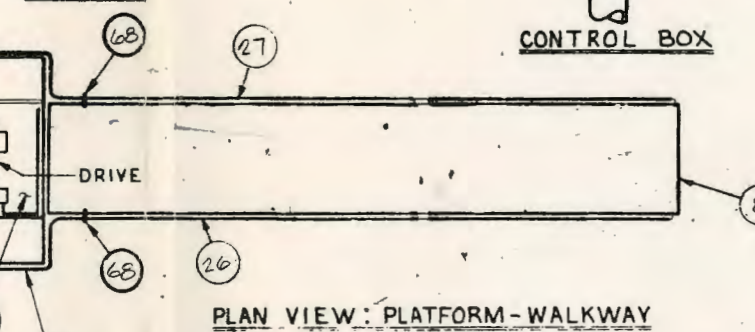
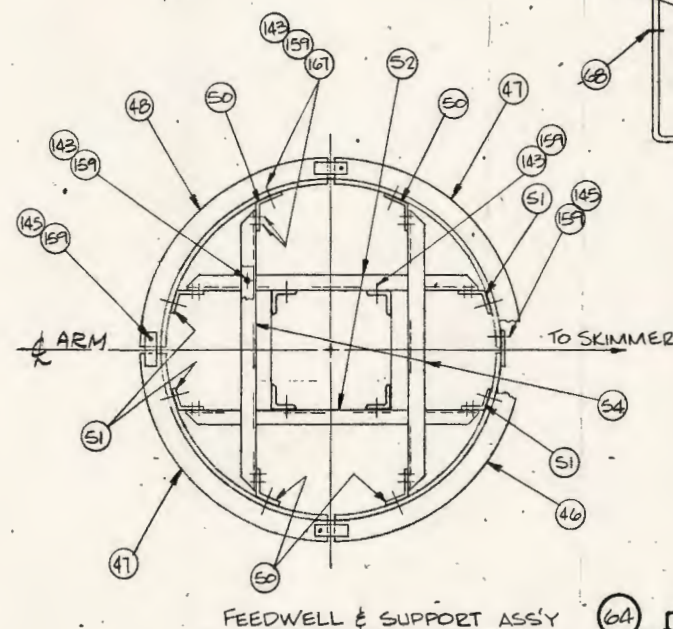
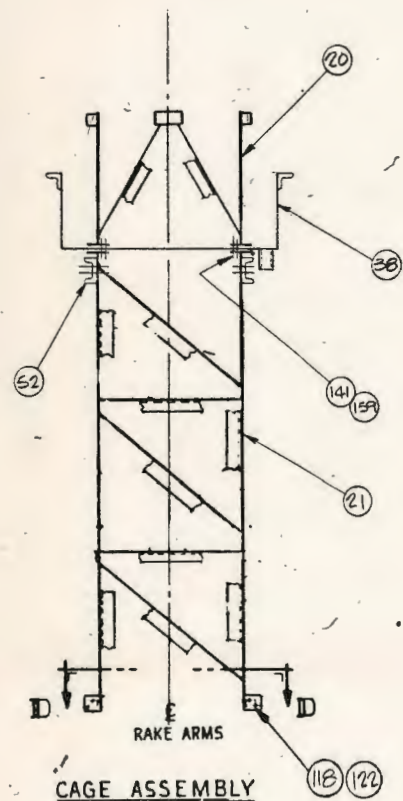
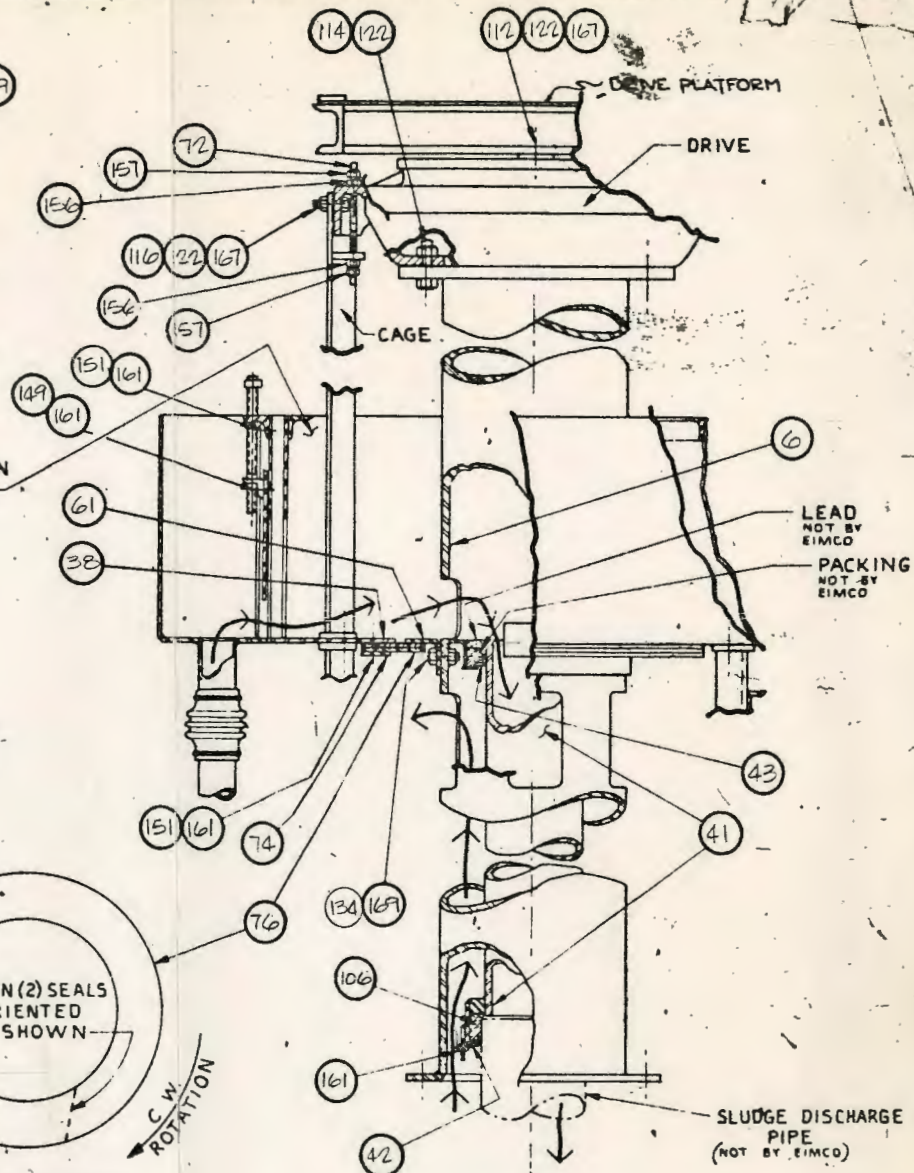
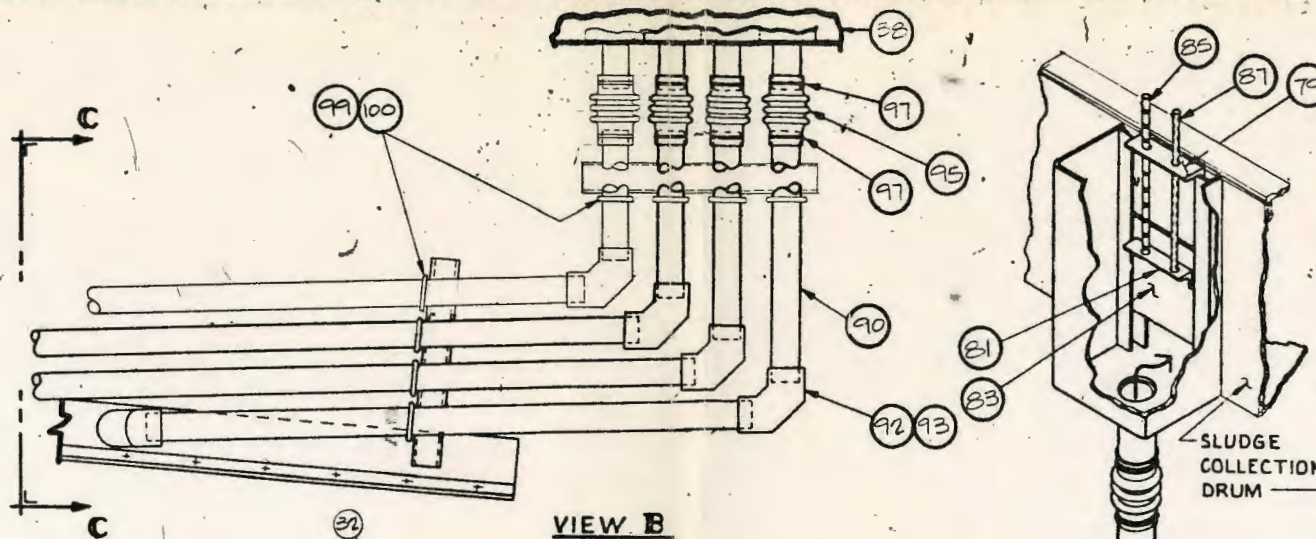
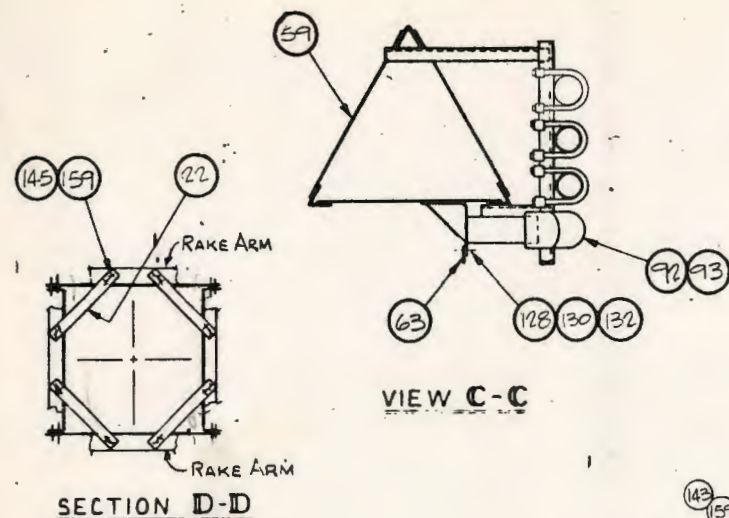


DETAIL "I"
(LEADING SIDE ONLY)

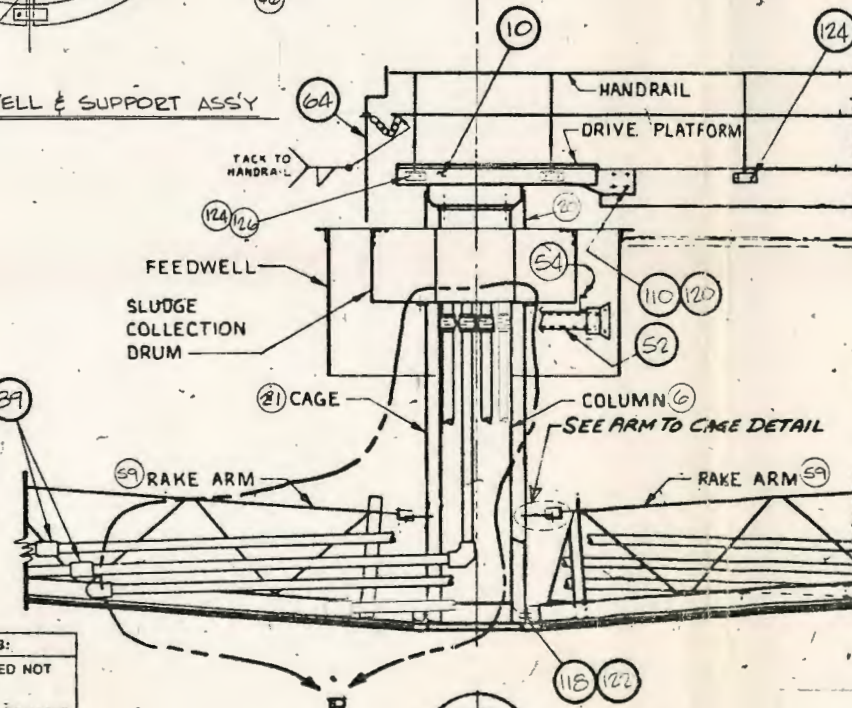
THOSE ITEMS IDENTIFIED BY BUBBLES ARE LISTED ON PARTS LIST L-22214D253
SEE DWG. 22214D254 FOR GENERAL ERECTION.

NOTE:
THE INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS MANUAL MUST BE REFERRED TO PRIOR TO STARTING ERECTION OF THIS EQUIPMENT

EIMCO PROCESSING MACHINERY DIVISION-ENVIROTECH CORPORATION-Salt Lake City, Utah	
This drawing and all information thereon is the property of Eimco and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.	
HOLD FRACTIONAL MACHINED DIMENSIONS TO $\pm 1/64"$	
30 NOT SCALE PRINTS DATE 11-12-74 DRAWN SL3 CHECKED SSW APPR. J. W. A. R. H.	CORNER RAKE MECHANISM TYPE-C20C CLARIFIER ERECTION DWG. NO. 22214D253 REV.



FOR CORNER RAKE MECH. ERECTION SEE DWG. 22214D253



NOTES:

- 1-PVC PIPE IS FURNISHED IN 20'-0" NOMINAL LENGTHS FIELD CUT AS REQUIRED.
- 2-CHAMFER ENDS OF PVC PIPE AFTER CUTTING TO LENGTH.
- 3-LUBRICATE PVC PIPE ENDS WITH SOAP SOLUTION TO FACILITATE ASSEMBLY WITH ELBOWS
- 4.SEE DWG. 22214C252 FOR SKIMMER ERECTION.
- 5.SEE DWG. 22214D253 FOR CORNER RAKE ERECTION
- 6.ITEMS IDENTIFIED BY BUBBLES ARE LISTED ON PARTS LIST L-22214D254

NOTE:
THE INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS MANUAL MUST BE REFERRED TO PRIOR TO STARTING ERECTION OF THIS EQUIPMENT

HIGH STRENGTH (H.S.) BOLTS (ASTM A325)

MUST BE USED WHERE SHOWN AND SPECIFIED.

ASSEMBLY INSTRUCTIONS. TURN-OF-NUT METHOD.

ALL JOINT SURFACES SHALL BE FREE OF LOOSE MILL SCALE, BURRS, AND FOREIGN MATERIAL.

ENOUGH BOLTS SHALL BE BROUGHT TO A "SNUG TIGHT" CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE PROPERLY COMPACTED, I.E. BROUGHT INTO FULL CONTACT WITH EACH OTHER. SNUG TIGHT SHALL BE DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH FOLLOWING THE INITIAL TIGHTENING. BOLTS SHALL BE PLACED IN ANY REMAINING HOLES IN THE CONNECTION AND BROUGHT TO SNUG TIGHTNESS.

ALL BOLTS IN THE JOINT SHALL BE TIGHTENED ADDITIONALLY BY THE APPLICABLE AMOUNT OF NUT ROTATION SPECIFIED BELOW. WITH TIGHTENING PROCEEDING SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT TO ITS FREE EDGES.

DISPOSITION OF OUTER FACES OF BOLTED PARTS:

BOTH FACES NORMAL TO BOLT AXIS OR ONE FACE SLOPED 1:20 MAX. (BEVEL WASHERS NOT USED)

BOTH FACES SLOPED NOT MORE THAN 1:20 (BEVEL WASHERS NOT USED)

NUT ROTATION IS ROTATION RELATIVE TO B.O.T. REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED.

TOLERANCE ON ROTATION: 30° OVER OR UNDER FOR OTHER THAN TURN-OF-NUT METHOD. FOLLOW PROCEDURES OUTLINED IN LATEST EDITION OF THE AISI STEEL CONSTRUCTION MANUAL.

SEPIA FROM 22041D148

EIMCO PROCESSING MACHINERY DIVISION-ENVIROTECH CORPORATION-Salt Lake City, Utah

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HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/64"

DO NOT SCALE PRINTS
DATE 11-13-74
DRAWN ALS
CHECKED SGW
APPR. LWC/LMA

GENERAL ERECTION
TYPE-C2DC
CLARIFIER

DWG. NO. 22214D254

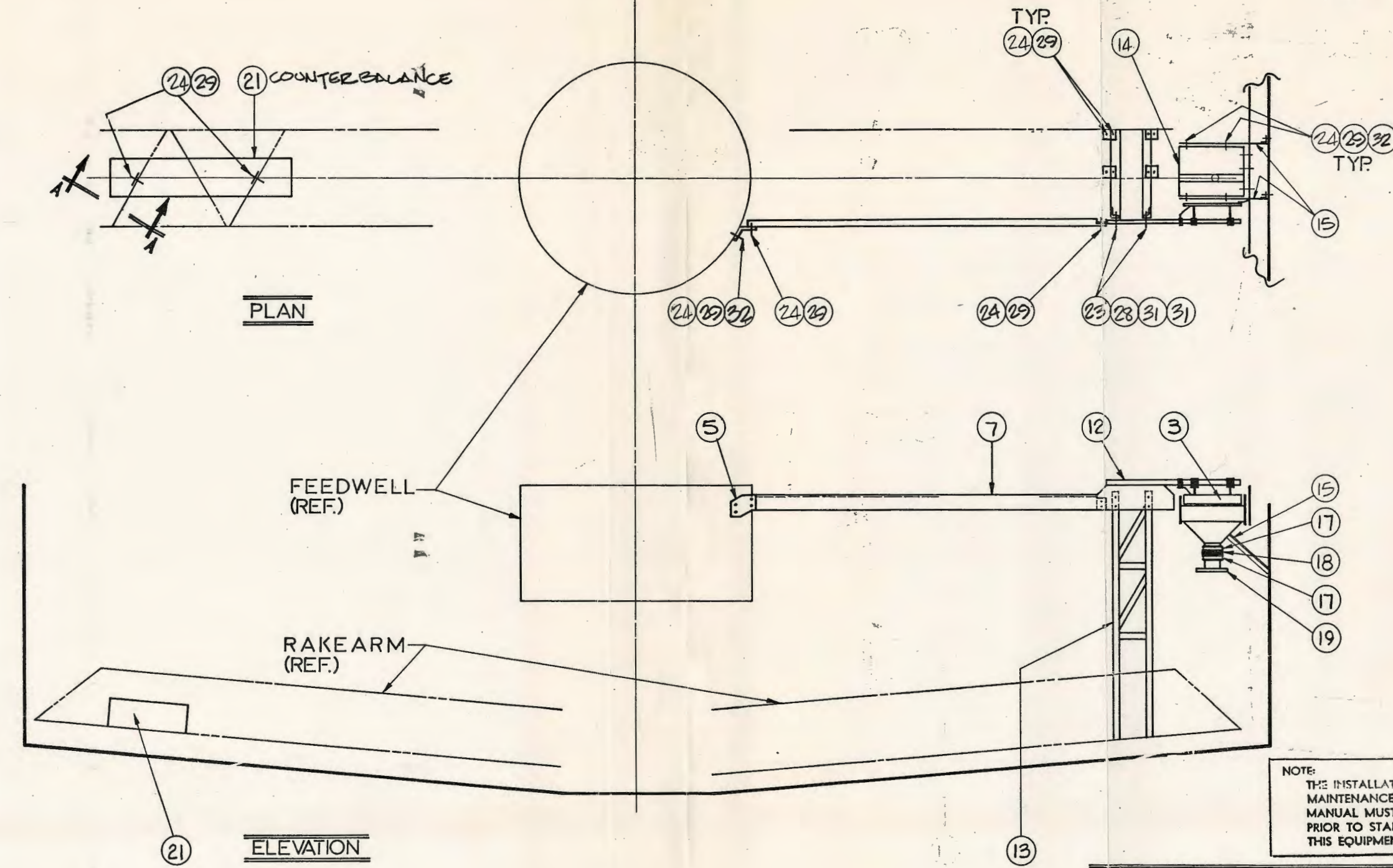
REVISION

BY CHECKED DATE

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ax
ay
az
ba
bb
bc
bd

PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/REMARKS	TOTAL WEIGHT
------------	-----------	----------	---------------------	--------------

NOTE: 2 WASHERS REQ'D FOR EA. BOLT AT SCUM BOX TO BAFFLE ONLY.

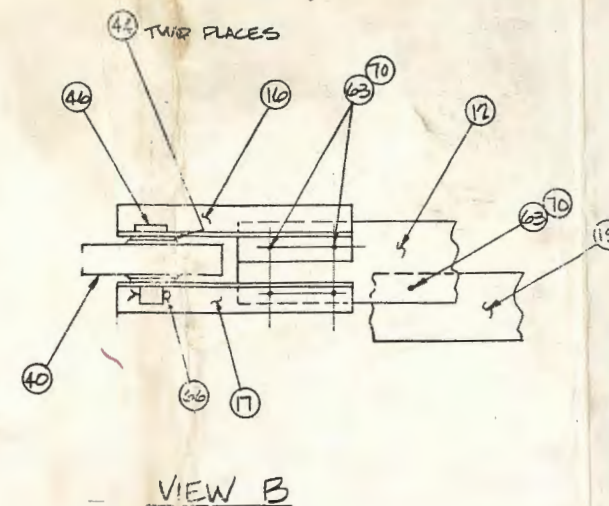
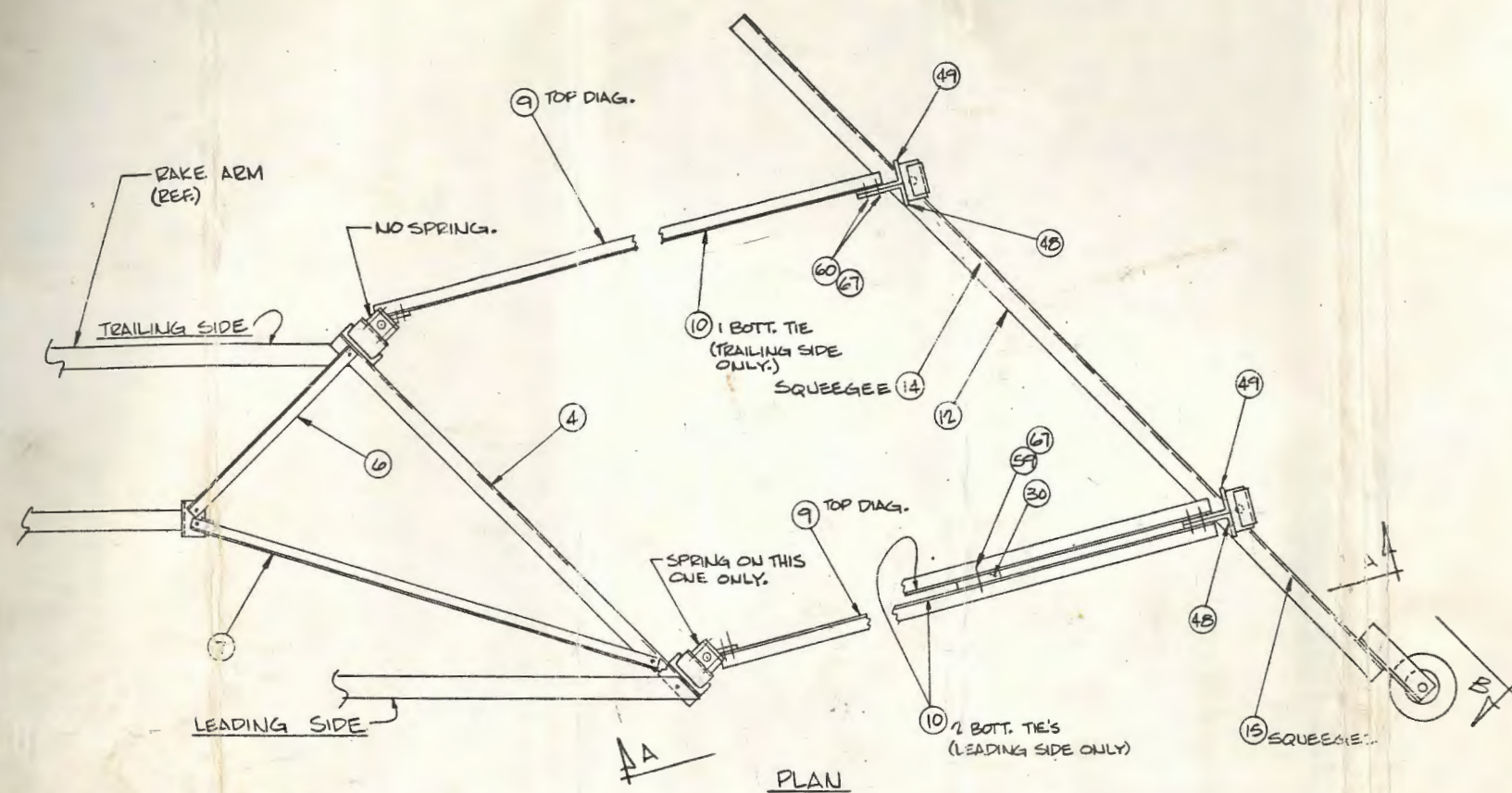


NOTE: THE INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS MANUAL MUST BE REFERRED TO PRIOR TO STARTING ERECTION OF THIS EQUIPMENT

ITEMS SHOWN WITH BUBBLES ARE ON PARTS LIST L22214C252

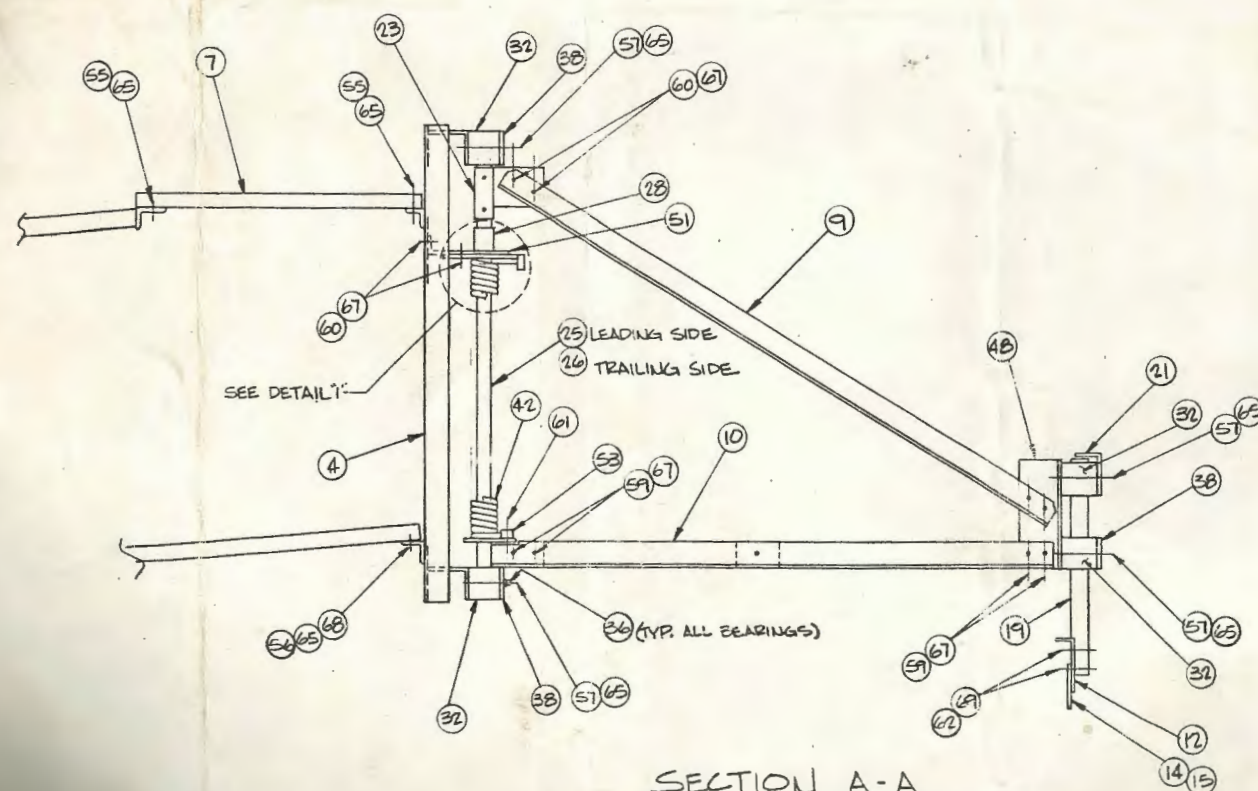
SEE DWG. 22214D254 FOR GEN. ERECTION

EIMCO ENVIROTECH		EIMCO PROCESSING MACHINERY DIVISION-ENVIROTECH CORPORATION-Salt Lake City, Utah	
This drawing and all information thereon is the property of Eimco and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.			
DO NOT SCALE PRINTS		HOLD FRACTIONAL MACHINED DIMENSIONS TO $\pm 1/64"$	
DATE	10-23-74	02	
DRAWN	B/B		
CHECK'D	SGW		
APPR.	LW/H		
		DWG. NO.	22214 C 252
		REV.	



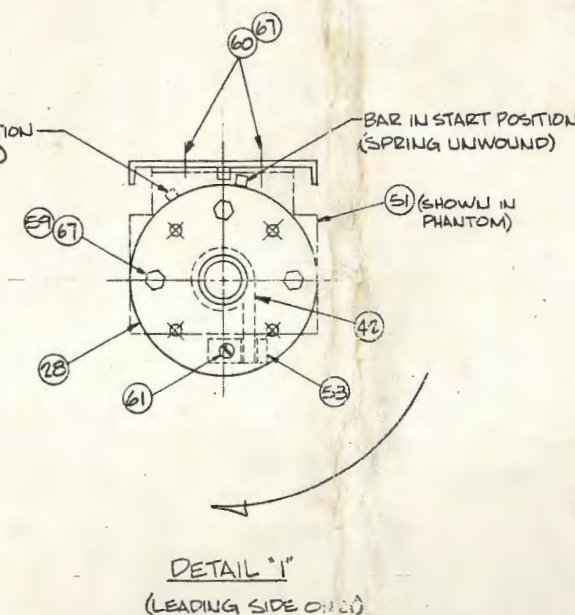
INSTRUCTIONS FOR SPRING TENSION ADJUSTMENT

1. COMPLETE ASSEMBLY OF CORNER RAKING MECHANISM, GREASE ALL BEARINGS.
2. PIVOT ARM SHAFTS SHOULD BE VERTICAL.
3. ROTATE RAKE ARM TO A SIDE WALL POSITION (END OF RAKE ARM CLOSE TO TANK WALL), SWING CORNER RAKING MECHANISM UP AGAINST TANK WALL.
4. REMOVE THE BOLTS (59) WHICH LOCK THE SPRING BRACKET (51) TO THE SPRING TENSIONER (28).
5. USING A PIPE WRENCH, TURN THE SPRING TENSIONER APPROX. ONE (1) REVOLUTION CLOCKWISE. REPLACE THE 3 BOLTS.
6. ROTATE THE RAKE ARM THROUGH ONE COMPLETE REVOLUTION AND OBSERVE OPERATION. MECHANISM MUST EXTEND SMOOTHLY INTO EACH CORNER AND HOLD ROLLER AGAINST GUIDE PLATE WITH A MIN. OF 10 LBS. FORCE IN CORNER POSITION.



NOTE: ITEMS, (28, 51, 61, 60, 42, 53, 61) LEADING SIDE ONLY.

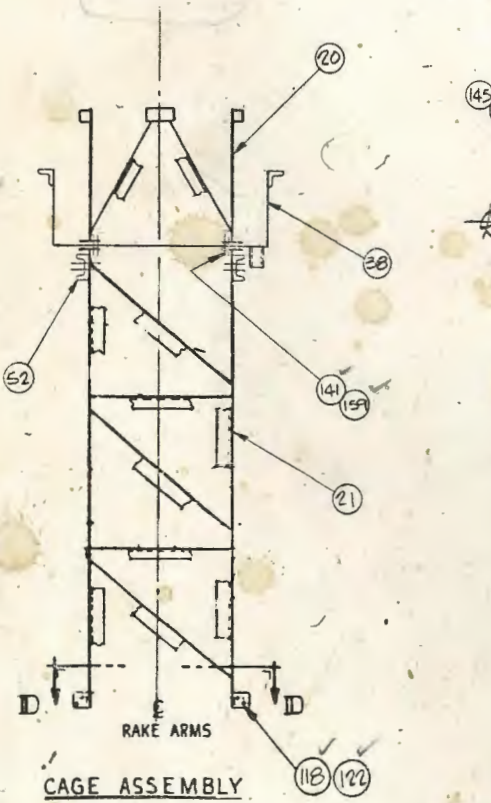
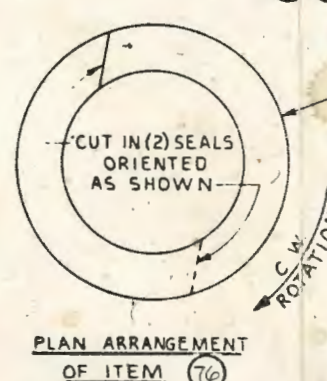
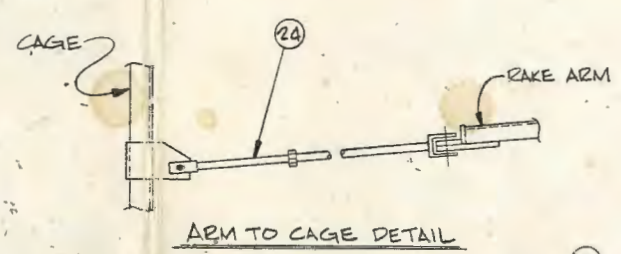
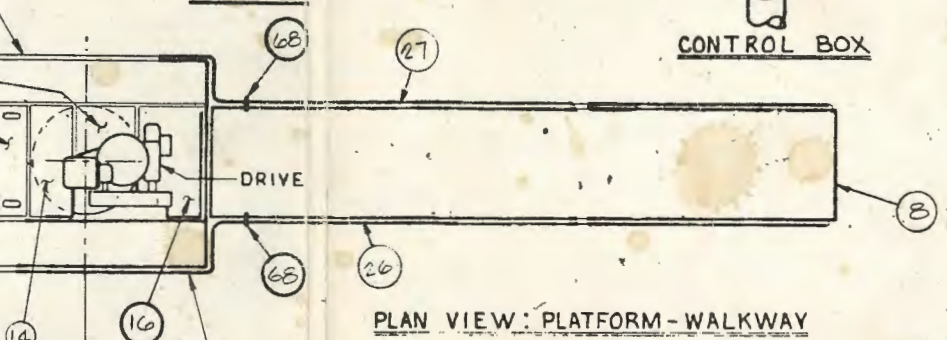
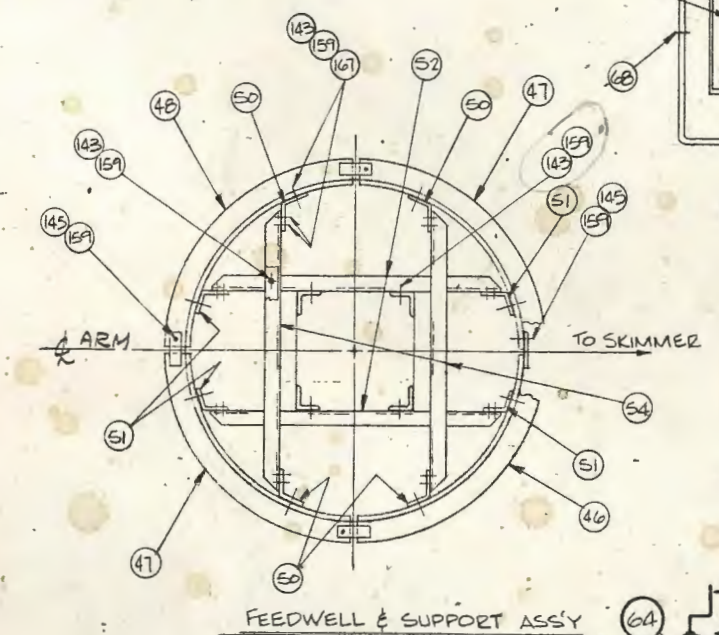
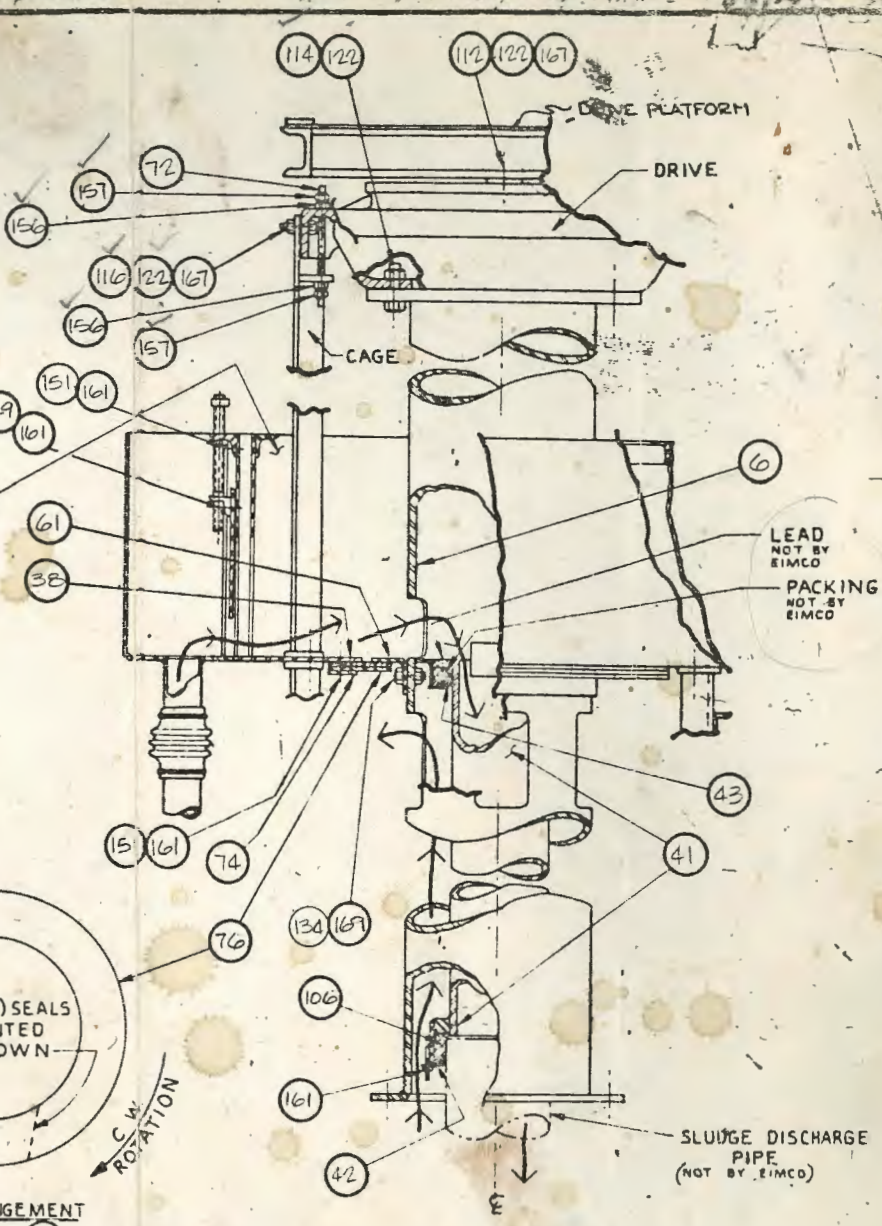
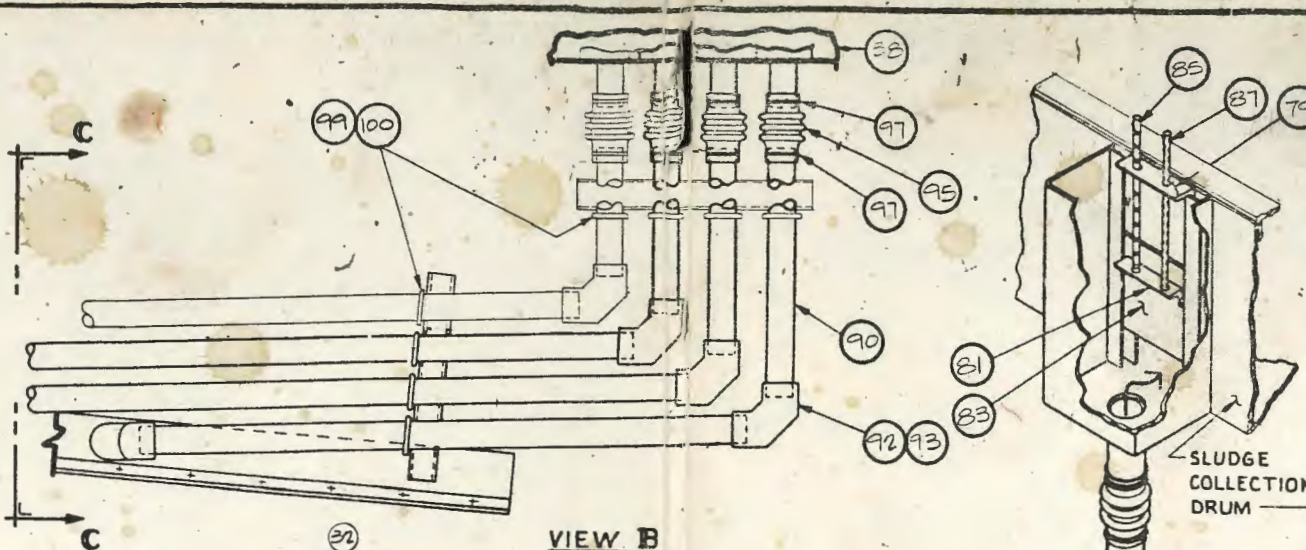
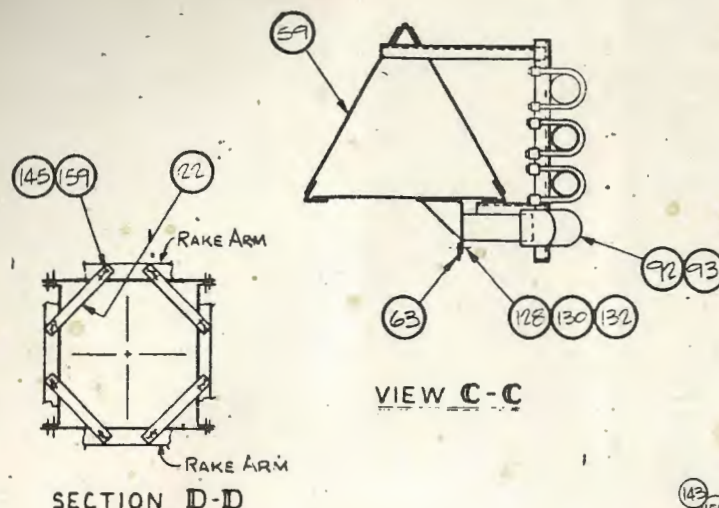
BAR IN FINISH POSITION (SPRING WOUND)



THOSE ITEMS IDENTIFIED BY BUBBLES ARE LISTED ON PARTS LIST L-222140253
SEE DWG. 222140254 FOR GENERAL ERECTION.

NOTE:
THE INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS MUST BE REFERRED TO PRIOR TO STARTING ERECTION OF THIS EQUIPMENT

EIMCO PROCESSING MACHINERY DIVISION-ENVIROTECH CORPORATION-Salt Lake City, Utah		HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/64"	
NO NOT SCALE PRINTS	DATE 11-12-74	CORNER RAKE MECHANISM	
DRAWN ALS	CHECKED SGN	TYPE-C20C CLARIFIER	
BY	CHECKED	ERECTION	
DATE	DATE	DWG NO.	REV
		222140253	



HIGH STRENGTH (H.S.) BOLTS (ASTM A325)

MUST BE USED WHERE SHOWN AND SPECIFIED.

ASSEMBLY INSTRUCTIONS. TURN-OF-NUT METHOD.

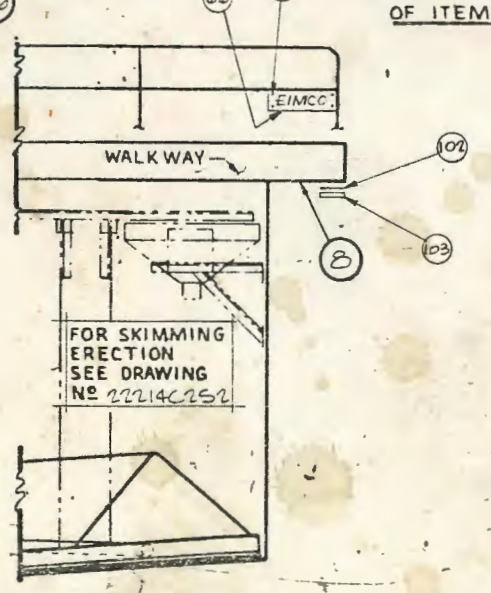
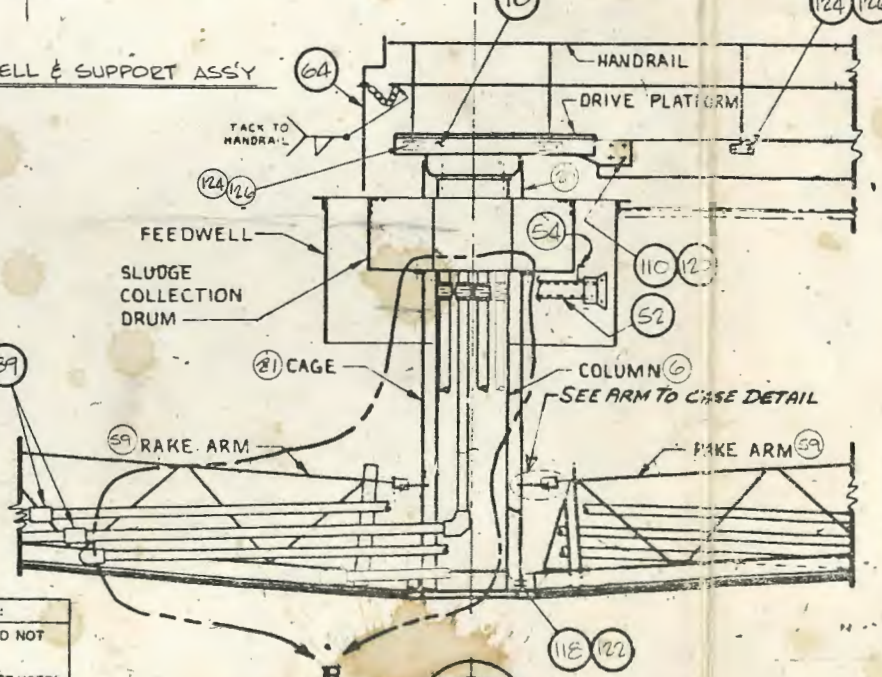
ALL JOINT SURFACES SHALL BE FREE OF LOOSE MILL SCALE, BURRS, AND FOREIGN MATERIAL.

ENOUGH BOLTS SHALL BE BROUGHT TO A "SNUG TIGHT" CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE PROPERLY COMPACTED, I.E. BROUGHT INTO FULL CONTACT WITH EACH OTHER. SNUG TIGHT SHALL BE DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH FOLLOWING THE INITIAL TIGHTENING. BOLTS SHALL BE PLACED IN ANY REMAINING HOLES IN THE CONNECTION AND BROUGHT TO SNUG TIGHTNESS.

ALL BOLTS IN THE JOINT SHALL BE TIGHTENED ADDITIONALLY BY THE APPLICABLE AMOUNT OF NUT ROTATION SPECIFIED BELOW. WITH TIGHTENING PROCEEDING SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT TO ITS FREE EDGES.

DISPOSITION OF OUTER FACES OF BOLTED PARTS:	
BOTH FACES NORMAL TO BOLT AXIS OR ONE FACE SLOPED 1:20 MAX. (BEVEL WASHERS NOT USED)	BOTH FACES SLOPED NOT MORE THAN 1:20 (BEVEL WASHERS NOT USED)
1/2 TURN	1/4 TURN
NUT ROTATION IS ROTATION RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED.	
TOLERANCE ON ROTATION: 30° OVER OR UNDER FOR OTHER THAN TURN-OF-NUT METHOD. FOLLOW PROCEDURES OUTLINED IN LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL.	

FOR CORNER RAKE MECH. ERECTION SEE DWG-222140253



FOR SKIMMING ERECTION SEE DRAWING NO 222140252

FLANGES OF INFLUENT COLUMN

OF WALKWAY

PLACE "V" NOTE AS SHOWN.

- NOTES:
- 1-PVC PIPE IS FURNISHED IN 20'-0" NOMINAL LENGTH. FIELD CUT AS REQUIRED.
 - 2-CHAMFER ENDS OF PVC PIPE AFTER CUTTING TO LENGTH.
 - 3-LUBRICATE PVC PIPE ENDS WITH SOAP SOLUTION TO FACILITATE ASSEMBLY WITH ELBOWS
 - 4.SEE DWG. 222140252 FOR SKIMMER ERECTION.
 - 5.SEE DWG. 222140253 FOR CORNER RAKE ERECTION
 - 6.ITEMS IDENTIFIED BY BUBBLES ARE LISTED ON PARTS LIST L-222140254
 - 7.
- NOTE:
- THE INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS MANUAL MUST BE REFERRED TO PRIOR TO STARTING ERECTION OF THIS EQUIPMENT

SEPIA FROM 22041048

EIMCO PROCESSING MACHINERY DIVISION-ENVIROTECH CORPORATION-Salt Lake City, Utah

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HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/64"

DO NOT SCALE PRINTS

DATE 11-13-74

DRAWN ALS

CHECKED SSW

APPR L.W.C.

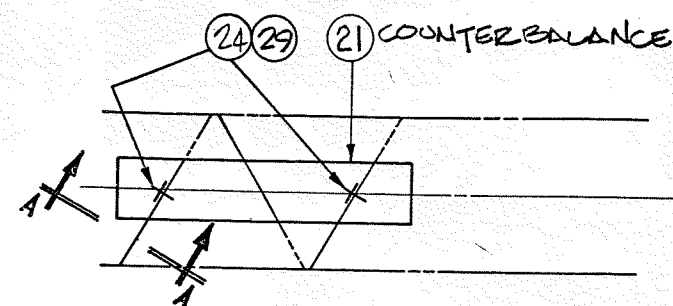
GENERAL ERECTION TYPE-C2DC CLARIFIER

DWG. NO. 222140254

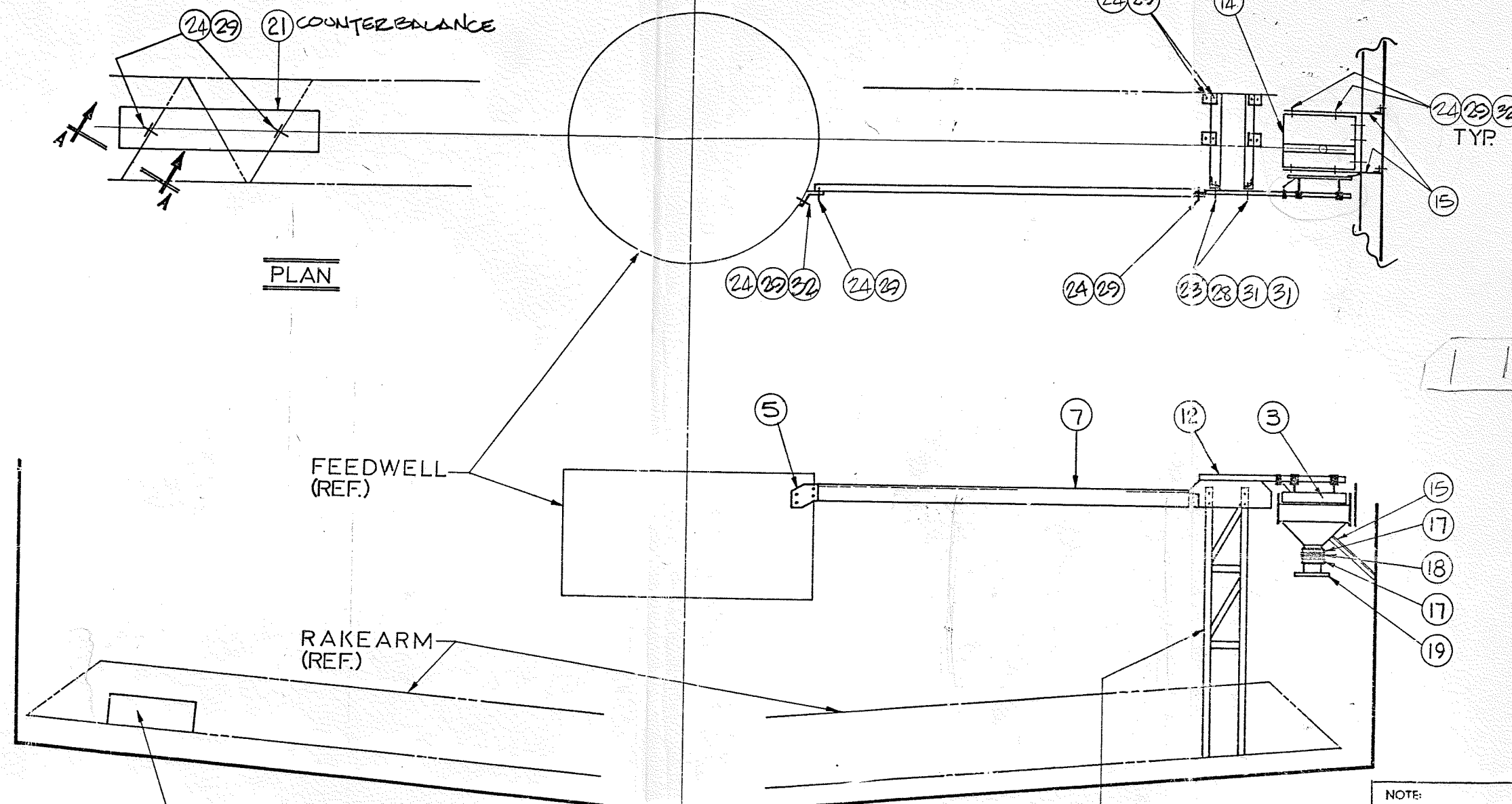
REV. 02

PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/REMARKS	TOTAL WEIGHT
---------------	--------------	----------	---------------------	-----------------

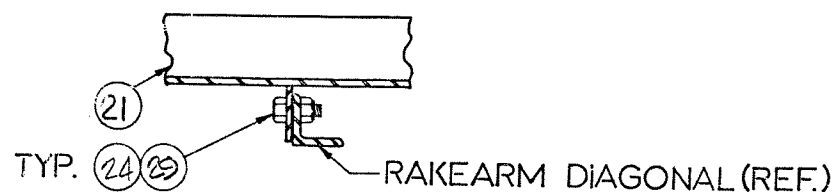
NOTE: 2 WASHERS
REQ'D FOR
EA. BOLT AT
SCUM BOX
TO BAFFLE
ONLY.



PLAN



ELEVATION



SECTION A-A

NOTE:
THE INSTALLATION, OPERATION AND
MAINTENANCE INSTRUCTIONS
MANUAL MUST BE REFERRED TO
PRIOR TO STARTING ERECTION OF
THIS EQUIPMENT

ITEMS SHOWN WITH BUBBLES
ARE ON PARTS LIST L22214C252

SEE DWG. 22214D254 FOR GEN. ERECTION

EIMCO ENVIRTECH		EIMCO PROCESSING MACHINERY DIVISION-ENVIRTECH CORPORATION-Salt Lake City, Utah	
DO NOT SCALE PRINTS		This drawing and all information thereon is the property of Eimco and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.	
DATE	10-23-74	SKIMMING MECHANISM ERECTION	02 DWG. NO. 22214 C 252
DRAWN	BBB		
CHECK'D	SGW		
APPR.	LW4/1/74		
REVISION BY CHECKED DATE		REV.	

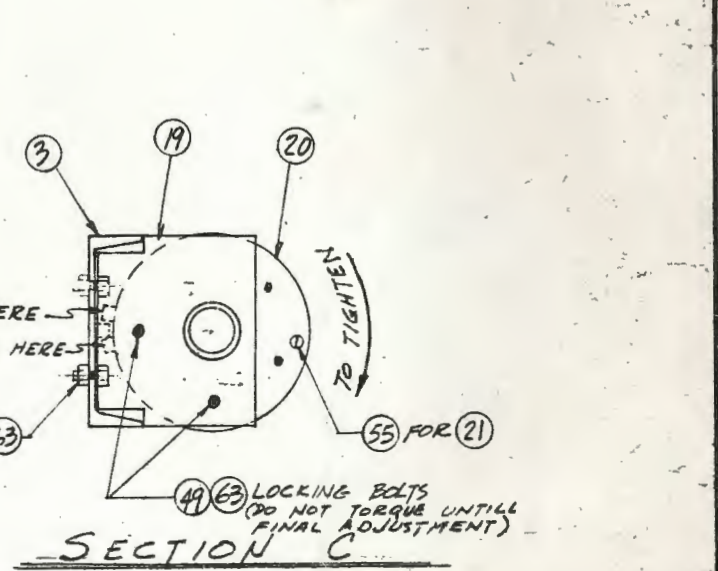
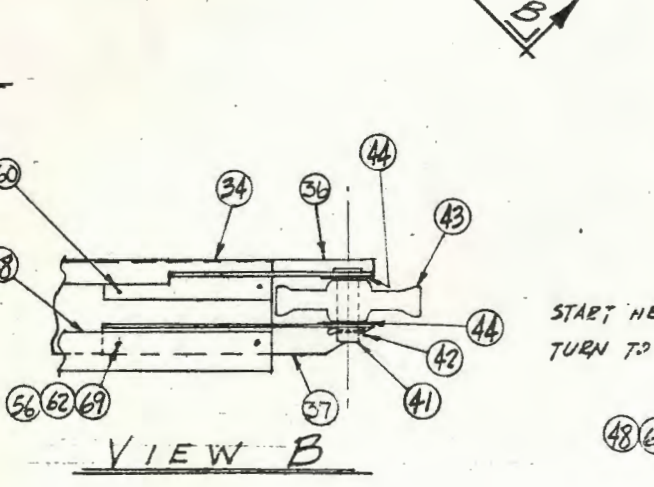
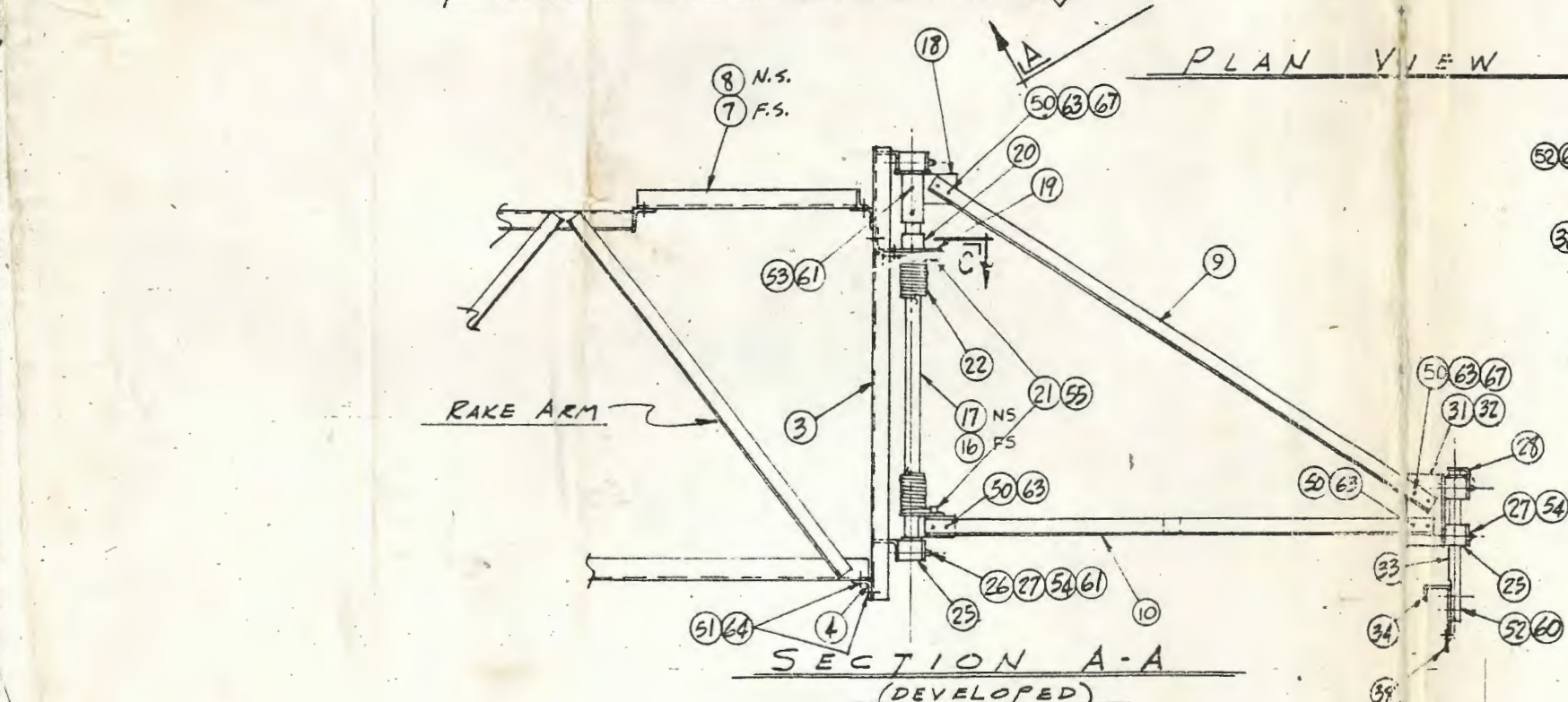
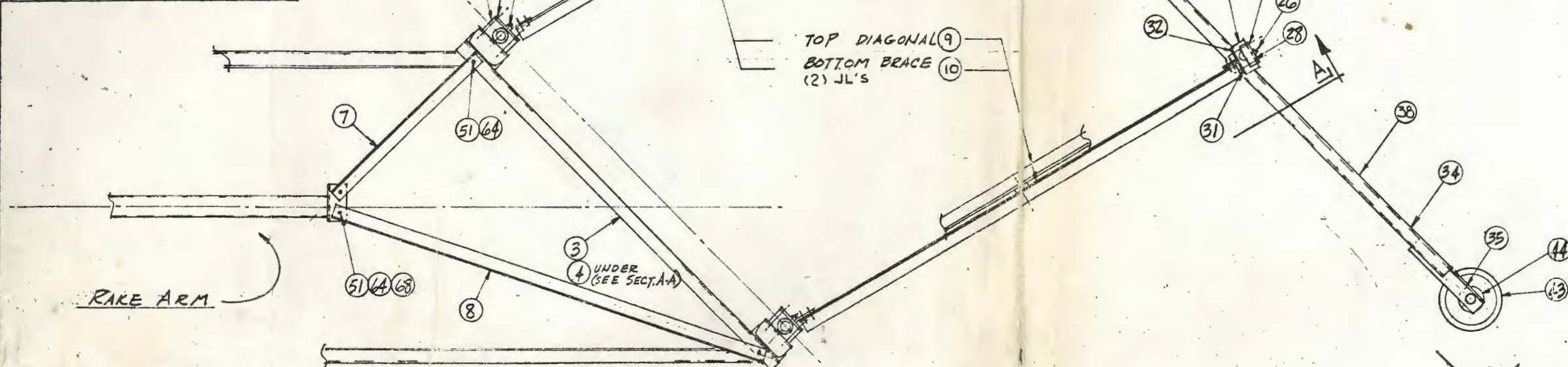
HIGH STRENGTH (H.S.) BOLTS (ASTM A325)

MUST BE USED WHERE SHOWN AND SPECIFIED.
 ASSEMBLY INSTRUCTIONS: TURN-OF-NUT METHOD.
 ALL JOINT SURFACES SHALL BE FREE OF LOOSE MILL SCALE, BURRS, AND FOREIGN MATERIAL.
 ENOUGH BOLTS SHALL BE BROUGHT TO A "SNUG TIGHT" CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE PROPERLY COMPACTED, I.E. BROUGHT INTO FULL CONTACT WITH EACH OTHER. SNUG TIGHT SHALL BE DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. FOLLOWING THE INITIAL TIGHTENING, BOLTS SHALL BE PLACED IN ANY REMAINING HOLES IN THE CONNECTION AND BROUGHT TO SNUG TIGHTNESS.

ALL BOLTS IN THE JOINT SHALL BE TIGHTENED ADDITIONALLY BY THE APPLICABLE AMOUNT OF NUT ROTATION SPECIFIED BELOW, WITH TIGHTENING PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT TO ITS FREE EDGES.

DISPOSITION OF OUTER FACES OF BOLTED PARTS:	
BOTH FACES NORMAL TO BOLT AXIS OR ONE FACE SLOPED 1:20 MAX.	BOTH FACES SLOPED NOT MORE THAN 1:20
(BEVEL WASHERS NOT USED)	(BEVEL WASHERS NOT USED)
1/4 TURN	1/4 TURN

NUT ROTATION IS ROTATION RELATIVE TO BOLT, REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED.
 TOLERANCE ON ROTATION: 30° OVER OR UNDER FOR OTHER THAN TURN-OF-NUT METHOD. FOLLOW PROCEDURES OUTLINED IN LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL.



PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/REMARKS	TOTAL WEIGHT
------------	-----------	----------	---------------------	--------------

- NOTES:**
- THOSE ITEMS IDENTIFIED BY BUBBLES ARE LISTED ON PARTS LIST L22214 D52
 - THE INSTALLATION, OPERATION, & MAINTENANCE INSTRUCTIONS MANUAL MUST BE REFERRED TO PRIOR TO ERECTION OF THIS EQUIPMENT.
 - SPRING TENSION INSTRUCTIONS ARE AS FOLLOWS:
 - COMPLETE ASSEMBLY OF CORNER RAKING MECHANISM & GREASE ALL BEARINGS.
 - ADJUST PIVOT ARM SHAFTS (17) TO BE VERTICAL.
 - ROTATE RAKE ARM TO A SIDE WALL POSITION (END OF RAKE ARM CLOSE TO TANK WALL), SWINGING CORNER RAKING MECHANISM BACK AGAINST WALL.
 - REMOVE THE BOLTS WHICH LOCK THE SPRING BRACKET (19) TO THE SPRING TENSIONER (20) (SEE SECTION C).
 - USING A PIPE WRENCH, TURN THE SPRING TENSIONER APPROXIMATELY ONE REVOLUTION CLOCKWISE THEN REPLACE THE TWO LOCKING BOLTS.
 - ROTATE THE RAKE ARM THROUGH ONE COMPLETE REVOLUTION & OBSERVE OPERATION. MECHANISM MUST EXTEND SMOOTHLY INTO EACH CORNER & HOLD ROLLER AGAINST GUIDE PLATE WITH A MINIMUM OF 10 LBS OF FORCE IN MOST EXTENDED POSITION.

SEPIA FROM 2211BD544

EIMCO PROCESSING MACHINERY DIVISION-ENVIROTECH CORPORATION-Salt Lake City, Utah

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HOLD FRACTIONAL MACHINED DIMENSIONS TO 2 1/64"

DO NOT SCALE PRINTS

DATE: 10-9-72

DRAWN: W. E. 3

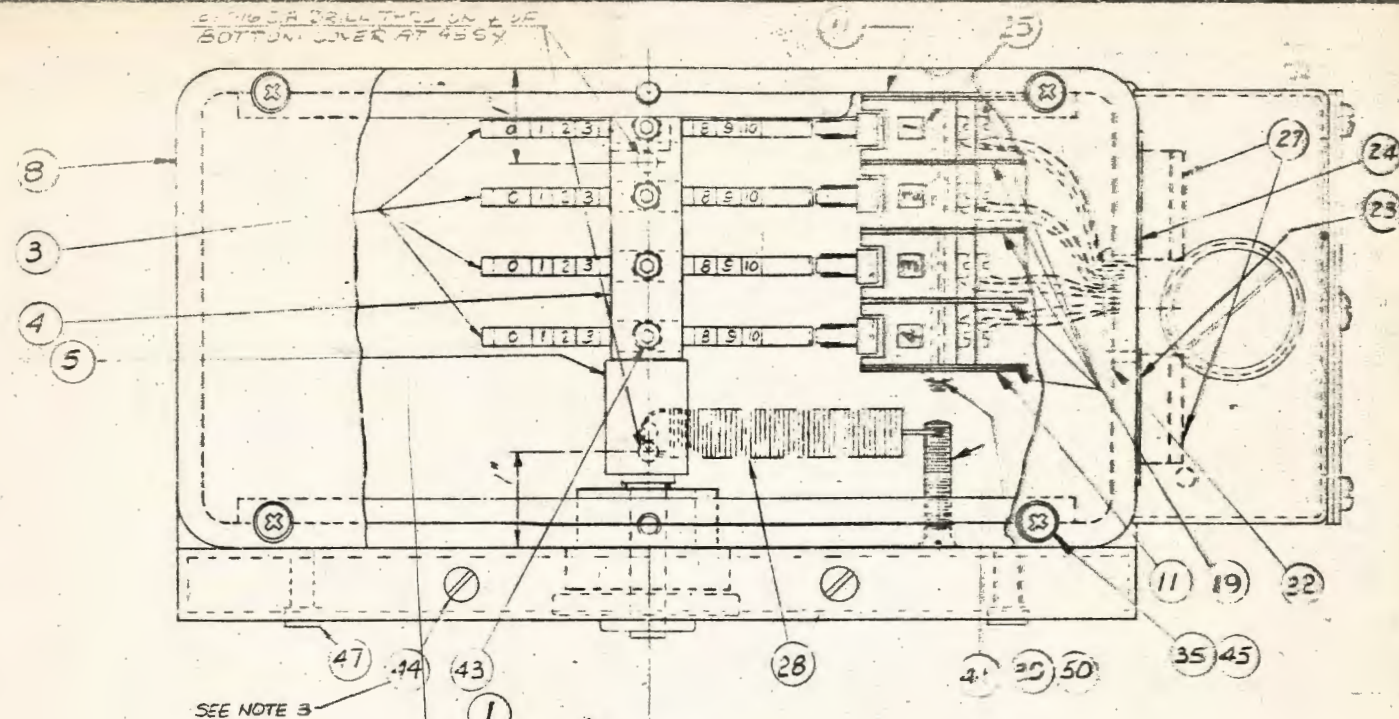
CHECKED: J. W.

APPROVED: J. W.

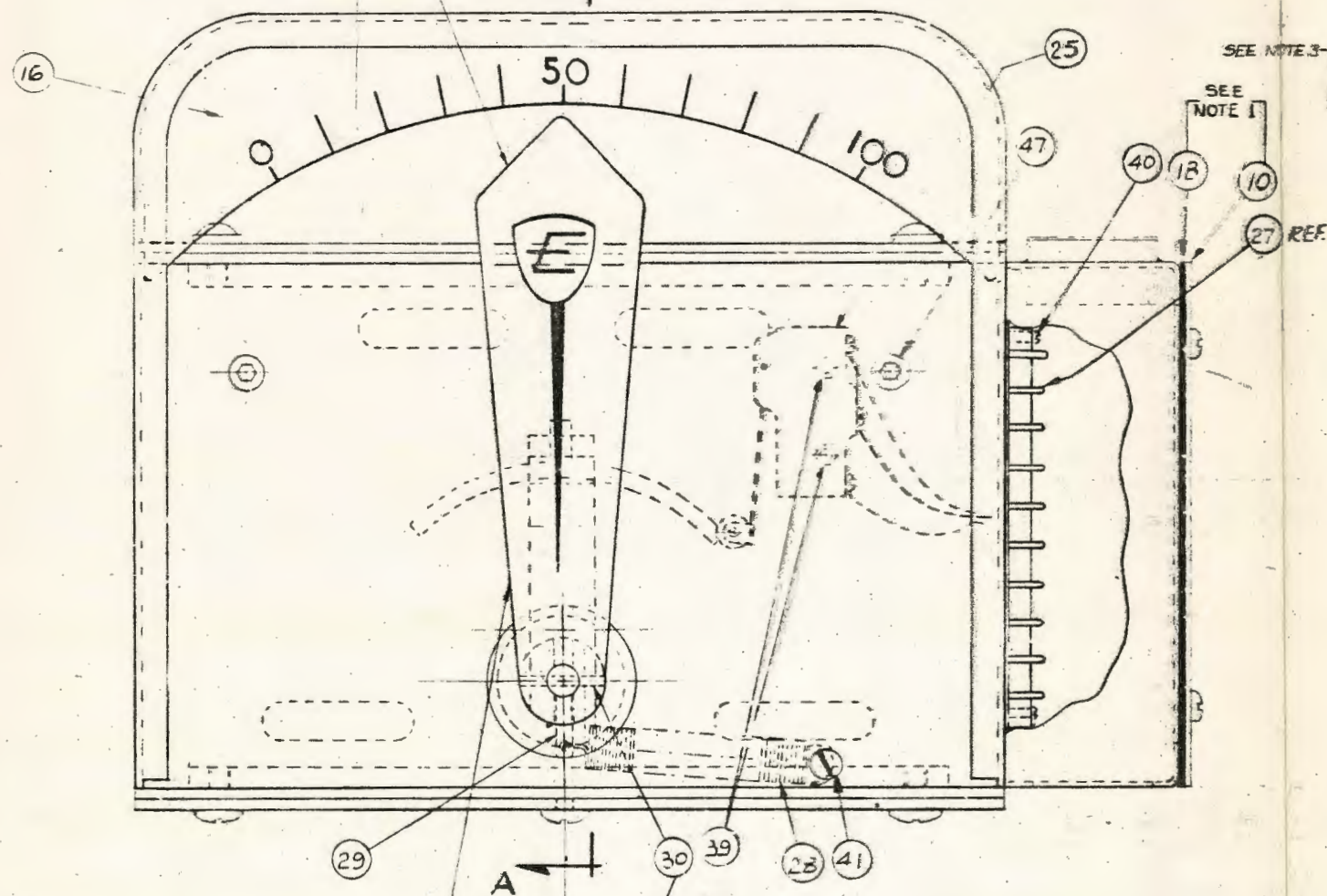
ASSEMBLY FOR CORNER RAKING MECH.

DWG. NO. 22214D52

REV. 01

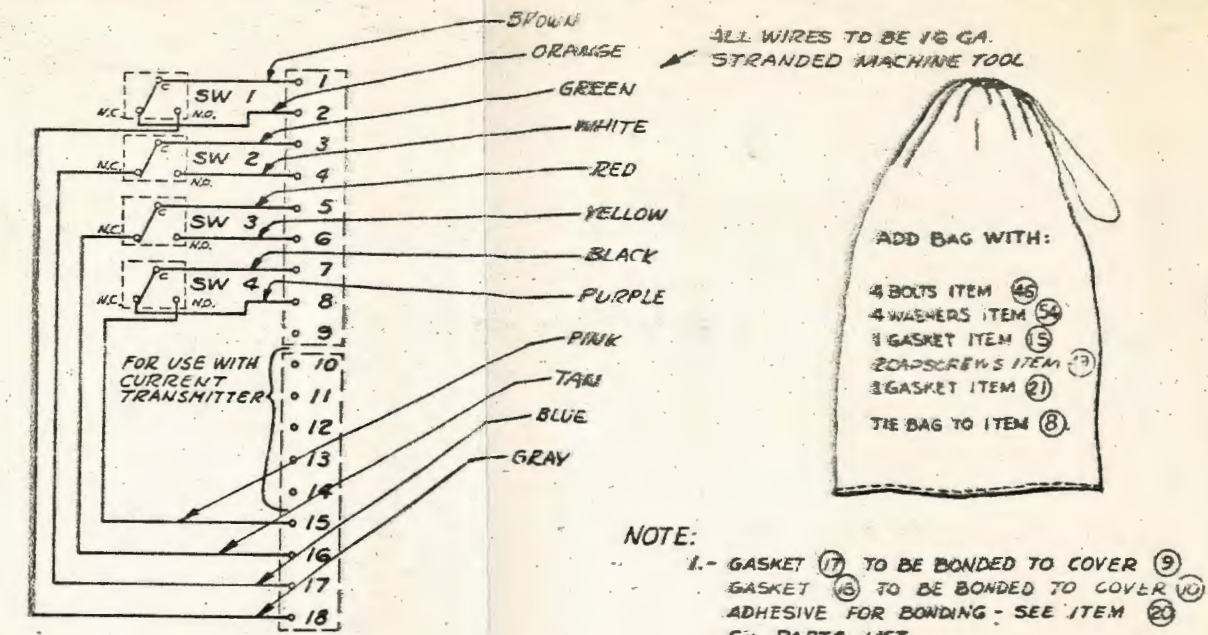


SEE NOTE 3



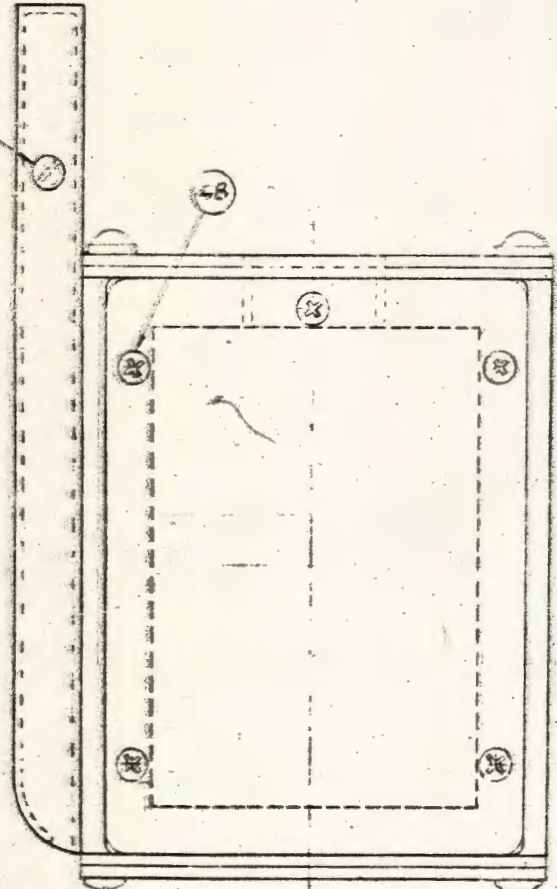
NOTE: POINTER SPRING LEADS ETC ARE SHOWN AT 50% ACTUATION

NOTE: INSTALL POINTER, 1 TO SHAFT 25. DRILL 1/8 DIA. HOLE THRU BOTH & INSTALL PIN 26 TO LOCK.

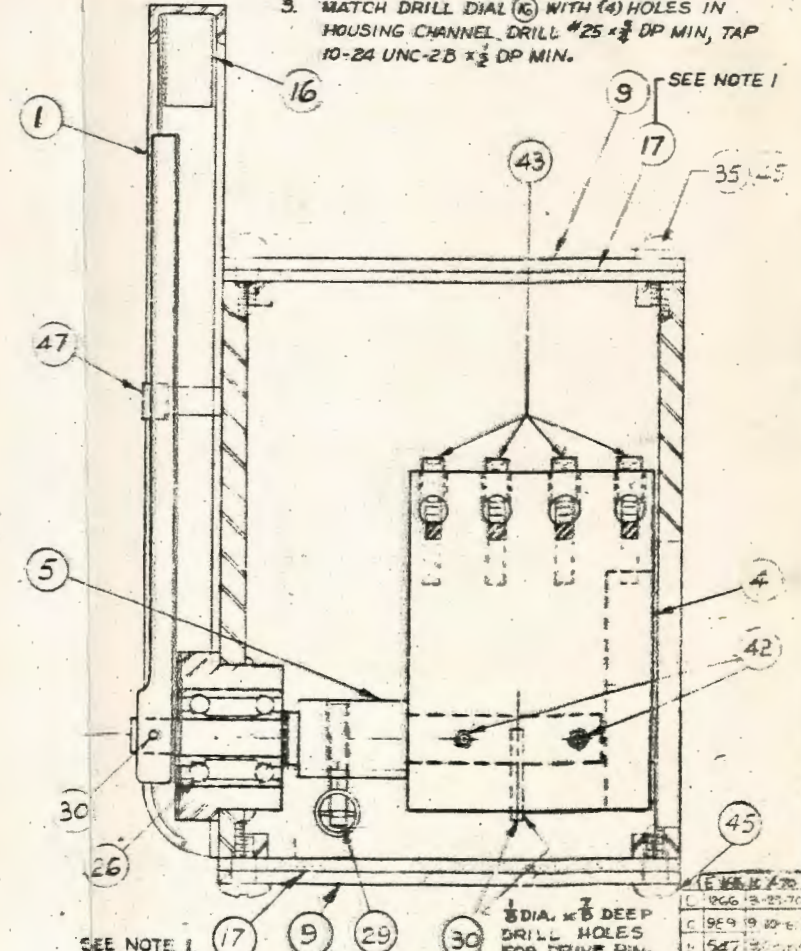


INTERNAL WIRING DIAGRAM

- NOTE:
1. GASKET 17 TO BE BONDED TO COVER 9. GASKET 18 TO BE BONDED TO COVER 10. ADHESIVE FOR BONDING - SEE ITEM 20 ON PARTS LIST.
 2. BEFORE SHIPPING, PLUG 1/2 C'PLG WITH "CAPUG" AND PACK ASSEMBLY IN STURDY CARDBOARD CONTAINER WITH N2L110685 CLEARLY MARKED ON THE OUTSIDE.
 3. MATCH DRILL DIAL 16 WITH (4) HOLES IN HOUSING CHANNEL. DRILL #25 x 1/8 DP MIN, TAP 10-24 UNC-2B x 1/2 DP MIN.



PARTS LIST L 110685



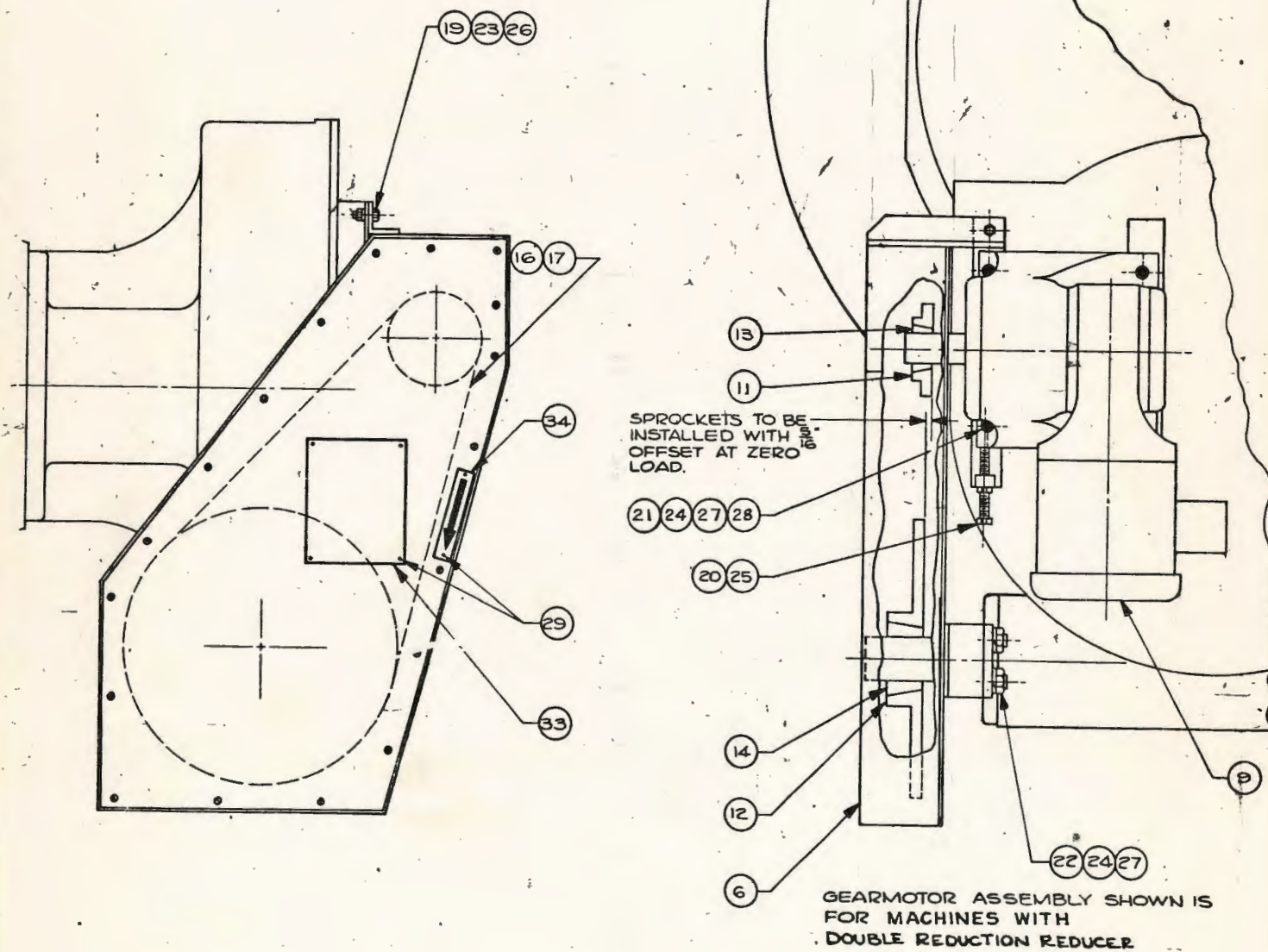
SEE NOTE 1

SECTION AA

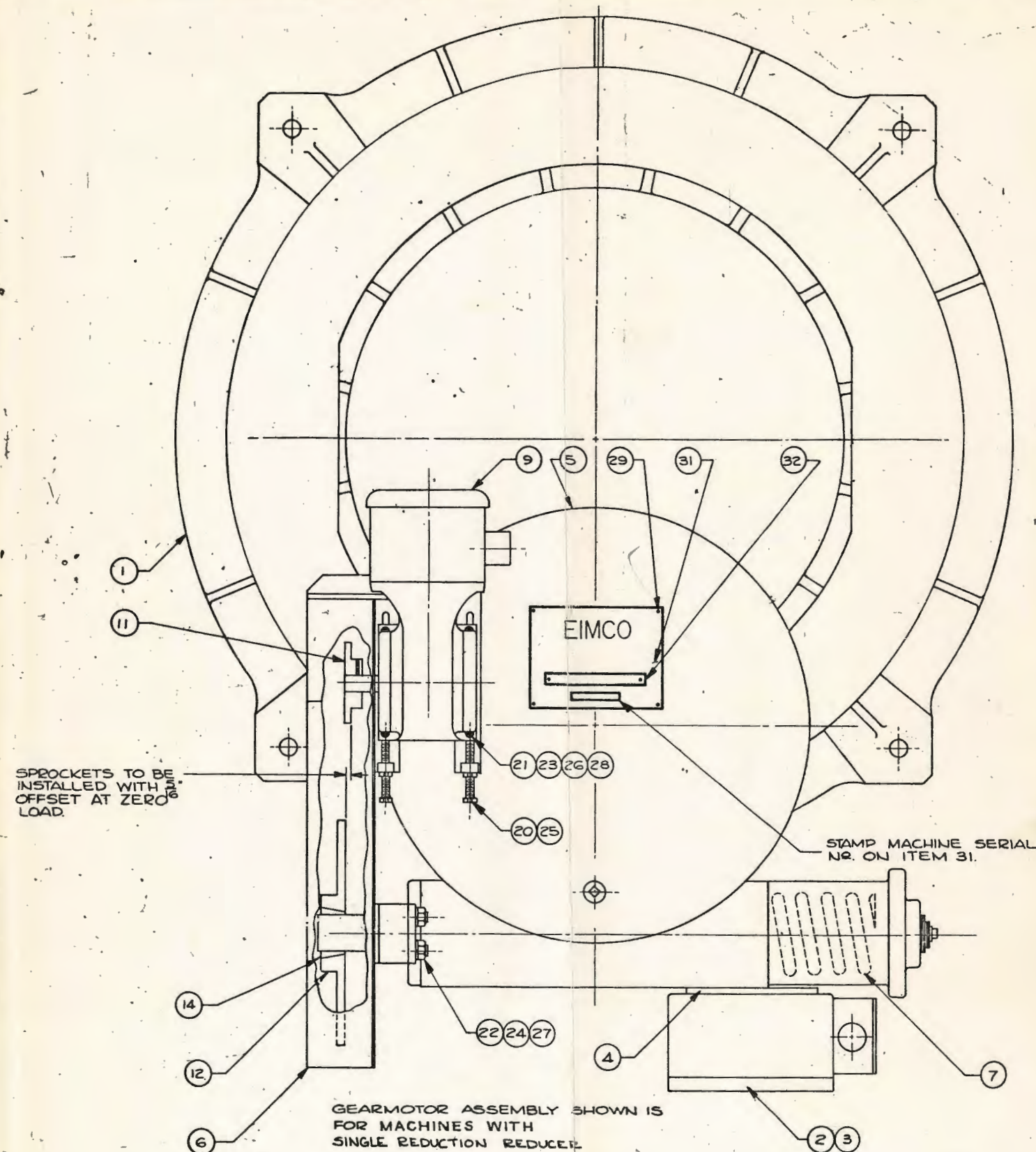
THE FINEO CORPORATION Salt Lake City, Utah

DRIVE CONTROL ASSEMBLY (RIGHT HAND W/O TRANSMITTER)

110685



USE THIS ASSEMBLY!



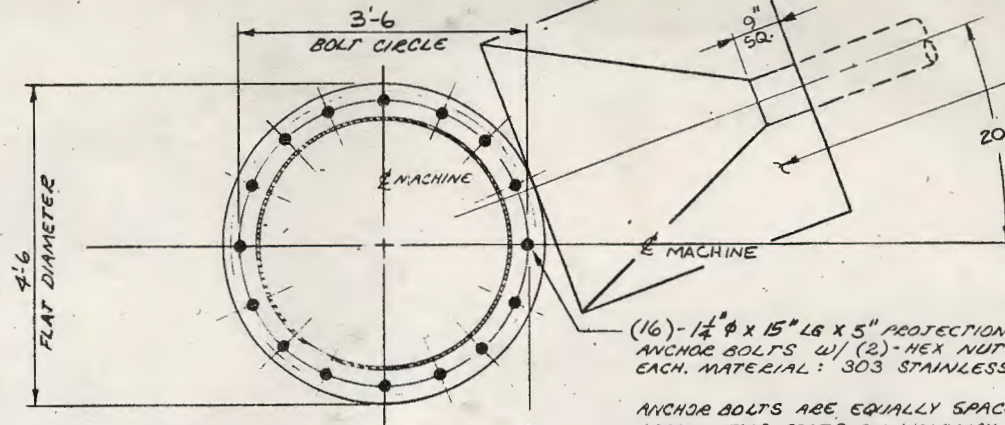
SEE PARTS LIST # L 22214 D232

SEPIA FROM 112196

THE EIMCO CORPORATION Salt Lake City, Utah

DATE	6-11-74	DRIVE UNIT PACKAGE	02
BY	K.T.	CLARIFIER AND CLARITHICKENER	
CHKD	C.H.A.	WITH C30	
APPD	R.D.	DRIVE	
REVISION			22214-D232

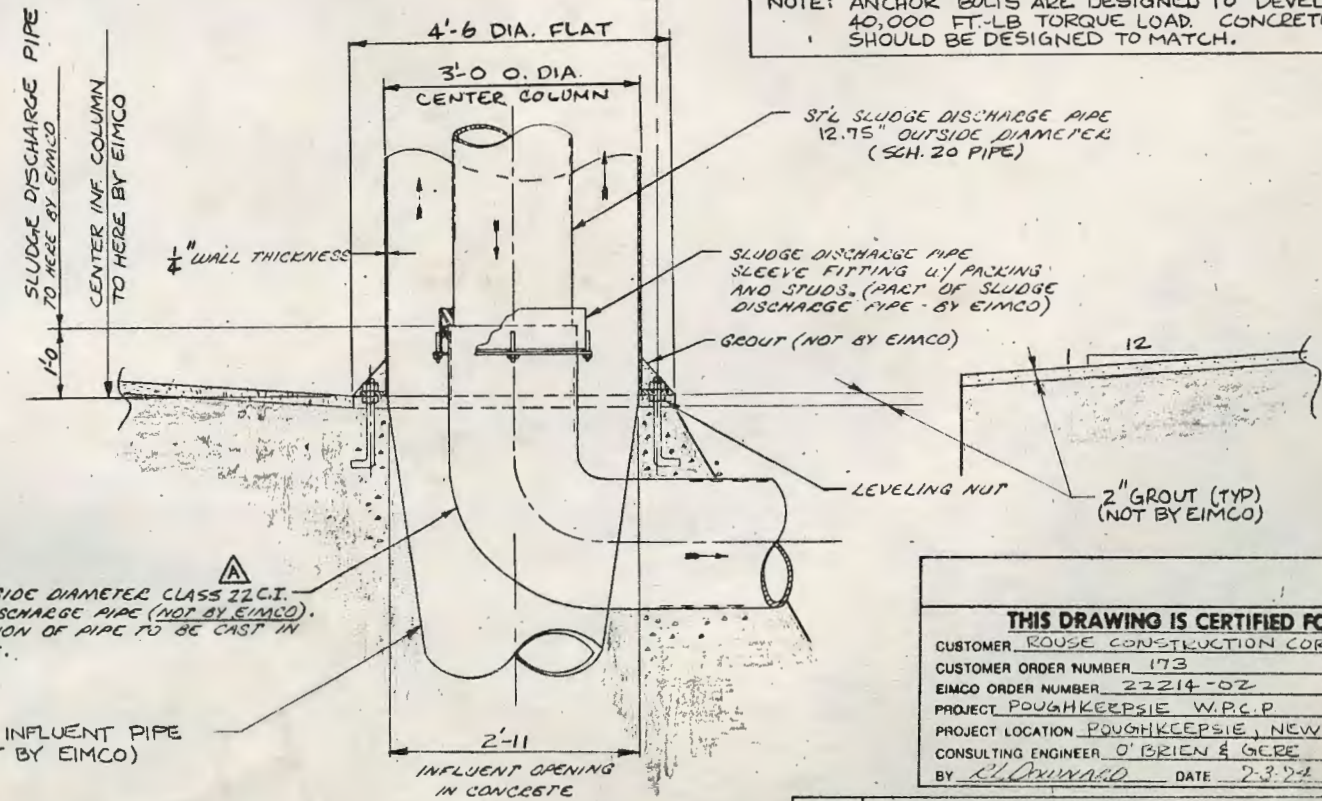
PIECE MARK	NO. REQ'D	MATERIAL
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(16) - 1/4" ϕ x 15" LG x 5" PROTECTION ANCHOR BOLTS w/ (2) - HEX NUTS EACH. MATERIAL: 303 STAINLESS ST'L

ANCHOR BOLTS ARE EQUALLY SPACED. LOCATE TWO BOLTS ON WALKWAY CENTER LINE.

NOTE: ANCHOR BOLTS ARE DESIGNED TO DEVELOPE 40,000 FT.-LB TORQUE LOAD. CONCRETE SHOULD BE DESIGNED TO MATCH.



THIS DRAWING IS CERTIFIED FOR	
CUSTOMER <u>ROUSE CONSTRUCTION CORP.</u>	
CUSTOMER ORDER NUMBER <u>173</u>	
EIMCO ORDER NUMBER <u>22214-02</u>	
PROJECT <u>POUGHKEEPSIE W.P.C.P</u>	
PROJECT LOCATION <u>POUGHKEEPSIE, NEW YORK</u>	
CONSULTING ENGINEER <u>O'BRIEN & GORE</u>	
BY <u>AL DUNNARD</u>	DATE <u>2-3-74</u> EIMCO



EIMCO PROCESSING MACHINERY DIVISION-ENVIROTECH CORPORATION-Salt Lake City, Utah

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HOLD FRACTIONAL MACHINE DIMENSIONS TO $\pm 1/64"$

DO NOT SCALE PRINTS
DATE <u>6/20/74</u>
DRAWN <u>LWC</u>
CHECK'D <u>TWP</u>
APPR <u>RLD</u>

CRDC CLARIFIER CENTER COLUMN MOUNTING ARRANGEMENT		02
DWG NO	22214C205	REV

CHANGED DISCHARGE PIPE MAT'L PER CUSTOMER REQ.	LWC	RLD	9-30-74
REVISION	BY	CHECKED	DATE


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WATER

GLV AROUND THE WORLD

Eimco Water Technologies
2010 Winston Park Drive Suite 300
Oakville (Ontario) L6H 5R7

Phone: +1-905-491-2750
Fax: +1-905-491-2790
Email: info.ewtca@glv.com



Eimco Water Technologies LLC
2404 Rutland Drive, Suite 200
Austin (Texas) 78758

Phone: 512-834-8000
Fax: 512-834-8039
Email: info.ewt@glv.com



Eimco Water Technologies LLC
4255 Lake Park Blvd Suite 100
Salt Lake City (Utah) 84120-8201

Phone: + 801 931 3000
Fax: + 801 931 3080
Email: info.ewt@glv.com



Eimco Water Technologies LLC
1335 Regent Park Drive, Suite 260
Houston (Texas) 77058

Phone: 1-281-460-7955
Fax: 1-281-460-8225
Email: info.ewt@glv.com



NORTH AMERICAN
OPERATING SERVICES
PHONE: 845-471-8165
FAX: 845-471-5498

CITY of Poughkeepsie
WASTE TREATMENT PLANT
173 KITTREDGE PLACE
POUGHKEEPSIE, NY 12602

FAX

TO: DORR-OLIVER EIMCO

Attn: ~~Quentin~~

FAX # (705) 325-4487

Phone # (888) 878-4726

GL+V Eimco Water Tech

Dave Cavan

1-905-491-2767 Parts

1-905-491-2790 Fax

FROM: Thomas Drugan

DATE: 1/27/06

OF PAGES: 1

SUBJECT: Type C2TC 82'Sq x 10' SWD Clarithickener Parts

Serial Numbers 22214-01 A&B

MESSAGE: Request price and availability of the following parts:

Part List # L42700-3

P/N	Desc.	Qty.
42661A	Scraper Arm	3

Part List # L22214D52

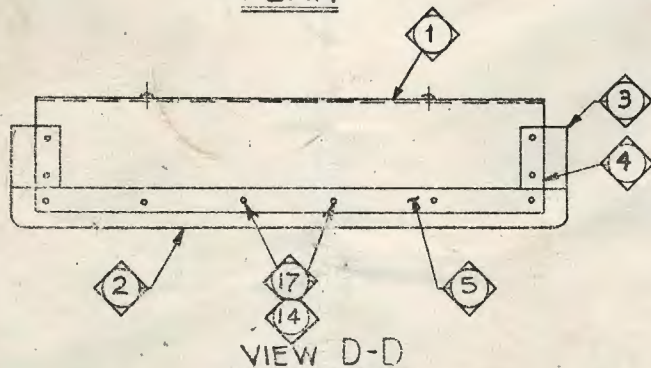
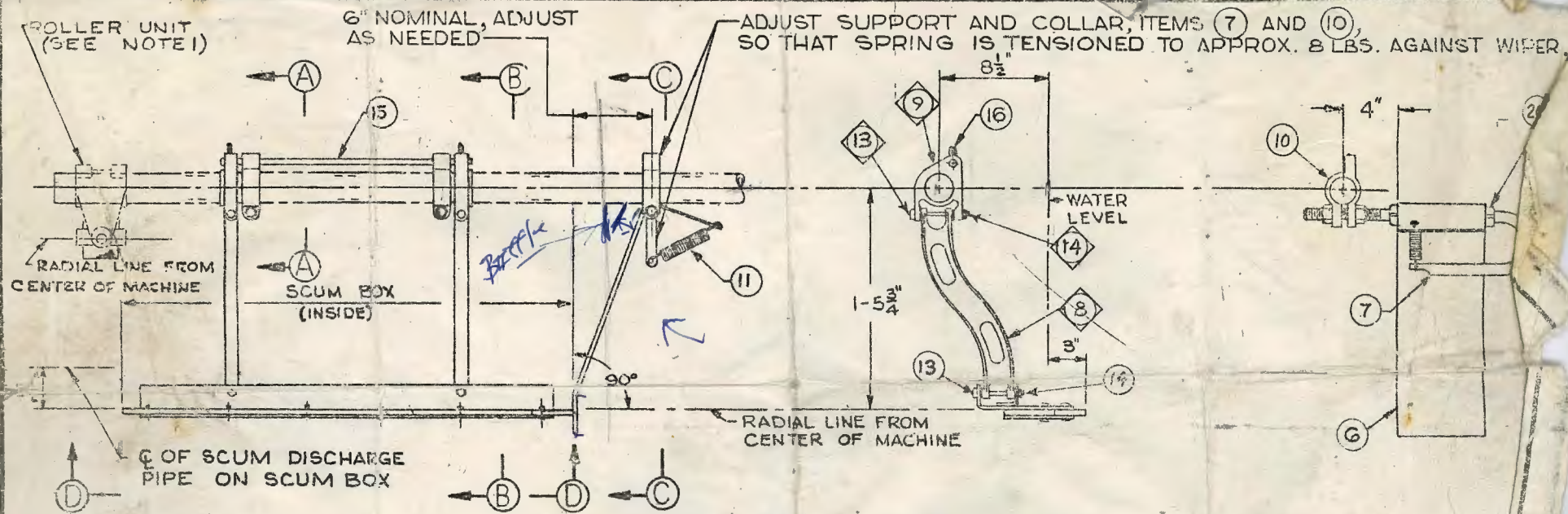
P/N	Desc.	Qty.
84165A	Bearing	4
73477A354A	Corner Blade Shaft	2
22214B89A	Corner Rake Blade	1
72615B246A	Upper Wheel Support	1
72615B246B	Lower Wheel Support	1
86624A	Wheel Axle	2
86147A	Wheel	1
86622A	Wheel Washers	4

Thank you,

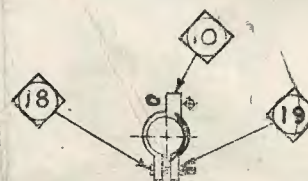
Thomas Drugan
Maintenance Manager

VIVENDI
water company

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SECTION B-B



SECTION C-C

PART LISTS	
L 42700-1	(20 LG UNIT)
L 42700-2	(30 LG UNIT)
L 42700-3	(40 LG UNIT)
L 42700-4	(50 LG UNIT)
L 42700-5	(60 LG UNIT)

NOTE:

1. ROLLER UNIT PART NO L46378 IS USED ONLY WHEN REQUIRED. REFER TO JOB G.A. DRAWING
2. DENOTES SHOP ASSEMBLED

THE EMCO CORPORATION Salt Lake City		HOOPER & PATTERSON MACHINED CEMENT TO F 1 54	
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DO NOT SCALE PRINTS		SKIMMING DEVICE ASSEMBLY FOR SQUARE SCUM BOXES	
DATE	REP 10-25-65	ORDER No.	
DR'WN	T.T.M.	DATE ISSUED	
CHK'D	Y/C	DRAWN	
APPR	W/J		



Operation & Maintenance Manual - Clarifier Drive Model "030-BF"
Upgrade - dated at 02/08/2000



Operation & Maintenance Manual

Clarifier Drive Model "D30-BF"

Retrofit

Serial Number: 90BJ3B3-90BJ603

Purchase Order Number: 0823-1121

GMH

POUGHKEEPSIE WWTP

POUGHKEEPSIE, NY

Date Issued: 02/08/00

Prepared by: 

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- Lubrication Instructions
- Drive Drawing
- Components List
- Recommended Spare Parts List
- Liquid Level Indicator
- Disassembly/Assembly Procedures
- Installation Procedure
- Trouble Shooting Guide

SECTION 2 PRIMARY REDUCER

- General Hydraulic Schematic
- Hydraulic Pump
- Hydraulic Motor
- Needle Valve
- Relief Valve
- Type F Reducer Adapter Coupling

SECTION 3 INTERMEDIATE AND FINAL REDUCERS

- Planetary Gearbox Overhaul Procedures
- Planetary Gearbox Parts List
- Final Gear/Bearing Drawing

SECTION 4 ELECTRICAL COMPONENTS AND INSTRUMENTATION

- Electric Motor
- Torque Gauge Assembly
- Alarm & Cutoff Switch
- 4-20ma Torque Transmitter – Optional

SATISFACTION SURVEY

Customer Service Registration And Satisfaction Survey¹

Complete and return this form to DBS Manufacturing, Incorporated.

This information will be included in our customer database to provide you with technical service support.

General Information

Name: _____

Job Function: _____

Company Name: _____

Address: _____

Telephone number: _____

Fax number: _____

Information About Your Facility

How many clarifiers are at your facility? _____

Are you looking for retrofit replacement in the next two years? _____

(If yes, what are the models?) _____

Satisfaction Survey

From where did you hear about DBS? _____

Are you satisfied with DBS drive units? _____

How do you compare our product to that of other manufacturers?

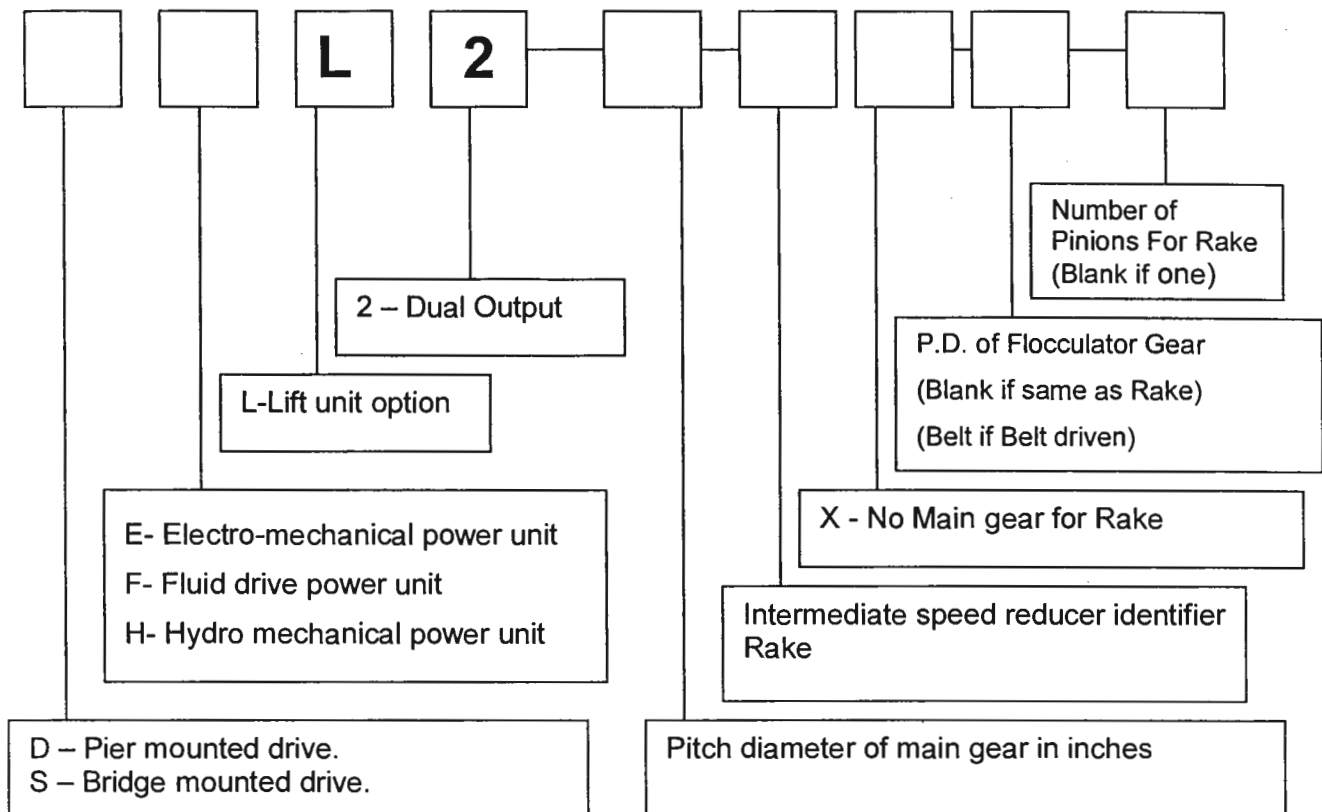
Would you recommend DBS drive units to an associate? _____

How can we better serve you? _____

¹ DBS Manufacturing, Inc. 5421 Hillside Drive, Forest Park, GA 30050

Tel: 404-768-2131 Fax: 404-761-6360

DBS Drive Model Identification



EXAMPLE: DF-30-12

A center pier mounted drive with a DBS fluid power unit. The main gear pitch diameter is 30 inches. The intermediate speed reducer is a type A120 planetary gearbox.

EXAMPLE: SE-7X

A bridge mounted shaft drive with an electro-mechanical power unit. The intermediate speed reducer is a S7A planetary gearbox. The output flange is directly mounted to the shaft of the planetary gearbox.

EXAMPLE: SHL-60-20-2

A bridge mounted drive with a hydro-mechanical power unit and a lift unit. The main gear pitch diameter is 60 inches. The intermediate speed reducer is a type S20A planetary gearbox. The final gear is driven by two pinions.

Example: SH2-25-3

A bridge mounted hydro - mechanical power unit. The main gear for the rake is 25 inches and the main gear for the flocculator is 25 inches. The intermediate reducer is a type S3A, SE2-10X-BLT.

DBS Lubrication & Maintenance Schedule

For E / F Type Drives

A DBS drive unit is made up of several speed reducers coupled together. Every speed reducer is totally enclosed and lubricated. The recommended lubricants and oil change intervals are listed in this section. Some gearboxes are sealed and permanently lubricated, and require no further service. Proper care of your drive unit will ensure long machine life. Always maintain proper oil levels and follow the recommendations below.

BASIC LUBRICATION AND MAINTENANCE SCHEDULE

	All Drives	F Type Drive	E-Type Drive
Storage (>30 Days)	Add oil to the main gear housing.		
First 10 Days		Replace type F filter.	
Every Week	Inspect oil in the main gear housing.		
Every Month	On DE-_X models & DF-_X models, grease main bearing grease fitting 6 pumps while running.		
Every 3 Months		Replace type F filter.	Grease worm gear box top bearing.
Every 6 Months	On "D" models, change oil in the main gear housing.		
Every 1 Year	On "S" models, change oil in the main gear housing.	Change oil.	
Every 10 Years	Inspect all reducers, overhaul as required.		

SEVERE ENVIRONMENT LUBRICATION AND MAINTENANCE SCHEDULE

The time interval specified in the basic lubrication and maintenance schedule should be reduced if the following conditions exist:

1. High humidity, dust or dirt, and/or corrosive chemical atmosphere.
2. **Water Contamination** - Check for any accumulated water in the main gearbox and drain condensate as required. The frequency will depend on the amount of humidity in the atmosphere. The gearbox should be checked weekly until it is determined how quickly the condensate accumulates.

PROCEDURE TO REPLACE HYDRAULIC FILTER ON -F-TYPE DRIVES.

1. Turn the machine off and wait 2 minutes for the oil in the filter to drain.
2. Unscrew the filter counterclockwise slowly until the seal is broken. Allow one extra minute for filter to drain, then remove the old filter. Wipe off surface where filter gasket contacts the lid. Put a film of oil on the new filter gasket. Tighten new filter 3/4 of a turn after seal contacts base.

PROCEDURES TO CHANGE GEAR/BEARING OIL (EXCEPT “__-X” DRIVES)

1. Turn the machine off; drain the old oil by opening the drain valve or removing the drain plug.
2. Close the drain valve. Slowly add new oil through the inspection port on drive unit top deck until the oil level reaches the range on the dip-stick. Do not over fill.

RECOMMENDED LUBRICANTS AND VOLUME

Lubricant Volume and Level

	Capacity	Level (depth)	Oil type	Condition as Shipped
Main Gear/Bearing Housing	2.32	2.”	Type 5	Not filled
Primary Speed Reducer	6 gal	Full	Type 1	Not filled
Planetary Gearbox	192 oz	Full	Type 2	Pre-filled

Recommended Lubricants

Oil Types	Where Used	Recommended Lubricant	
		Brand	Product
Type 1	Type F Speed Reducer Hydraulic Power Unit	Mobil Exxon	DTE 24 (30° to 100° F) ¹ DTE 13M (-40° to 40° F) NUTOH 32 (30° to 100° F) UNIVIS N32 (-30° to 100° F)
Type 2	Planetary Gearbox Worm Gearbox Helical Gearbox	Castrol Lubriplate Mobilith Chevron Texaco Exxon	Lithium EP 00 MAG-00 ² SHC-007 DURALITH 00 STARFAK 00 UNIREX 00
Type 3	Nord Helical Gearbox	See instructions in Nord Section	
Type 4	Variable Speed Reducer	See instructions in Lenze Section	
Type 5	Main Gear/bearing	See table on the following page	

¹ The recommended hydraulic fluid should be a premium grade all-weather anti-wear rust and oxidation inhibited mineral base hydraulic oil. For continuous operation in excess of 140°F oil temperature, ISO viscosity grade 46 is recommended.

² Lubriplate MAG-00 is made by Fiske Brothers Refining Company at 129 Lockwood Street, Newark, New Jersey 07105.

Oil Type For Main Gear/Bearing

	Temperature Range ³		
	-30 to 10 F (-34 to -12 C)	0 to 40 F (-17 to 5C)	30 to 125 F (-1 to 51C)
AGMA Number	#4	#6	#8
Automotive	80W90	85W140	
Mobilgear	629	632	636
Texaco	Meropa 150	Meropa 320	Meropa 680
Exxon	Spartan EP150	Spartan EP 320	Spartan EP 680
Chevron Gear EP	ISO 150	ISO 320	ISO 680
Amoco		94492	94494

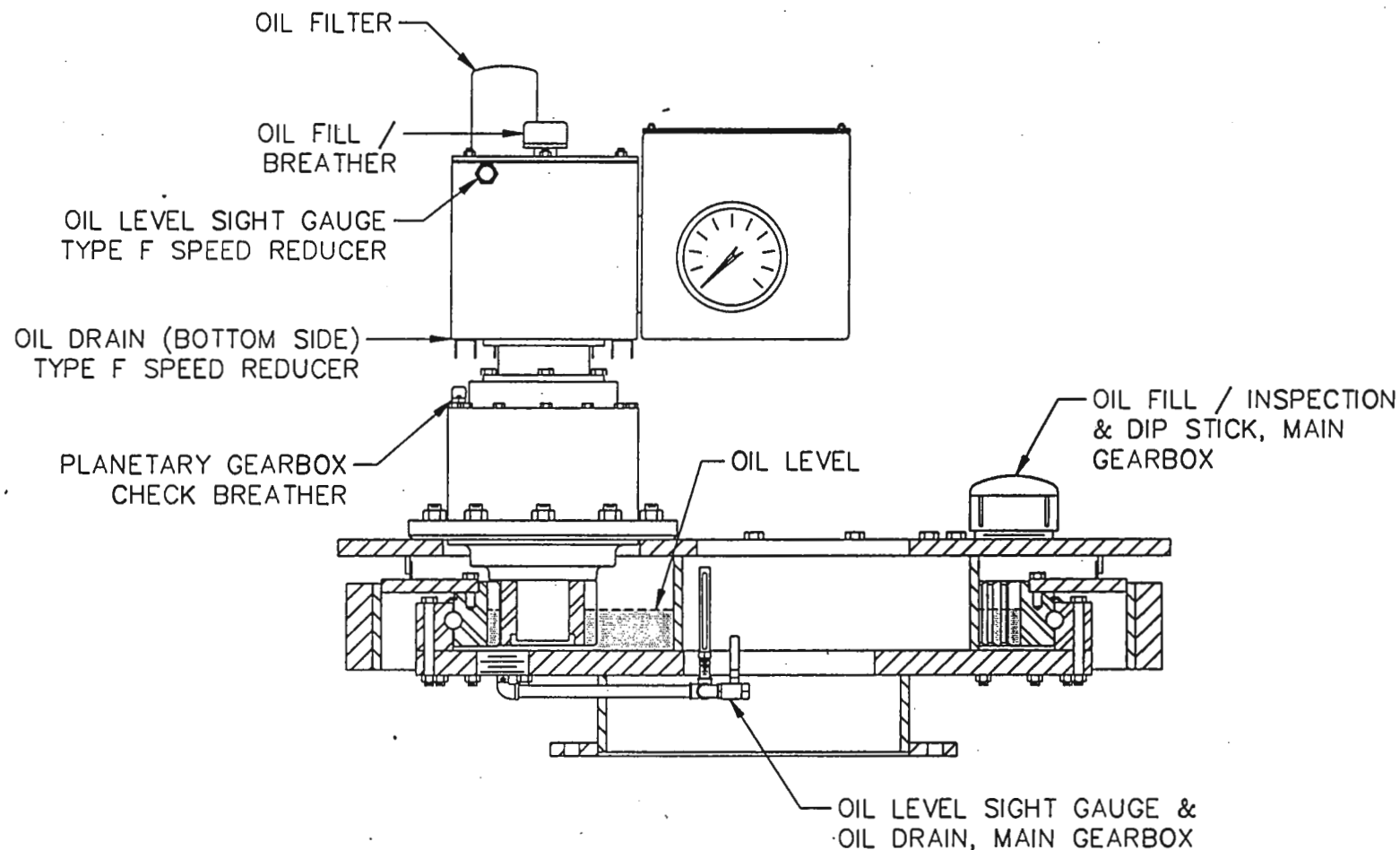
³ For temperature extremes beyond those listed, synthetic lubricants are recommended.

Filter Cross Reference Chart

For DBS Type F Speed Reducer

The 25 micron Hydraulic filter used on type F speed reducer has a wide range of selections. The following table lists the filters that can be used for replacement.

Brand Name	Part Number
LHA	SPE-15-25
FLEETGUARD	HF-6520
PARKER	925023
FRAM	P-1654A
HYCON	MFE80-25/2
ZINGA	AE-25



NOTE: PLANETARY GEARBOX IS SEALED AND PERMANENTLY LUBRICATED.

DBS MANUFACTURING
FOREST PARK, GA. 30050 404/768-2131

LUBRICATION - DF SERIES (GREASE FILLED)

NO.	REVISIONS		DATE	APPD. BY			
<u>MODEL</u> DF-SERIES	<u>PART #</u>		<u>CHKD BY</u>	<u>APPD BY</u>	<u>OPERATION</u> LUBRICATION	<u>JOB REF.</u> STD.	<u>SHEET #</u> 1 OF 1
<u>MATERIAL</u>			<u>DATE CHKD</u>	<u>DATE APPD</u>	<u>DATE</u> 6/21/95	<u>DRAWN BY</u> R.C.J.	<u>SCALE</u> N.T.S.
						<u>SCALE</u> N.T.S.	<u>DWG. #</u> LUBDFGRE

Components List

DBS Drive D30-BF/90BJ3B3-90BJ603

1. Machine Frame.
2. Main Gear/Bearing: 30" Internal Gear Bearing
DBS PN 138-0200-030M
3. Drive Pinion: 17T, 2.5 DP, 3.75"bore, 4.45 face mod. Add.
DBS PN 143-PG70255000
4. Planetary Gearbox: Fairfield 95:1
DBS PN 151-2000-095 Manufacturer PN S7AA-4-4-95
5. Type "F" Speed Reducer.
 - Pump: Parker fixed displacement gear pump
DBS PN 155-0200-07 Manufacturer PN D07-AA2A
 - Hydraulic Motor: Parker
DBS PN 148-115A-164-AS Manufacturer PN148-115A-164-AS0
 - Electric Motor Coupling: Lovejoy Series L075
DBS PN 110-075 Mfr. PN Lovejoy L075 Spider/Buna
DBS PN 110-0075-08 Mfr. PN Lovejoy L075 ½"bore .125 kwy
DBS PN 110-0075-10 Mfr. PN Lovejoy L075 5/8" bore x 188 kwy
 - Relief Valve: Parker
DBS PN 155-0060-RD102 Manufacturer PN RD102S18
 - Test Valve: Parker Needle Valve
DBS PN 155-0050-NV101 Manufacturer PN NV101S
 - Spin on Filter - 25 micron (See Cross Reference Chart For Alternatives)
DBS PN 155-MFE80-25-2
6. Electric Motor: Baldor, 3/4HP, 56C 460/60/3 @1800 rpm
DBS PN 149-8002 Manufacturer PN VM8002
7. Torque Gauge Assembly.
 - Panel Mount Gauge: McDaniel 6" S.S. ¼" LBM, 1000 PSI
DBS PN 154-0351-1000 Manufacturer PN BKP-0-1000SI
 - Switch: Ashcroft
DBS PN 153-1000-1000 Manufacturer PN LPDN4GGB25-1000
 - Snubber: Chemquip 1/4"NPT port "C"
DBS PN 155-0025-25BC Manufacturer PN 25B
 - Snubber Needle Valve: Parker 1/4"NPTF
DBS PN 155-0050-0400S Manufacturer PN N400S
8. Drive Drum:
DBS PN 145-WD117403700

9. Oil Level Sight Glass & Guard: Trico

DBS PN 130-0055-.375

DBS PN 130-0055

Manufacturer PN B12069

Manufacturer PN 290639R

Recommended Spare Parts List

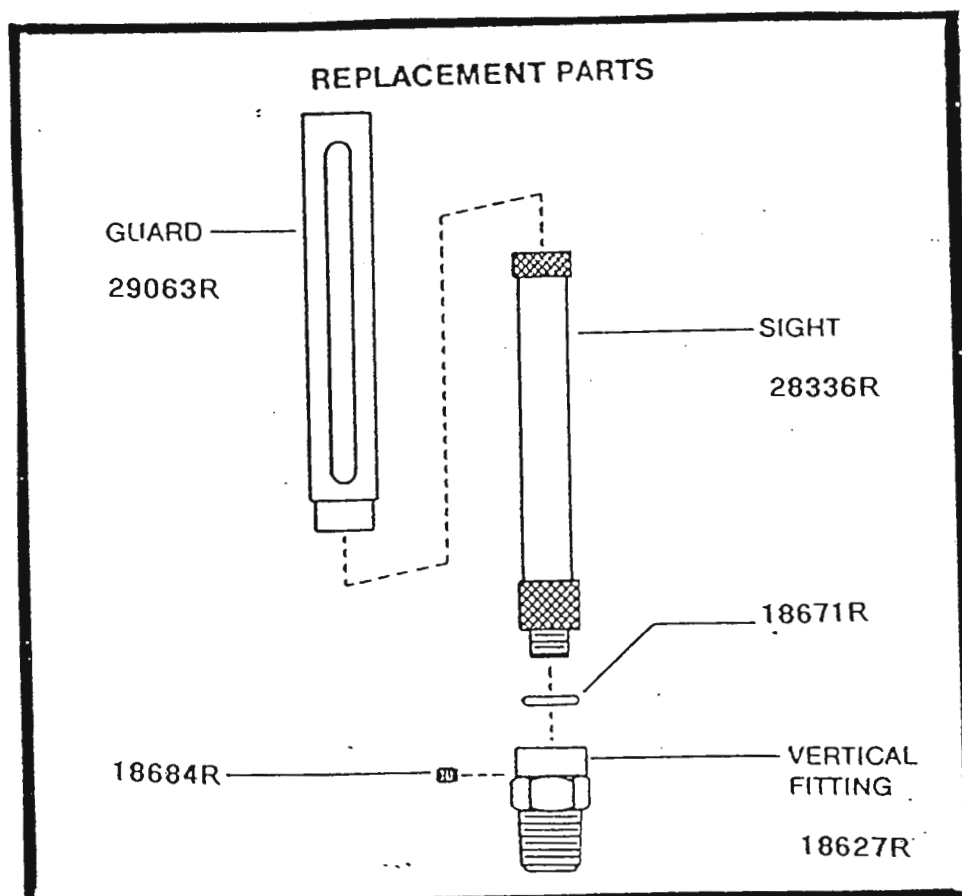
1. Spin on filter - 25 micron (DBS PN 155-MFE80-25-2).

Brite Site Liquid Level Indicator¹

NOTE: Indicators with glass sight tubes are supplied with protective guards as standard. Indicators with acrylic plastic sight tubes are not supplied with guards, but guards can be obtained as an option.

Brite-Site Liquid Level indicators are easy to install. If clearance is limited simply loosen #8-32 hex socket set screw and remove guard. Next, unthread sight tube and remove, making sure o-ring remains attached. Install vertical fitting into housing or chamber applying a quality thread sealant to pipe threads and position so that sight tube will stand vertically. Make sure o-ring is in place on sight tube and re-install sight tube into vertical fitting. Do not use excessive force, hand tighten, plus a quarter turn to seat o-ring. Next, if indicator has glass sight tube, place guard over tube and fit into elbow. Align viewing slots to most convenient position for viewing and tighten set screw with hex key wrench to keep guard in place. Next, fill housing or chamber to proper level.

To clean indicators, simply disassemble unit and wash with hot soapy water or an appropriate solvent that will not attack the Buna-N-o-ring or acrylic plastic sight tube. Sight Glass No. B18069



¹This is a retyped copy of Trico publication. For original copies, contact Trico Mfg. Corp. 1235 Hickory St. Pewaukee, WI, U.S.A 530072 Phone # 414-691-933

Disassembly and Assembly Procedures

For DE, DF, SE, SF Standard Drives

Turn electric power off! Disconnect all electrical conduits.

REMOVAL OF ELECTRIC MOTOR

1. Disconnect electrical conduit from the electric motor.
2. Support the electric motor so that it does not fall and cause personal injury or damage. Remove the four bolts holding the electric motor to the motor mount bell.
3. Slide the electric motor out of the motor mount bell.

REMOVAL OF TORQUE GAUGE BOX—F-DRIVE

1. Drain oil from the "F" type reducer.
2. Remove the cover plate on the top of the torque gauge box.
3. Disconnect the hydraulic lines from the "F" box.
4. Remove the four nuts holding the torque box to the "F" type speed reducer.

REMOVAL OF PRIMARY SPEED REDUCER—F-DRIVE

1. Remove the electric motor.
2. Drain oil from the speed reducer.
3. Remove the four bolts holding the reservoir to the planetary gearbox. Lift speed reducer up and away. Take care not to lose the parts between the planetary and F-box. See details on the type F reducer adapter coupling in the primary reducer section.

REMOVAL OF HELICAL GEARBOX—E-DRIVE WITH HELICAL BOX ONLY

1. Remove the electric motor.
2. Remove the four bolts holding the helical gearbox to the worm gearbox.
3. Slowly pull gearbox out without losing the key.

REMOVAL OF VARIABLE SPEED REDUCER—E-DRIVE VARIABLE SPEED

1. Remove the electric motor.
2. Remove the four bolts holding the variable speed reducer to the worm gearbox.
3. Slowly pull the variable speed reducer out. Care should be taken not to lose the keys.

REMOVAL OF TORQUE GAUGE BOX—E-DRIVE

1. Disconnect all electrical connections to the switch(es) and electrical conduit from the box.
2. Disconnect torque arm linkage from the rod end.

3. Remove the two bolts attached to the adapter bar, lift the torque box off.

REMOVAL OF WORM GEARBOX—E-DRIVE

1. Remove the electric motor.
2. Remove the stainless steel rain cover.
3. Disconnect the torque arm linkage by removing the pin bolt on the clevis.
4. Loosen the three or four set-screws on the output shaft of the outer shaft mounted worm gearbox (two on top and one or two on bottom).
5. Lift the "inner shaft" out and remove the shear pin from the top end of the outer shaft. Use care not to lose the shear pin.
6. Lift the gearbox assembly off the adapter outer shaft. Take care not to lose the key.

REMOVAL OF ADAPTER ASSEMBLY—E-DRIVE

1. Remove the worm gear box.
2. Remove the torque gauge box attached to the adapter assembly.
3. Remove the two or four adapter mounting bolts and lift off the adapter assembly.

REMOVAL OF PLANETARY GEARBOX

1. Remove the components mounted on top of the planetary gearbox.
2. Remove the nuts holding the planetary gearbox to the machine frame.
3. Lift the gearbox off.

REMOVAL OF PINION GEAR OR SHAFT MOUNTED FLANGE

1. Remove the planetary gearbox with its above structure by following above steps.
2. Remove the snap ring holding the pinion or flange on the shaft of the planetary gearbox. This snap ring is located under the pinion or flange. Then remove the key. Pinion or flange is a slip fit and should slide off easily.

REMOVAL OF MAIN GEAR/BEARING—(EXCEPT "X" DRIVE)

1. Remove the planetary gearbox.
2. Remove the bolts holding the top plate to the machine frame. Lift the top plate to expose main gear/bearing.
3. For "D" type drives, support rake cage horizontally and vertically. Remove the bolts attaching the rake cage and the drive drum. Then remove the bolts holding the drive drum to the gear/bearing, and lift the drive drum off.
4. For "S" type drives, secure center mechanism. Remove the bolts attaching the rake to the drive hub. Then remove the bolts holding the drive hub to the gear/bearing and lift the drive hub off.
5. Remove bolts holding the gear/bearing to the bottom plate. Lift the gear/bearing off.

REASSEMBLY PROCEDURE

The drive unit may be assembled by following the disassembly procedure in reverse order. All mating metal to metal flanged surfaces should be gasketed with oil resistant silicone RTV sealant such as made by LOCTITE, or anaerobic flexible gasket sealant compound. All mating metal to metal slip fit shaft surfaces should be coated with an anti-seizing compound. Do not reuse drained fluids unless they have been analyzed and thoroughly cleaned by an external factory approved filtering system.

Clarifier Drive Installation Instructions

For DE, DF, SE, SF Type Drive Units

1. Read the operation and maintenance manual. Follow clarifier manufacturers installation instructions.
2. Ensure the mounting location holes on mating surfaces match dimensions and orientation on the DBS drive drawing.
3. Position the drive on mounting surface by crane or lift. Bolt up rake cage to the drive drum pads or drive shaft. Shim the drive so one rake will run in plane with the tank floor. Adjust second rake arm to run in plane with the first rake arm. Running a DBS drive "out of plane" will not hurt the drive, but may cause damage to the rake mechanism. Fill all the gaps with shims, and tighten the drive to mounting surface.
4. Hook up electric controls to the motors and alarm/cutoff switches. Refer to the electrical controls manufacturer for controls installation instructions. Information on the switches and motors are contained in the Electrical Section of this manual.
5. Fill all the gearboxes with oil as recommended in this manual. Lubrication information is also provided in the warranty information envelope packed inside the torque gauge box.
6. For "F" type drives, the electric motor must rotate clockwise viewed from the fan end. Manually test the alarm and cutoff circuits by slowly closing the test valve, which is located inside the torque gauge box. When finished, return the test valve to its open position.
7. For "E" type drives, manually test the alarm and cutoff circuits by pushing on the electric motor to compress the reaction cylinder, thus creating a "torque reaction" on the worm gearbox.
8. Observe the rake mechanism for smoothness of operation. Any irregular motions, springing action and binding or rubbing must be adjusted out of the rake assembly before placing the clarifier in service.
9. Do not attempt to adjust alarm or cut off switches. These settings are factory set and should require no further adjustments.
10. After installation is complete, touch up any spots on drive or mechanism where the coating has been scratched or rubbed off.

DBS Drive Unit Troubleshooting Guide

For F-Type Drive Units

SAFETY FIRST

Have professional maintenance personnel or a certified technician review your drive. Follow the general guidelines for troubleshooting the electrical-mechanical system. Pay particular attention to risks such as electrical shock, high pressure hydraulic fluid, and risks related to rotating equipment.

LOOKING FOR THE OBVIOUS

When troubleshooting, first look for:

1. Electric motor direction of rotation.
2. Fluid level in the hydraulic box.
3. Fluid level in the main gear housing.
4. Check the oil filter.

SYMPTOMS AND POSSIBLE SOLUTIONS

Electrical Motor

Symptoms	Causes	Corrective Actions
Not rotating	Terminal wires are loose or not wired correctly.	Check connections.
	Signal from the torque cutoff switch.	Identify cause of the signal.
	Circuit breakers tripped.	Reset and check running current.
	Motor relay contacts are not functioning.	Check relay contacts and trace control signals.
	Fuses have been blown.	Replace fuses and check causes of overload.
Over heating	Motor is overloaded.	Check locked rotor current; identify loads.
	Filter circuit clogged.	Change filter and oil.
	Motor operating on wrong voltage.	Confirm line voltage on each leg, and motor wiring pair up.
Excessive noise	Electric motor fan broken; fan cover is bent; or fan is hitting the cover.	Replace motor fan, repair or replace cover.

F-type Drive Train

Symptoms	Causes	Corrective Actions
Rake not turning	Not sufficient hydraulic oil.	Add more oil.
	Hydraulic hoses loose.	Drain fluid, raise lid, tighten hose fittings.
	Electric motor running backwards.	Change motor rotation.
	Worn spline.	See primary reducer section on type F reducer coupling.
	Slipping coupling.	Replace the coupling connecting the electrical motor to the hydraulic pump.
Excessive heat	Hydraulic fluid too viscous.	Replace with 10W, (ISO32) hydraulic oil.
	Test valve closed or restricted.	Open test valve.
	Drive is overloaded.	Observe clarifier mechanism; identify cause of excessive load.
Excessive noise	Same as above.	Same as above.
	Pump cavitation.	Check for pump inlet restrictions.
Irregular rotation	Same as for excessive heat & noise.	Same as above.
	Hydraulic oil level low.	Add fluid.

Planetary Gear Box

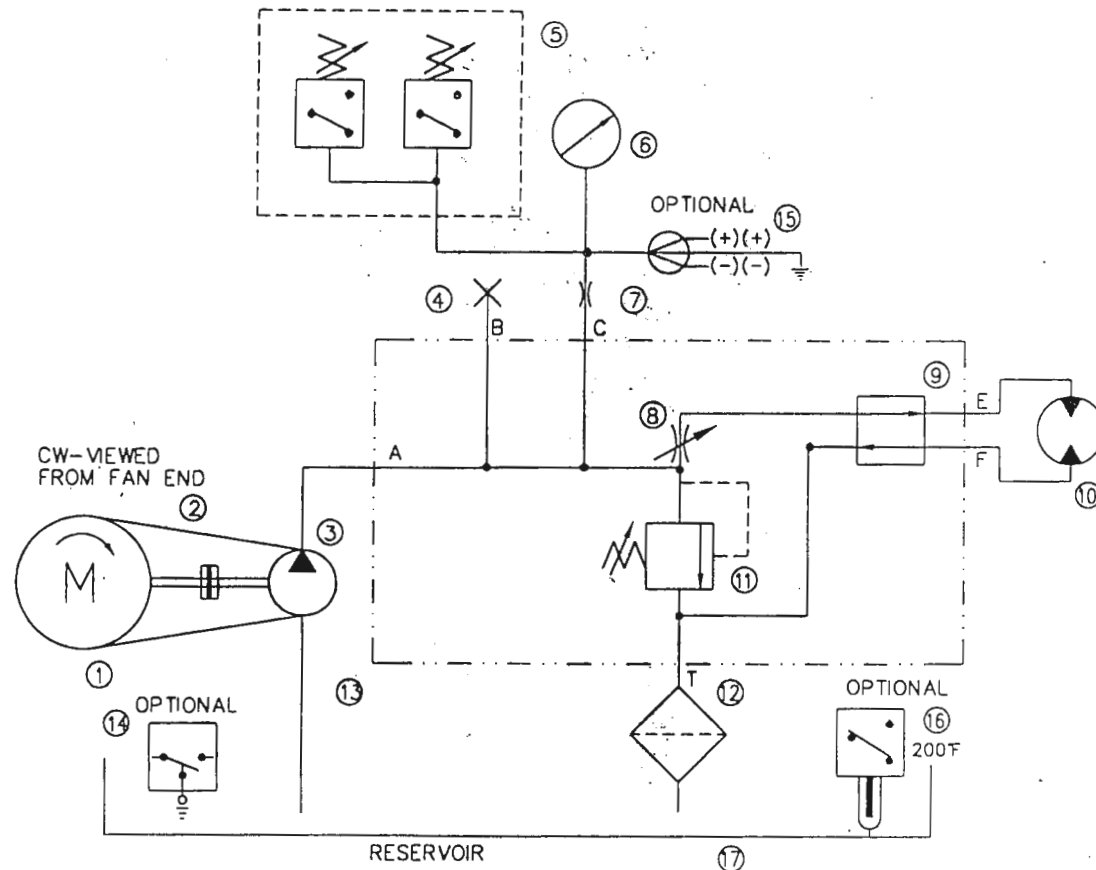
Symptoms	Causes	Corrective Actions
Grease spill	Lubricant over full.	Wipe clean and allow level to establish over time.
	Water is leaking into the gearbox.	Check breathers and rain cover, identify leaking sources.
	Relief pressure on the check breather is too low.	Use a higher pressure check breather.

Torque Gauge And Limit Switches

Symptoms	Causes	Corrective Actions
Needle not zero when no load	Needle loose.	Zero and tighten needle.
Needle bouncing	Rack mechanism is binding or misaligned.	Identify and adjust interference. Refer to clarifier manufacturer.
	Drive is cycling off and on.	Motor controls not properly worked. Refer to electrical controls supplier.
	Snubber is not functioning.	Replace snubber.
	Hydraulic motor is hitching.	Replace hydraulic motor.
	Planetary gearbox is out of time.	Refer to planetary gearbox section for instructions.
Limit switch does not work	Adjuster set too high or too low.	Change the adjuster setting.
	Alarm and cutoff switches are reversed.	When looking at switch scale, right switch must be used as the higher set point switch.
	Switch box is contaminated with moisture or contaminants.	Clean the enclosure and check conduit for leaks.
	Switch terminal screws or washers have fallen under switches.	Disassemble switches from the frame, remove foreign objects, reassemble.
	Bad connections.	Tighten terminals and check for shorts.
	Switch broken.	Replace switch.

Main Bearing Housing

Symptoms	Causes	Corrective Actions
Excessive noise/shudder	Poor lubrication.	Check lubrication.
	Clarifier mechanism misalignment.	Align clarifier mechanism.
	Over load.	Observe clarifier mechanism; identify cause of excessive load.
Broken bolts	Overload.	Check load conditions, call DBS.
Excessive condensate	Normal due to high humidity environments	Drain condensate weekly. Not removing condensate will reduce machine life.



#	DESCRIPTION	PART NUMBER
1	ELECTRIC MOTOR	-
2	COUPLING	-
3	PUMP	-
4	SPARE PORT 1/4"-NPT	-
5	ALARM & CUTOFF SWITCH	-
6	TORQUE GAUGE	-
7	SNUBBER	-
8	NEEDLE VALVE	PARKER NV101
9*	UNI-DIRECTIONAL PLUG	PARKER P104
10	HYDRAULIC MOTOR	PARKER 115A-XX
11	RELIEF VALVE	PARKER RD102
12	RETURN LINE FILTER	-
13	BI-DIR. MANIFOLD	DBS 155-07-002
14	LOW OIL LEVEL SWITCH	GEMS
15	4-20MA TRANSMITTER	ASHCROFT
16	TEMPERATURE SWITCH	NASON
17	RESERVOIR	-

NOTES:

1. PORTS A,B,C,E,F,T ARE STAMPED ON MANIFOLD BLOCK.

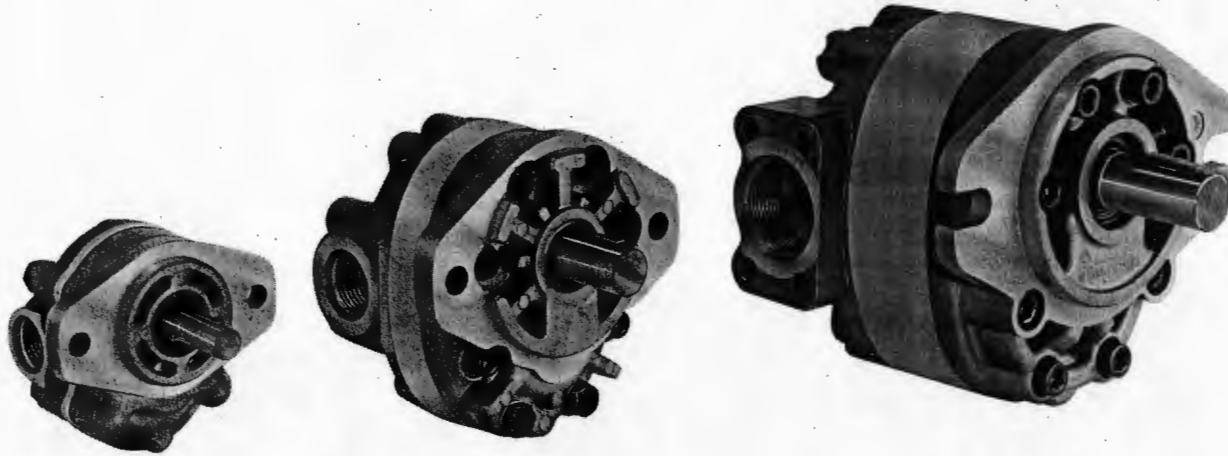
* A DIRECTIONAL CONTROL VALVE MAY BE USED FOR BI-DIRECTIONAL OPERATION, CONSULT THE FACTORY.

DBS MANUFACTURING
FOREST PARK, GA. 30050 404/768-2131

UNI-DIRECTIONAL HYDRAULIC DIAGRAM

NO.	REVISIONS	DATE	APPD. BY	OPERATION	JOB REF.	SHEET #
	MODEL	PART #	CHKD BY	APPD BY		1 OF 1
	MATERIAL	DATE CHKD	DATE APPD	DATE	DRAWN BY	DWG. #
				03/18/97	C.L.W.	HD5513

Introduction



Quick Reference Data Chart

Pump Series	Displacement IN ³ /REV. (CC/REV.)	Pump Delivery @ 1000 RPM In GPM (LPM)	Weight In Pounds (Kg)
D	.11 - .625 (1.8 - 10.2)	.5 - 2.7 (1.9 - 10.2)	2 - 3 (.9 - 1.4)
H	.58 - 2.15 (9.5 - 35.2)	2.5 - 9.3 (9.5 - 35.2)	5 - 7 (2.3 - 3.2)
M	2.08 - 3.25 (34.1 - 53.3)	9.0 - 14.1 (34.1 - 53.4)	11 - 13 (4.9 - 5.9)

Features

- Pressure Loaded Design
- Efficient, Simple Design — few moving parts
- Exceptionally Compact and Lightweight for Their Capacity
- Efficient At High Pressure Operation
- Resistant to Cavitation Effects
- High Tolerance to System Contamination
- Reliable Under Cold Weather Operation
- Sleeve Bearing Construction
- Multi-Fluid Compatibility

Pressure Capabilities

- D — to 2500 PSI (172 Bar) Continuous
- H — to 2500 PSI (172 Bar) Continuous
- M — to 2500 PSI (172 Bar) Continuous

Controls

- Optional Built In Relief Valve On "D" Series
- Optional Built In Relief Valve On "H" Series
- Optional Built In Relief Valve, and Flow Divider On "H" Series
- Consult Factory for Special Controls

Speed Capabilities

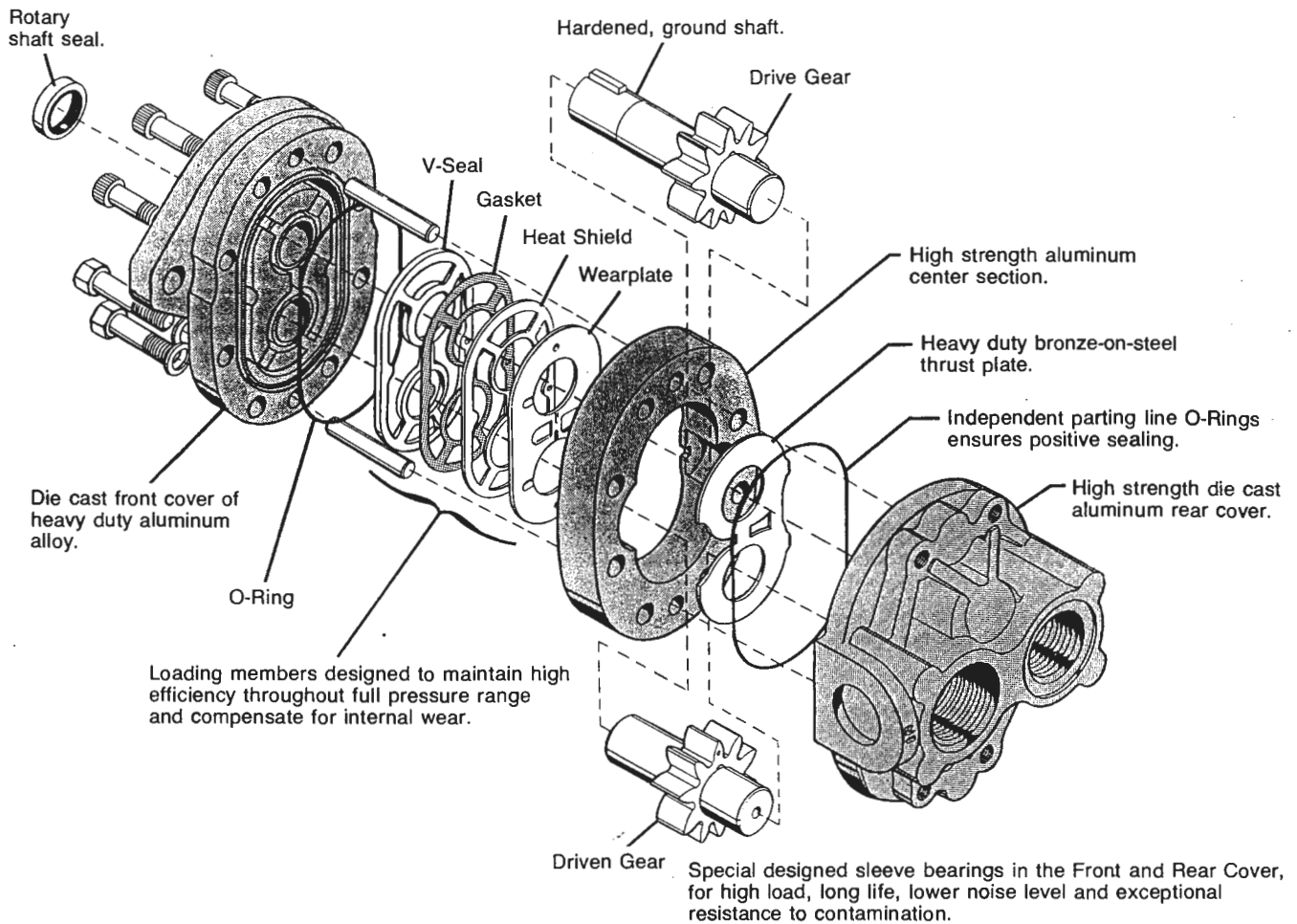
- D — to 4000 RPM
- H — to 4000 RPM
- M — to 3000 RPM

NOTE:

Double Gear Pumps (Piggyback "MH", "MD" Series), (Tandem "HD" Series) and (Dual "HH", "MM" Series) are available on special request. Consult the factory.

Introduction

General Description



A Parker pressure loaded gear pump consists of two intermeshing, hardened steel, precision ground gear assemblies. These precision gears are enclosed by a high strength, die cast aluminum front cover, back cover and a high yield strength extruded aluminum center section.

Gear assemblies consist of one drive gear shrink fit on precision ground and polished drive shaft. This shaft extends outside the pump to permit coupling to an external prime mover by means of a standard key way. The second gear being the driven gear is also shrink fit on a precision ground and polished driven shaft. Retaining rings installed in grooves provided on the shaft ensure that the gears will not move axially and a key keeps the drive gear from moving radially.

A lip type shaft seal is provided at the drive shaft to prevent external leakage of pump fluid. The sealing lip in contact with the fluid is spring loaded. Vent passages within the housings and driven shaft communicate pump inlet pressure to the rotary seal area, thus imposing the lowest possible pressure at the rotary seal for extended seal life.

The phenolic heat shield, backup gasket, and molded rubber seal form chambers behind the steel backed bronze wearplate. These chambers are connected either to inlet or discharge pressure. Discharge pressure, acting within the chambers, axially loads and deflects the wear plate toward the gear faces to take up gear side clearances. This pressure loading on the wear plate increases pump efficiency by reducing internal leakage to a minimum, providing longer pump life.

Pump rotation is dependent on proper orientation of the heat shield, backup gasket, and rubber seal in the front cover housing, the center section and rear cover oriented respectively.

Pumping action is achieved by connecting the pump drive shaft to a prime mover and rotating the gears away from the inlet port. Rotation causes the gear mesh to increase on the inlet side and decrease on the outlet (pressure) side.

Technical Information

Performance Data

Series D Fixed Displacement, Pressure Loaded Gear Pump

Features

- Pressure Loaded Design
- Efficient, Simple Design — Few Moving Parts
- Exceptionally Compact and Lightweight for Their Capacity
- Efficient At High Pressure Operation
- Resistant to Cavitation Effects
- High Tolerance to System Contamination
- Reliable Under Cold Weather Operation
- Sleeve Bearing Construction
- Multi-Fluid Compatibility

Controls

- Optional Built In Relief Valve
- Consult Factory for Special Controls

Specifications

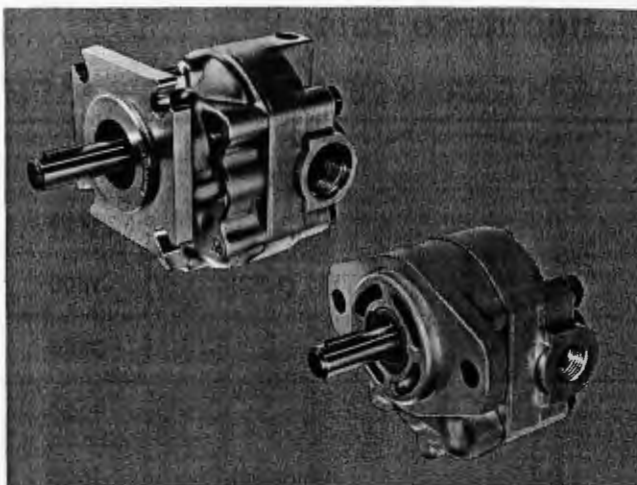
Flow Ratings: .5 GPM (1.9 LPM) to 2.7 GPM (10.2 LPM)
(At 1000 RPM) See next page for additional flow data

Pressure Ratings: D05 thru D22 — 2500 PSI (172 Bar)
Continuous
D27 — 2000 PSI (138 Bar)
Continuous

Speed Ratings: D05 thru D22 — 500 to 4000 RPM
D27 — 3000 RPM

Mounting: SAE-AA — 2 Bolt Flange
4 Bolt Flange

Housing Material: Die Cast Aluminum



Schematic Symbol (Basic Pump)



Installation Data

Inlet Conditions: 10 In. Hg. Max. Vacuum Condition
(At 1800 RPM)
5 In. Hg. Max. Vacuum Condition
(At Max. RPM)
20 PSI (1.4 Bar) Max.
Positive Pressure

Operating Temperature Range: -40°F to 185°F
(-40°C to 85°C)

Filtration: Maintain SAE Class 4

Installation Note: See page 27 of this catalog for specific recommendations pertaining to system cleanliness, fluids, start-up, inlet conditions, shaft alignment, and other important factors relative to the proper installation and use of these pumps.

Performance Data

Flow In Gallons Per Minute — GPM (LPM)

Data Based on 100 SSU
Viscosity Fluids at 120°F (49°C)

Pump Model	Displacement IN ³ (CC/REV.)	RPM	100 PSI (6.9 Bar)	1000 PSI (69 Bar)	1500 PSI (103 Bar)	2000 PSI (138 Bar)	2500 PSI (172 Bar)
D05	.111 (1.82)	1200	.58 (2.20)	.48 (1.82)	.42 (1.59)	.37 (1.40)	.32 (1.21)
		1800	.87 (3.30)	.77 (2.92)	.71 (2.69)	.66 (2.50)	.61 (2.31)
		3600	1.73 (6.56)	1.65 (6.25)	1.61 (6.10)	1.56 (5.91)	1.52 (5.76)
D07	.164 (2.69)	1200	.85 (3.22)	.73 (2.77)	.68 (2.58)	.62 (2.35)	.56 (2.12)
		1800	1.28 (4.85)	1.16 (4.40)	1.10 (4.17)	1.05 (3.98)	.99 (3.75)
		3600	2.56 (9.70)	2.47 (9.36)	2.42 (9.17)	2.37 (8.98)	2.33 (8.83)
D09	.205 (3.36)	1200	1.06 (4.02)	.94 (3.56)	.87 (3.30)	.81 (3.07)	.75 (2.84)
		1800	1.60 (6.06)	1.48 (5.61)	1.41 (5.34)	1.35 (5.12)	1.29 (4.89)
		3600	3.19 (12.09)	3.09 (11.71)	3.04 (11.52)	2.99 (11.33)	2.94 (11.14)
D11	.255 (4.18)	1200	1.32 (5.00)	1.19 (4.51)	1.12 (4.24)	1.06 (4.02)	.99 (3.75)
		1800	1.99 (7.54)	1.86 (7.05)	1.79 (6.78)	1.73 (6.56)	1.66 (6.29)
		3600	3.97 (15.05)	3.86 (14.63)	3.81 (14.44)	3.76 (14.25)	3.70 (14.02)
D14	.320 (5.25)	1200	1.66 (6.29)	1.52 (5.76)	1.44 (5.46)	1.37 (5.19)	1.30 (4.92)
		1800	2.49 (9.44)	2.35 (8.91)	2.27 (8.60)	2.20 (8.34)	2.13 (8.07)
		3600	4.99 (18.91)	4.88 (18.50)	4.82 (18.27)	4.76 (18.04)	4.70 (17.81)
D17	.394 (6.46)	1200	2.04 (7.73)	1.88 (7.13)	1.80 (6.82)	1.72 (6.52)	1.64 (6.22)
		1800	3.07 (11.64)	2.91 (11.03)	2.83 (10.73)	2.75 (10.42)	2.67 (10.12)
		3600	6.14 (23.27)	6.01 (22.78)	5.95 (22.55)	5.88 (22.29)	5.82 (22.06)
D22	.509 (8.34)	1200	2.64 (10.00)	2.46 (9.32)	2.37 (8.98)	2.28 (8.64)	2.19 (8.30)
		1800	3.97 (15.05)	3.79 (14.36)	3.70 (14.02)	3.61 (13.68)	3.52 (13.34)
		3600	7.93 (30.05)	7.79 (29.52)	7.71 (29.22)	7.64 (28.96)	7.57 (28.69)
D27	.625 (10.25)	1200	3.25 (12.32)	3.05 (11.56)	2.95 (11.18)	2.85 (10.80)	—
		1800	4.87 (18.46)	4.67 (17.70)	4.57 (17.32)	4.47 (16.94)	—
		3000	8.12 (30.77)	7.96 (30.17)	7.88 (29.86)	7.80 (29.56)	—

Installation Information

Fluid Recommendations

Premium quality hydraulic fluid with operating viscosity range of 80-1000 SSU. Maximum start-up viscosity is 4000 SSU. Fluid should have maximum anti-wear properties, rust and oxidation treatment.

Filtration

For maximum pump and system component life, the system should be protected from contamination at a level not to exceed 125 particles greater than 10 microns per milliliter of fluid (SAE Class 4).

Fluid Compatibility

- Petroleum based fluid
- Water glycols
- Water emulsions
- Transmission fluid
- Mineral oil fluid

NOTE: All data in catalog are based on petroleum based fluid. Pump pressure reduced by 1/2 of specified rating, pump speed rating reduced by 1000 RPM from specified rating and "DU" bushings must be used when pump operates on water glycols and water emulsions. Consult factory for special fluids.

Start-Up

On any start-up where the pump suction line is empty of fluid, the circuit should be open to permit priming.

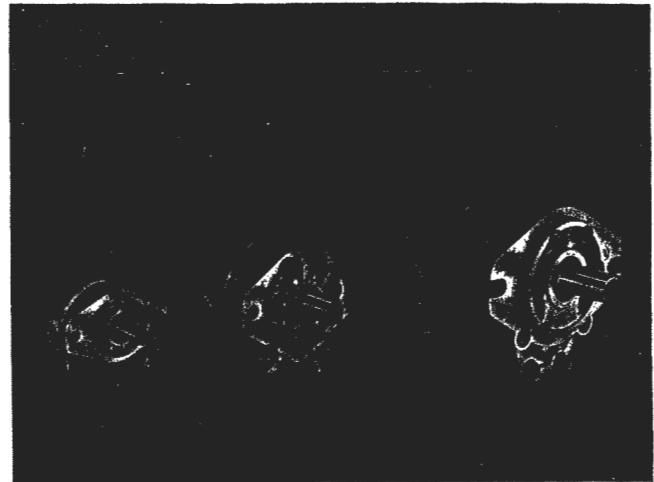
Inlet Conditions

Not to exceed 10 in. Hg. at 1800 RPM or 5 in. Hg. at pump maximum rated RPM. Inlet positive pressure not to exceed 20 PSI (1.4 Bar) maximum.

Shaft Rotation And Line Up

Pump and motor shaft alignment must be within .007 inches total indicator reading. Please follow coupling manufacturer's recommended installation instructions to prevent end thrust on pump shaft. Turn pump by hand to assure freedom of rotation. Pump and motor must be on a rigid base.

The coupling should be sized to absorb the peak horsepower developed.



Installation And Mounting

Mounting position is not restricted.

Special Installations

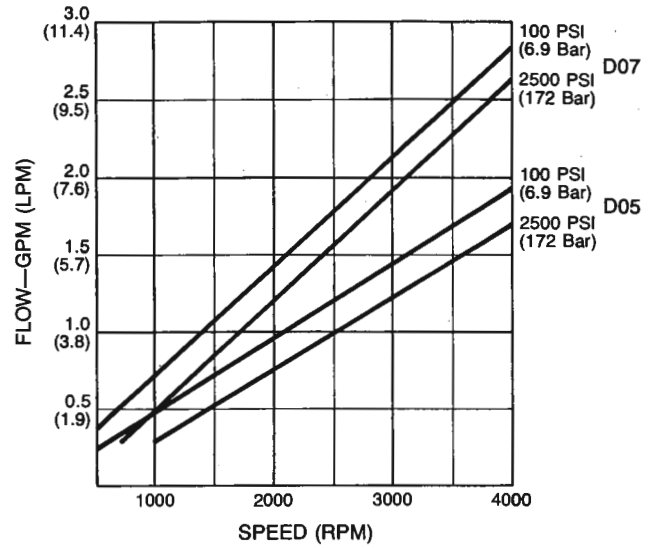
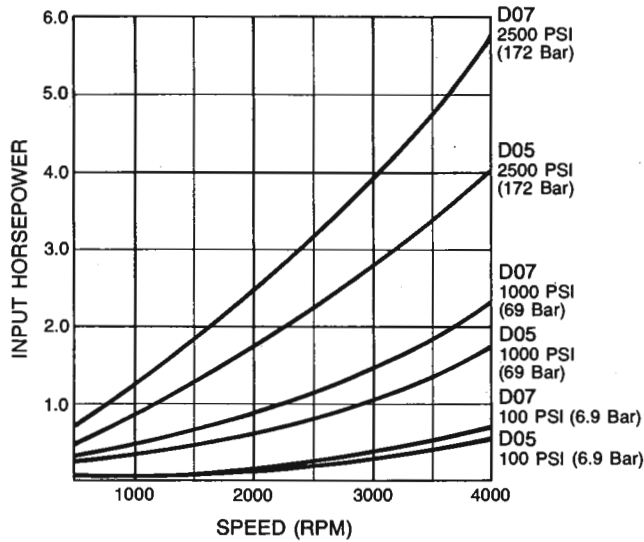
Consult your Parker representative for any application requiring the following:

Pressure above rated, drive speed above maximum, indirect drive, fluids other than those specified, fluid temperature above 185°F. (85°C.).

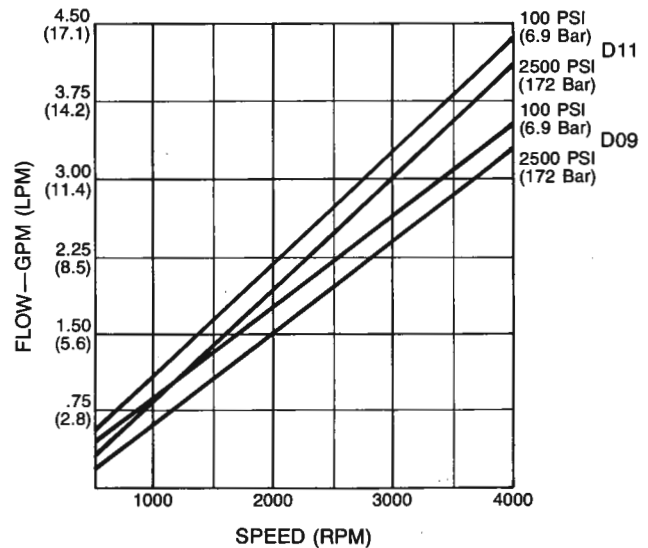
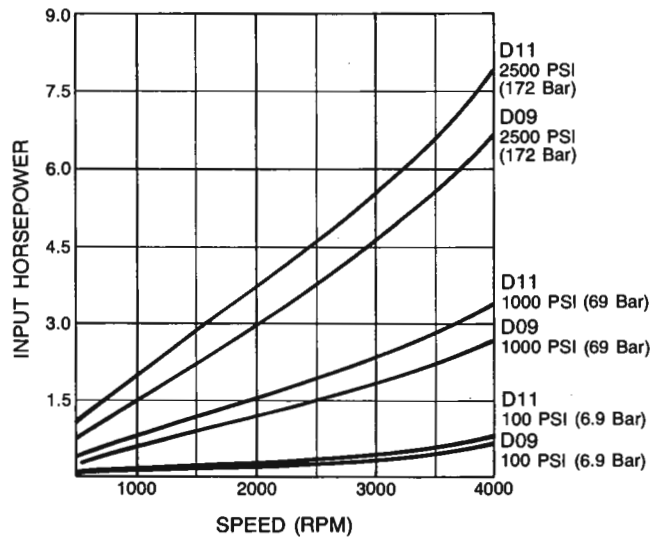
Performance Data

Based On Oil Temperature of 120°F (49°C)
(100 SSU) Atmospheric Inlet

D05, D07



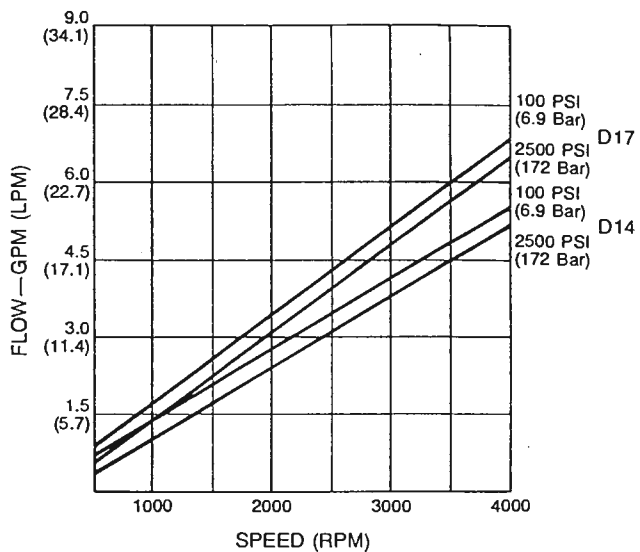
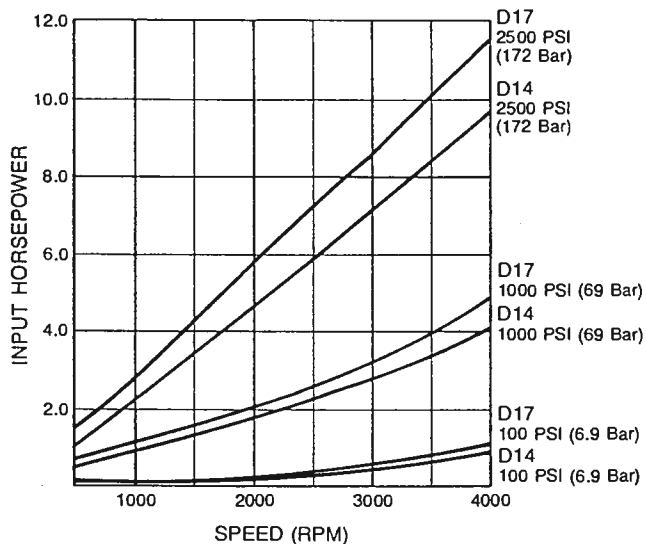
D09, D11



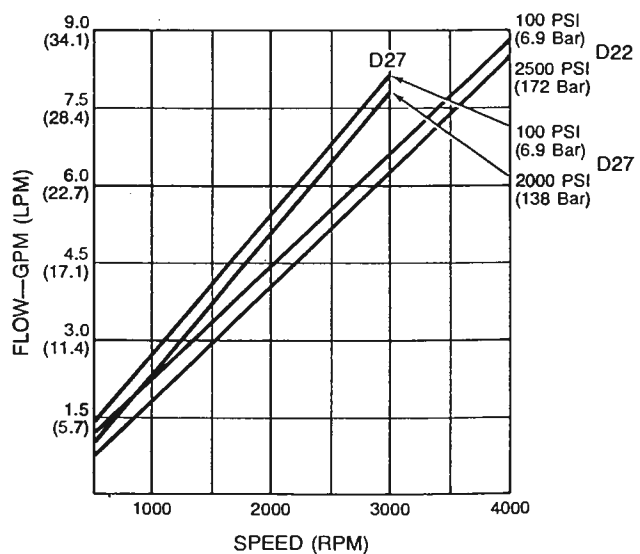
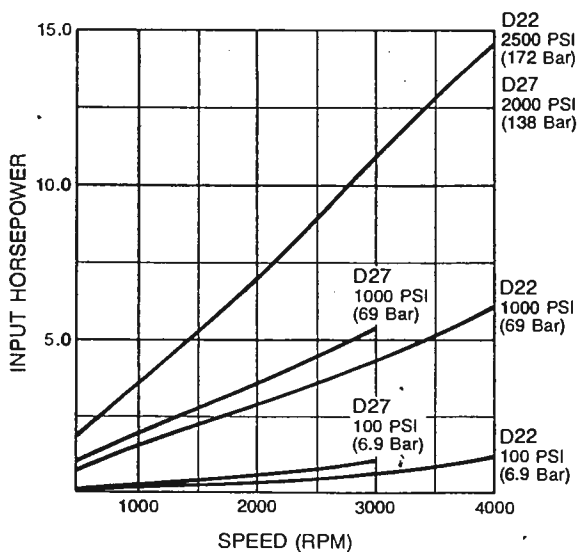
Performance Data

Based On Oil Temperature of 120°F (49°C)
(100 SSU) Atmospheric Inlet

D14, D17



D22, D27



Installation Information

Instructions for Reversing Gear Pump Rotation

The basic tools needed are a vise, preferably with soft jaws, a torque wrench, a thin screwdriver, a small hone stone, a ratchet, and a paper clip. The "D" series will require a 1/2" socket, the "H" series an additional 1/4" hex head driver, and the "M" series a 5/16" hex head driver. It is also recommended that you have on hand a few extra heat shields and gaskets. Part numbers are 655287 and 655288 for the "D" series, 656942 and 656943 for "H" series, and 656026 and 656025 for the "M" series.

To change rotation, hold the pump by the rear cover with the drive shaft pointing up. Remove all the bolts. The "D" series will have four hex head, the "H" series will have six hex and two allen head, and the "M" series will have eight allen head bolts. At this time, it would be helpful to scribe a line down the outlet side of the pump. If not marked, the outlet port is usually the smallest.

If the pump has a key type shaft, remove the key and hone down any burrs that may be on the shaft. This is important as the next step will be to lift off the front cover and any sharp edges could possibly damage the front seal or bearing.

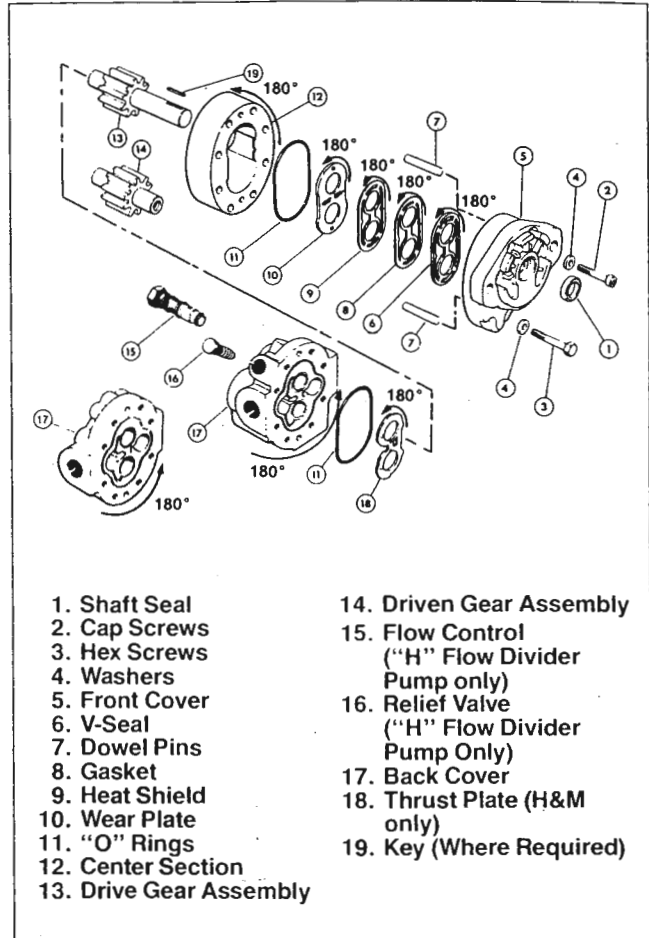
After the front cover is off, note the position of the little vent hole in the bronze wear plate, which should have come off with the front cover. The parts underneath also have a similar vent hole.

Remove in order, the wear plate, the heat shield, gasket, and V-seal: To facilitate this, make a little hook with a paper clip and lift up the part high enough to slip a screwdriver under and carefully pry up. Please note, the heat shield, in particular, is very brittle and may crack if bent.

After removing these four parts, reinstall the V-seal with the lips down in the front cover so that the vent hole is on the opposite side across from the reference mark. Use the screwdriver to seat it completely. Next install the gasket, heat shield, and wear plate; again with the vent hole in line with that of the V-seal. The wear plate should be almost flush with the surface of the front cover. You may have to go back and tuck in, here or there, so that it is flush.

Remove the center section and note the notch cut on the inside. This will be installed in line and next to the vent hole in the wear plate. The dowel pins used to locate the center section may be removed temporarily to facilitate sliding the center section over the gear assemblies. Be careful not to pinch the O-ring between the front cover and center section. If it doesn't want to stay in place, it can be "glued" using heavy grease.

If the pump is an "H" or "M" series, install the thrust plate into the center section orienting the side with the bar in line with the vent hole, ensuring that the bronze side faces the gears.



The rear cover is installed with the outlet side in line with the vent hole. The outlet side will be marked or can be identified by the smaller cavity internally. As when installing the center section, be careful not to pinch the O-ring seal.

To check your work, the line that was originally scribed on the side should now be located 180° on the rear cover and center section from that on the front cover.

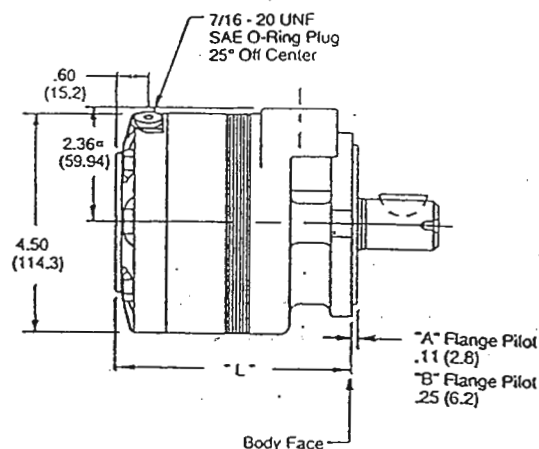
Install the bolts and snug them down by hand. Then torque to the proper setting, alternating from side to side. The correct torque specifications are 355-375" lbs. for the "M" series, and 190-210" lbs. for the "D" and "H" series. Reverse or remove the rotation arrow originally stamped on the mounting flange.

Testing Procedure

After pump has been reinstalled, run for 2-3 minutes before pressurizing. Try to apply pressure gradually for an additional five minutes, but do not pressurize for longer than 5 seconds at a time.

When the Ultimate in Efficiency and Reliability is a Must

This high performance motor contains a power element that is pressure loaded against internal leakage for high volumetric efficiency. It is wear compensated, so that its volumetric efficiency will not degrade with use, giving it the longest life of any orbit motor on the market. It can provide up to 7247 lbs.-in. of torque through a one-piece solid fixed-axis shaft. This shaft design allows for full stationary spline contact between shaft and rotor, eliminating the high spline stresses inherent in a two piece shaft with its "dogbone". It also allows the shaft to be extended through the rear cover for mounting parking brakes, auxiliary drive functions or encoders for speed readout or closed loop control. Low internal pressure drop means high mechanical efficiency and higher flow capability. This rugged motor is the most compact motor of its type on the market.



Options

- All Common 7/8 inch, 1 inch, 1 1/4 inch, 25mm and 32mm Shafts
- SAE O-Ring, NPTF, Manifold and BSPP Porting
- SAE "A" and SAE "B" Mounting
- Integral Crossover Relief Valve Package
- Thru-Shaft for Parking Brake, Encoder Mount, Auxiliary Drive
- Stainless Steel Shaft

Features

- **Self Sealing Power Element** — For High Volumetric Efficiency
- **Wear Compensating Power Element** — Means Performance Will Not Degrade With Use
- **One Piece, Fixed Axis Shaft** — For Severe Applications
- **Most Compact Motor on the Market**
- **Long Life**
- **Low Speed Disc Valve** — For High Overall Efficiency
- **Low Internal Pressure Drop**
- **External Case Drain Possible**
- **High Starting Torque**

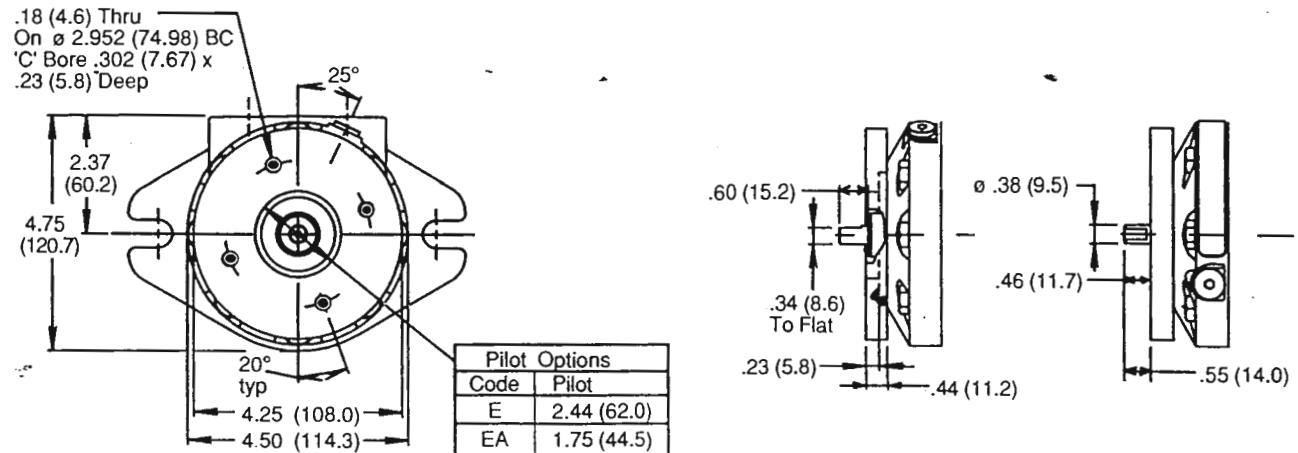
Specifications

Code	036	054	071	088	106	129	164	189	241
Displacement									
cu.in./rev.	3.6	5.4	7.1	8.8	10.6	12.9	16.4	18.9	24.1
(cu.cm./rev.)	(59.0)	(88.5)	(116.4)	(144.2)	(173.7)	(211.4)	(268.8)	(309.8)	(395.0)
Max. Speed (rpm) @ Max. Continuous Flow	898	856	651	525	436	358	282	241	184
Pressure Differential (psi) @ Max. Continuous	3000	3000	3000	3000	2750	2750	2500	2250	2250
Pressure Differential (psi) @ Max. Intermittent	3500	3500	3500	3500	3500	3500	3250	2500	2500
Max.Torque (lbs.in.) @ Max. Continuous Pressure	1375	2129	2915	3593	4251	4729	5462	6131	7077
Max.Torque (lbs.in.) @ Max. Intermittent Pressure	1664	2543	3401	4192	5019	6108	7247	6468	7384
Maximum transient (less than 1% of duty cycle) pressure is not to exceed 4000 psi.									

Dimensions

Millimeter equivalents for inch dimensions are shown in (**)

Encoder Mount



Ordering Information

11		A						
Series	Shaft	Engineering Design	Displacement	Mounting	Porting	Thru-Shaft	Shaft Material	Cross-Over Relief Valve

Code	Shaft
0	1" Keyed
1	1" 6B Spline
2	25mm Keyed
3	1 1/4" Keyed
4	1 1/4" J501 Taper
5	1 1/4" 14-T Spline
6	7/8" 13-T Spline
8	32mm Keyed

Code	Mounting
A	SAE "A" 2-Bolt
B	SAE "B" 2-bolt

Code	Thru-Shaft
0	No Thru-Shaft
1	.830" 13-T spline w/brake mount
E	Encoder mount std. 2.44 pilot
EA	Encoder mount optional 1.75 pilot

Code	Cross-Over Relief Valve
R1	Adjustable to 3500psi (factory set at 1750 psi) (Manifold Mount Required)
Omit	If Not Required

Code	Displacement
036	3.6 cu.in./rev.
054	5.4 cu.in./rev.
071	7.1 cu.in./rev.
088	8.8 cu.in./rev.
106	10.6 cu.in./rev.
129	12.9 cu.in./rev.
164	16.4 cu.in./rev.
189	18.9 cu.in./rev.
241	24.1 cu.in./rev.

Code	Porting
S	7/8"-14 UNF SAE O-Ring
P	1/2"-14 NPTF Pipe
T	1/2" BSPP
M	Manifold

Code	Shaft Material
Omit	For Alloy Steel
S	Stainless Steel

110A Series

LSHT Hydraulic Motor

Parts and Service

Note:

Prior to any motor disassembly, plug the open ports and clean all dirt from the outside of the motor.

If thru-shaft seal is to be replaced you must also have seal kit # 1166.

Prior to assembly lightly oil all seals, the rollers and the threaded bolt ends.

Procedure**Motor Disassembly**

1. Mount the motor in a vise or other holding device with the shaft (12) facing down.
2. Remove the eight 5/16-24 bolts (10).
3. Remove the cover/bearing assembly (17) and square ring seal (8).
4. Remove the locating ring (6.1) and the [8] eight rollers (6.5).
5. Remove the two check valve balls (5). **Note:** That the check balls may fall into the bolt holes or into the commutator valve ports during disassembly. Be sure that both check balls are removed and accounted for.
6. Next remove the outer rotor (6.2) and the [7] seven sealing rolls (6.3) from the shaft.
7. The inner rotor (6.4) of the IGR set and rotary valve (4) are retained on the shaft by snap ring (7). Remove this snap ring with snap ring pliers and discard. Lift the inner rotor (6.4), rotary valve (4) and the commutator plate (22) off the shaft and body bearing assembly.
8. The body bearing assembly may now be removed from the holding device, and the shaft may be pulled (by hand) through the front of body (15) exposing and allowing access to the shaft seal system. **Note:** The shaft may slip from the body when removing the assembly from the holding device.
9. Remove the dust seal (1) using a blunt instrument such as a screwdriver. Do not use a sharp instrument such as a knife because the sealing surface in the body may be damaged.

Next remove the snap ring (21) with snap ring pliers. With the snap ring removed the back up ring (2) and shaft seal (3) can be pried out using the same blunt instrument as before.

10. Inspect the IGR inner component, the rotary valve (4), and the shaft (12) for wear or other damage. Any damaged components must be replaced. The shaft should have smooth polished surfaces in the bearing and seal areas.
11. If the motor is equipped with the optional thru-shaft continue with steps 12 and 13. If the motor is **not** equipped with the optional thru-shaft skip to Motor Assembly.
12. Remove and discard the square ring seal (8).
13. Remove and discard the lip seal (19) and dust seal (20) from the cover/bearing assembly (17) using the same tool as used to remove the dust and main shaft seals in step # 9.

Motor Assembly

1. Insert the new lip seal, flat side facing out, into the body bore. Using a standard 1-inch socket as an insertion tool, tap the lip seal into place until it seats against the step in the gland.
2. Next place back-up ring (2) into the body bore so that it rests on top of the lip seal (3).
3. Lock the lip seal and back-up ring in place by inserting the snap ring (21) into the snap ring groove in the body bore.
4. Insert the new dust seal (1) into the body, flat

edge facing in, until it seats against the snap ring. Tap gently into place if necessary.

5. Lubricate the inside diameter of the lip seal, back-up ring and dust seal with oil.
6. Prior to assembly of the remainder of the motor, all parts must be cleaned with a suitable solvent and be free of nicks and burrs.
7. Check the shaft for burrs and scratches. De-burr if necessary. The shaft must be free of burrs before it is reinstalled through the lip seal. Insert the shaft into the body through the output side of the body.
8. Mount the body and shaft in a vise or holding device with the pilot and output of the shaft facing down.
9. Lightly oil the square ring seal (8) and place in the body groove.
10. Place the commutator plate (22) over the body, with the square ring groove facing up. Align the eight bolt holes in the plate with the eight bolt holes in the body. (The holes will align in only one position). **Note:** Be sure not to dislodge the body square ring seal while positioning the commutator plate (22).
11. Place the valve plate (4) onto the shaft with the bell-shaped windows facing up.
12. Place the IGR Inner onto the shaft, snap ring groove up, with the semicircular roll pockets **between** the bell-shaped windows. (Fig. 1-1)
13. Now install the new snap ring (7) which holds the inner and valve plate on the shaft. Be sure not to overextend the snap ring during assembly. The snap ring should be snug in the groove when finally assembled. **Note:** Snap ring sits in counter bore of inner.
14. Place the outer rotor (6.2) of the IGR over the inner and insert the seven rolls into the inner pockets. (The difference between Rolls and Rollers is distinguishable by eye. Rolls have square ends and Rollers have domed ends.)
15. Lightly oil the square ring seal (8) and place in the commutator plate groove.
16. Place the check balls (5) over the two 1/8 inch diameter holes in the commutator plate. Be sure the check balls do not fall into the bolt holes.
17. Place the locating ring (6.1) onto the commutator plate with the check ball holes facing downward over the balls. Align the bolt holes. (The bolt holes will align in only one position). **Note:** Be sure not to dislodge the

commutator plate square ring seal while positioning the locating ring.

18. Install the eight locating ring rollers into their pockets and oil lightly.
19. If the motor is equipped with the optional thru-shaft continue with steps 20 and 21. If the motor is **not** equipped with the thru-shaft skip to step #22.
20. Prior to installation oil all seal inner diameters, then install the new lip seal (19) into the bore with the rubber lips facing the inboard side of the cover/bearing assembly. (The flat seal back against the bore floor).
21. Press the dust seal (20) into the bore on the outboard side of the cover/bearing assembly. Confirm that the rubber lips are facing the outside of the cover. The dust seal's back should be flush with the bore floor.
22. Place the other lightly oiled square ring seal (8) into the groove in the cover and place the cover over the shaft end and align the bolt holes.
23. Install the eight bolts with lightly oiled thread ends into the bolt holes. Tighten diagonally to 15 lbs.ft. Turn the shaft by hand through several rotations. Increase the torque of each bolt by 5 lbs.ft. in a diagonal pattern. Turn the shaft by hand through several rotations. Repeat this procedure until the torque of each bolt has reached 27 ± 1 lbs.ft.

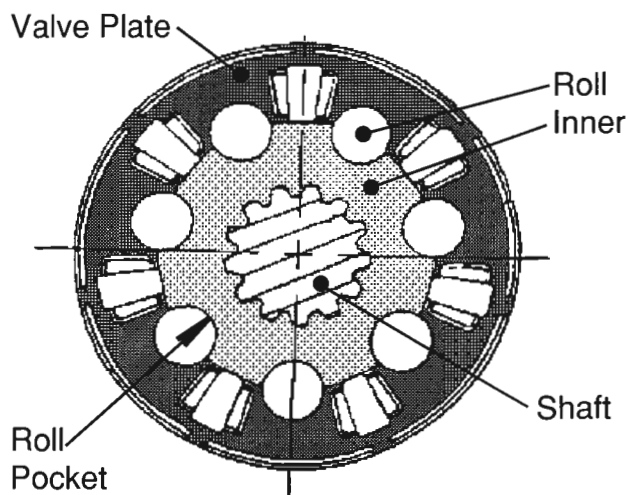
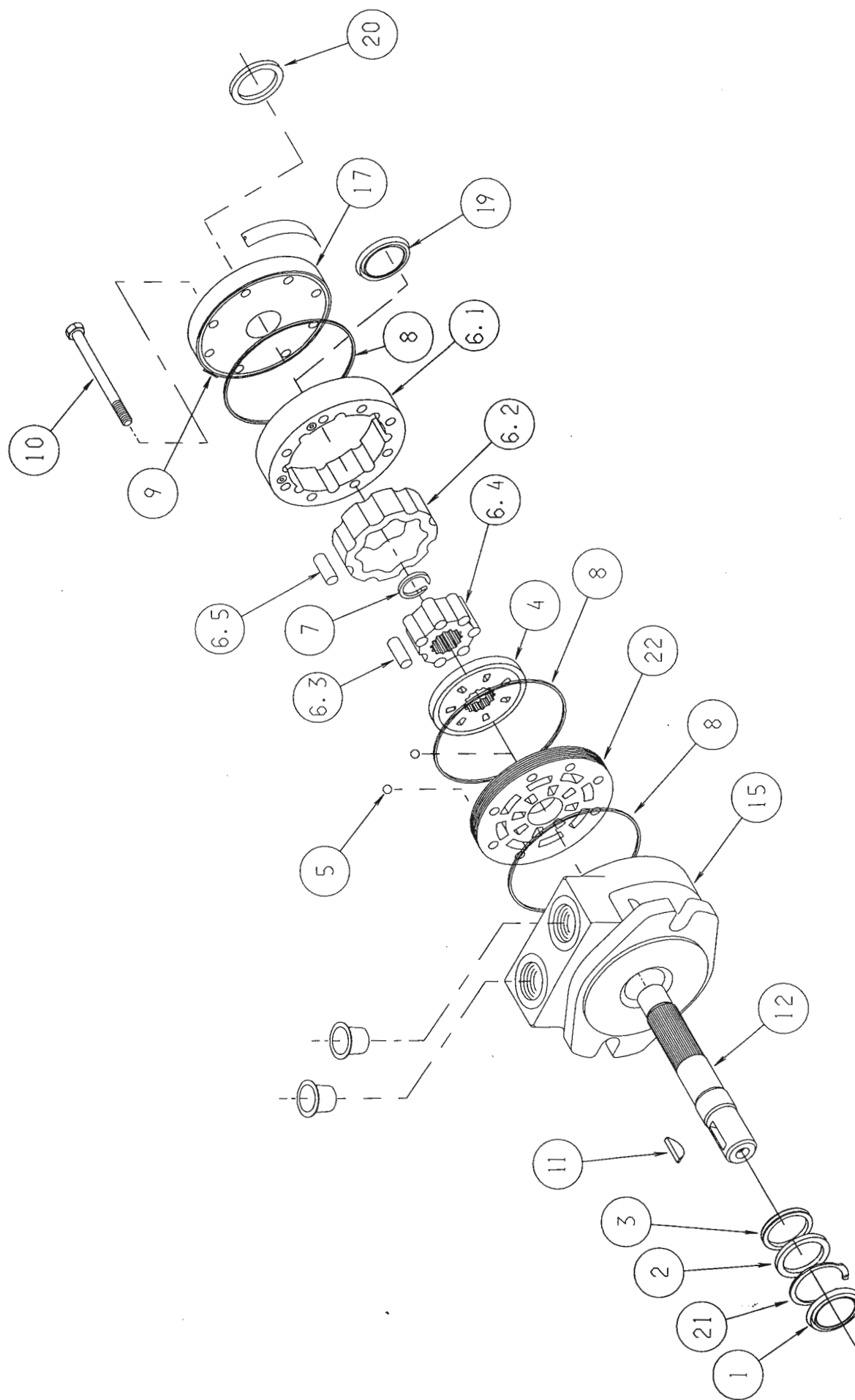


Fig. 1-1
Correct Valve Plate/Rolls Orientation
(Not to Scale)



110A

Item No.	Description	Qty./per Motor	Part Number	Where Used
1	Seal, Dust	1	2183	ALL MODELS
2	Back Up Ring	1	2177	ALL MODELS
3	Seal, Lip	1	2175	ALL MODELS
4	Rotary Valve	1	1644	ALL MODELS
5	Check Valve Ball	2	1021	ALL MODELS
6	IGR Assy 3.6 cu in/rev	1	1004-1	11XA-036-XX-X
	IGR Assy 5.4 cu in/rev	1	1004-2	11XA-054-XX-X
	IGR Assy 7.1 cu in/rev	1	1004-3	11XA-071-XX-X
	IGR Assy 8.8 cu in/rev	1	1004-4	11XA-088-XX-X
	IGR Assy 10.6 cu in/rev	1	1004-5	11XA-106-XX-X
	IGR Assy 12.9 cu in/rev	1	1004-6	11XA-129-XX-X
	IGR Assy 16.4 cu in/rev	1	1004-7	11XA-164-XX-X
	IGR Assy 18.9 cu in/rev	1	1004-189	11XA-189-XX-X
	IGR Assy 24.1 cu in/rev	1	1004-241	11XA-241-XX-X
7	Snap Ring, Shaft (Thru-Shaft) ³	1	1135	11XA-XXX-XX-1
	Snap Ring (Extra Heavy Duty)	1	1296	11XA-XXX-XX-0
21	Snap Ring, Shaft	1	2180	ALL MODELS
8	Square Ring Seal 7/16"	3	1046	ALL MODELS
14	Snap Ring Valve (Thru Shaft) ³	1	1157	11XA-XXX-XX-1
10	Bolts, Hex 5/16-24	8	1114-3	11XA-036-XX-X
	Bolts, Hex 5/16-24	8	1114-11	11XA-054-XX-X
	Bolts, Hex 5/16-24	8	1114-5	11XA-071-XX-X
	Bolts, Hex 5/16-24	8	1014-2	11XA-088-XX-X
	Bolts, Hex 5/16-24	8	1014-3	11XA-106-XX-X
	Bolts, Hex 5/16-24	8	1014-4	11XA-129-XX-X
	Bolts, Hex 5/16-24	8	1014-6	11XA-164-XX-X
	Bolts, Hex 5/16-24	8	1014-9	11XA-189-XX-X
	Bolts, Hex 5/16-24	8	1014-15	11XA-241-XX-X
11	Key, Woodruff	1	1655	110A-XXX-XX-X
	Key, Straight	1	1020-3	113A-XXX-XX-X
	Key, Woodruff	1	1756	114A-XXX-XX-X
12	Shaft 1" Keyed (Woodruff)	1	2109-X ⁴	110A-XXX-XX-0
	Shaft 1" SAE 6B Spline	1	1887-X ⁴	111A-XXX-XX-0
	Shaft 25mm Keyed	1	2225-X ⁴	112A-XXX-XX-0
	Shaft 1.25" Keyed (Straight)	1	2123-X ⁴	113A-XXX-XX-0
	Shaft 1.25" J501 Taper	1	2135-X ⁴	114A-XXX-XX-0
	Shaft 1.25" 14 Tooth Spline	1	2265-X ⁴	115A-XXX-XX-0
	Shaft 7/8" 13 Tooth Spline	1	1896-X ⁴	116A-XXX-XX-0
	Shaft 32mm Keyed	1	2504-X ⁴	118A-XXX-XX-0
13	Shaft 1" Keyed Thru (Woodruff) ³	1	2110-X ⁴	110A-XXX-XX-1
	Shaft 1" SAE 6B Spline Thru ³	1	2169-X ⁴	111A-XXX-XX-1
	Shaft 25mm Keyed Thru ³	1	2129-X ⁴	112A-XXX-XX-1

Parts

Item No.	Description	Qty./per Motor	Part Number	Where Used
	Shaft 7/8" 13 Tooth Spline Thru ³	1	2170-X ⁴	116A-XXX-XX-1
	Shaft 1" Keyed (Str) Encoder ³	1	2367-X ⁴	110A-XXX-XX-E
22	Commutator Plate	1	1865	ALL MODELS
15	Body/Bearing Assy			
	SAE "A" 2 Bolt O-ring	1	PA-2328-2	11XA-XXX-AS-X
	SAE "A" 2 Bolt Manifold	1	M110AB-2	11XA-XXX-AM-X
	SAE "A" 2 Bolt NPTF	1	PA-2328-4	11XA-XXX-AP-X
	SAE "A" 2 Bolt BSPP	1	PA-2328-1	11XA-XXX-AT-X
	SAE "B" 2 Bolt O-ring	1	M110AB-4	11XA-XXX-BS-X
	SAE "B" 2 Bolt Manifold	1	PA-2328-6	11XA-XXX-BM-X
	SAE "B" 2 Bolt NPTF	1	Note 4	11XA-XXX-BP-X
	SAE B 2 Bolt BSPP	1	PA-2328-7	11XA-XXX-BT-X
17	Cover/Bearing Assy	1	M110C-1	11XA-XXX-XX-0
	Cover/Bearing Assy			
	DU or Stainless Steel	1	M110C-3	11XA-XXX-XX-0-D
18	Cover/Bearing Assy Thru ³	1	M110C-2	11XA-XXX-XX-1
	Thru, DU or S.S. ³	1	M110C-10	11XA-XXX-XX-1-D
	Thru, Viton ³	1	M110C-2V	11XA-XXX-XX-1-V
	Thru, Encoder ³	1	M110C-5	11XA-XXX-XX-E
	Thru, Encoder Viton ³	1	M110C-5V	11XA-XXX-XX-E-V
9	Plug, Vent w/O-ring 7/16-20	1	1019-4	ALL MODELS
19	Seal, Lip .875" ³	1	1391	11XA-XXX-XX-1
20	Seal, Dust .875" ³	1	1141	11XA-XXX-XX-1
	Seal Kit, Body	1	S 2263	ALL MODELS
	Seal Kit, Viton Body	1	S 2480	ALL MODELS
	Seal Kit, Cover (Thru) ³	1	1166	THRU-SHAFT
	Seal Kit, Cover (Thru) ³	1	1387	MODELS

NOTES:

- Before ordering parts listed above confirm that all options in the model number match the identification tag on the motor. The "X" in a model number indicates an option.
- Body assemblies [items #15 & #16] and cover/bearing assemblies [items #17 & #18] include bearings.
- Indicates parts used only in thru-shaft motors.
- The X in this p/n indicates the displacement of the motor. Replace the X with one of the following **bold** numbers when ordering these shafts; 036=1, 054=2, 071=3, 088=4, 106=5, 129=6, 164=7, 189=189, 241=241.

110A Series

LSHT Hydraulic Motor

Main Shaft Seal Replacement

Seal Kit

p/n 2263

ATP 2093

Revised 2/94

Qty.	Description	p/n	Item
1	Lip Seal	2175	3
1	Dust Seal	2183	1
1	Snap Ring	2180	21
1	Snap Ring (Thick)	1296	7
1	Snap Ring (Thin) (Thru-Shaft only)	1135	7
3	Square Ring Seal	1046	8
1	Seal Kit Instructions	ATP 2093	-

Note:

Prior to any motor disassembly, plug all open ports and clean all dirt from the outside of the motor.

If thru-shaft seal is to be replaced, the appropriate thru-seal kit will also be required.

Prior to assembly lightly oil all seals, rollers and threaded bolt ends.

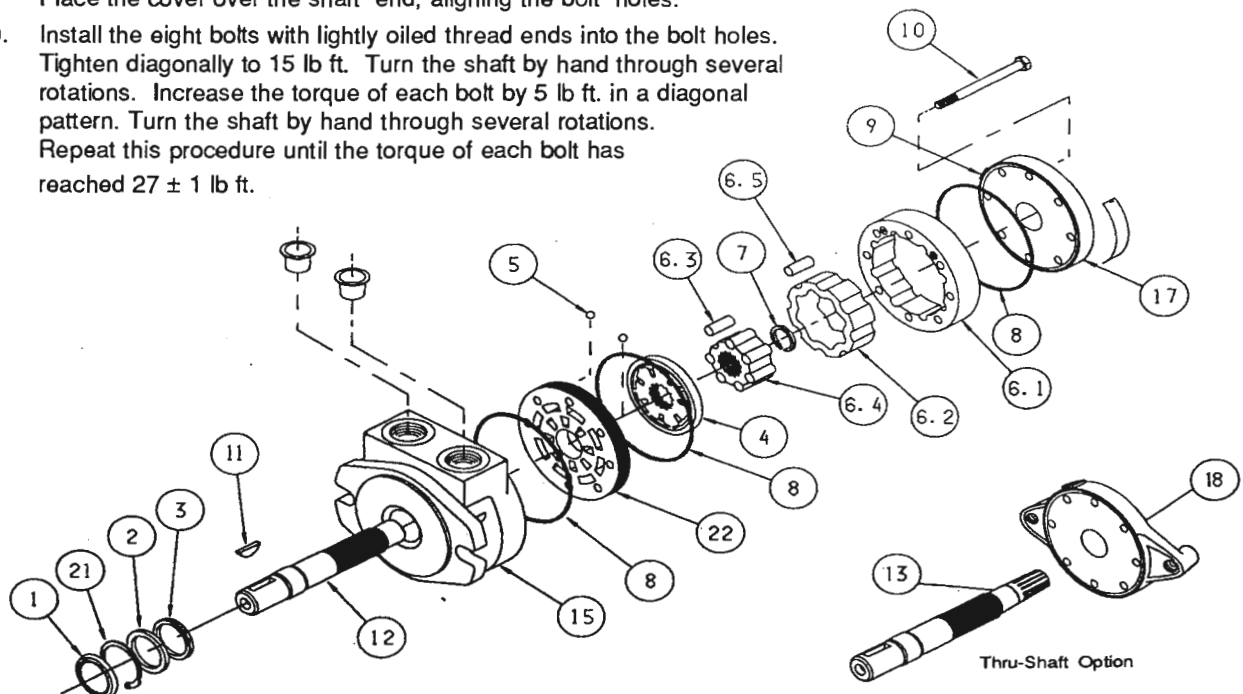
Procedure

Motor Disassembly:

1. Mount the motor in a vise or other holding device with the shaft (12) facing down.
2. Remove the eight 5/16-24 bolts (10).
3. Remove the cover/bearing assembly (17) and square ring seal (8).
4. Remove the locating ring (6.1) and the [8] eight rollers (6.5).
5. Remove the two check valve balls (5). **Note:** That the check balls may fall into the bolt holes or into the commutator valve ports during disassembly. Be sure that both check balls are removed and accounted for.
6. Next remove the outer rotor (6.2) and the [7] seven sealing rolls (6.3) from the shaft.
7. The inner rotor (6.4) of the IGR set and rotary valve (4) are retained on the shaft by snap ring (7). Remove this snap ring with snap ring pliers and discard. Lift the inner rotor (6.4), rotary valve (4) and the commutator plate (22) off the shaft and body bearing assembly.
8. The body bearing assembly may now be removed from the holding device, and the shaft may be pulled (by hand) through the front of body (15) exposing and allowing access to the shaft seal system. **Note:** The shaft may slip from the body when removing the assembly from the holding device.
9. Remove the dust seal (1) using a blunt instrument such as a screwdriver. Do not use a sharp instrument such as a knife because the sealing surface in the body may be damaged. Next remove the snap ring (21) with snap ring pliers. With the snap ring removed the back up ring (2) and shaft seal (3) can be pried out using the same blunt instrument as before.
10. Inspect the IGR™ inner component, the rotary valve (4), and the shaft (12) for wear or other damage. Any damaged components must be replaced. The shaft should have smooth polished surfaces in the bearing and seal areas.
11. If the motor is equipped with the optional thru-shaft and if the thru-shaft seal has shown signs of leakage during operation refer to the appropriate thru cover seal kit instructions for replacing this seal.

Motor Assembly

1. Insert the new lip seal, flat side facing out, into the body bore. Using a standard 1-inch socket as an insertion tool, tap the lip seal into place until it seats against the step in the gland.
2. Next place back-up ring (2) into the body bore so that it rests on top of the lip seal (3).
3. Lock the lip seal and back-up ring in place by inserting the snap ring (21) into the snap ring groove in the body bore.
4. Insert the new dust seal (1) into the body, flat edge facing in, until it seats against the snap ring. Tap gently into place if necessary.
5. Lubricate the inside diameter of the lip seal, back-up ring and dust seal with oil.
6. Prior to assembly of the remainder of the motor, all parts must be cleaned with a suitable solvent and be free of nicks and burrs.
7. Check the shaft for burrs and scratches. De-burr if necessary. The shaft must be free of burrs before it is reinstalled through the lip seal. Insert the shaft into the body through the output side of the body.
8. Mount the body and shaft in a vise or holding device with the pilot and output of the shaft facing down.
9. Lightly oil the square ring seal (8) and place in the body groove.
10. Place the commutator plate (22) over the body, with the square ring groove facing up. Align the eight bolt holes in the plate with the eight bolt holes in the body. (The holes will align in only one position). **Note:** Be sure not to dislodge the body square ring seal while positioning the commutator plate (22).
11. Place the valve plate (4) onto the shaft with the bell-shaped windows facing up.
12. Place the IGR™ Inner onto the shaft, snap ring groove up, with the semicircular roll pockets **between** the bell-shaped windows.
13. Now install the new snap ring (7) which holds the inner and valve plate on the shaft. Be sure not to overextend the snap ring during assembly. The snap ring should be snug in the groove when finally assembled. **Note:** Snap ring sits in counter bore of inner.
14. Place the outer rotor (6.2) of the IGR™ over the inner and insert the seven rolls into the inner pockets. (The difference between Rolls and Rollers is distinguishable by eye. Rolls have square ends and Rollers have domed ends.)
15. Lightly oil the square ring seal (8) and place in the commutator plate groove.
16. Place the check balls (5) over the two 1/8 inch diameter holes in the commutator plate. Be sure the check balls do not fall into the bolt holes.
17. Place the locating ring (6.1) onto the commutator plate with the check ball holes facing downward over the balls. Align the bolt holes. (The bolt holes will align in only one position). **Note:** Be sure not to dislodge the commutator plate square ring seal while positioning the locating ring.
18. Install the eight locating ring rollers into their pockets and oil lightly.
19. Insert the other lightly oiled square ring seal (8) into the groove in the cover. Place the cover over the shaft end, aligning the bolt holes.
20. Install the eight bolts with lightly oiled thread ends into the bolt holes. Tighten diagonally to 15 lb ft. Turn the shaft by hand through several rotations. Increase the torque of each bolt by 5 lb ft. in a diagonal pattern. Turn the shaft by hand through several rotations. Repeat this procedure until the torque of each bolt has reached 27 ± 1 lb ft.



Needle Valves Series NV101

Needle Valve

Application

The NV101 Series Needle Valves provide speed control and shutoff where a reverse flow check is not required.

Operation

The valve acts as a fixed orifice in a hydraulic circuit. The effective size of the orifice increases as the tapered needle is opened. Shutoff is provided when fully closed. Flow can be metered with this cartridge in either direction.

Features

- Hardened operating parts for long life
- Compact cartridge design
- Fine thread on needles for precise adjustment

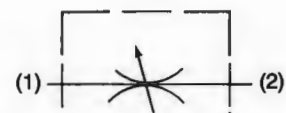
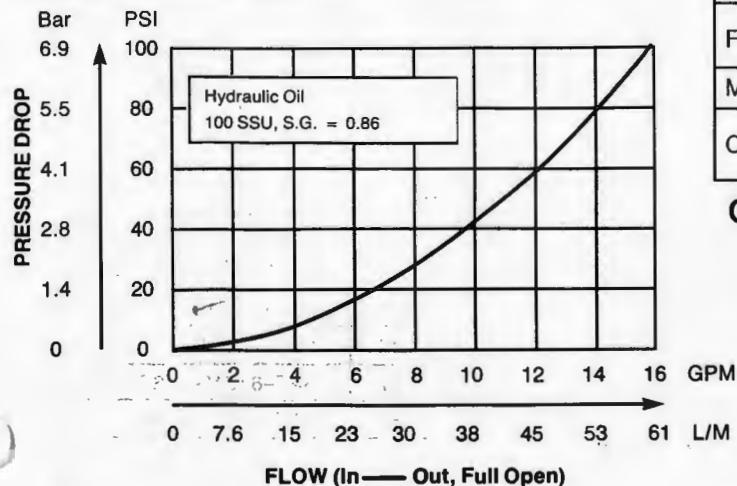
Installation Data

See the Installation Information section of this catalog for specific recommendations pertaining to system cleanliness, fluids, seals and other important factors relative to the proper installation and use of these products.

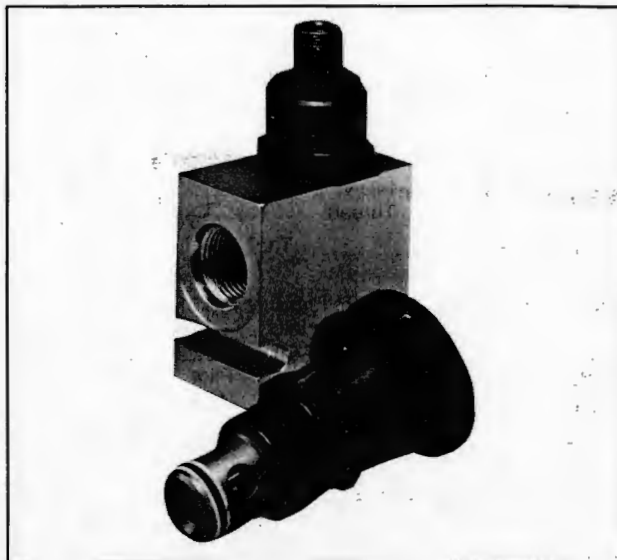
Performance Curve

Controlled Flow vs. Pressure Drop (Needle Full Open)

(Through cartridge only. For performance of bodies, see section MV).



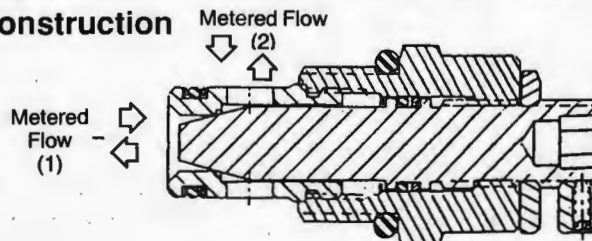
Metered Flow—Either Direction



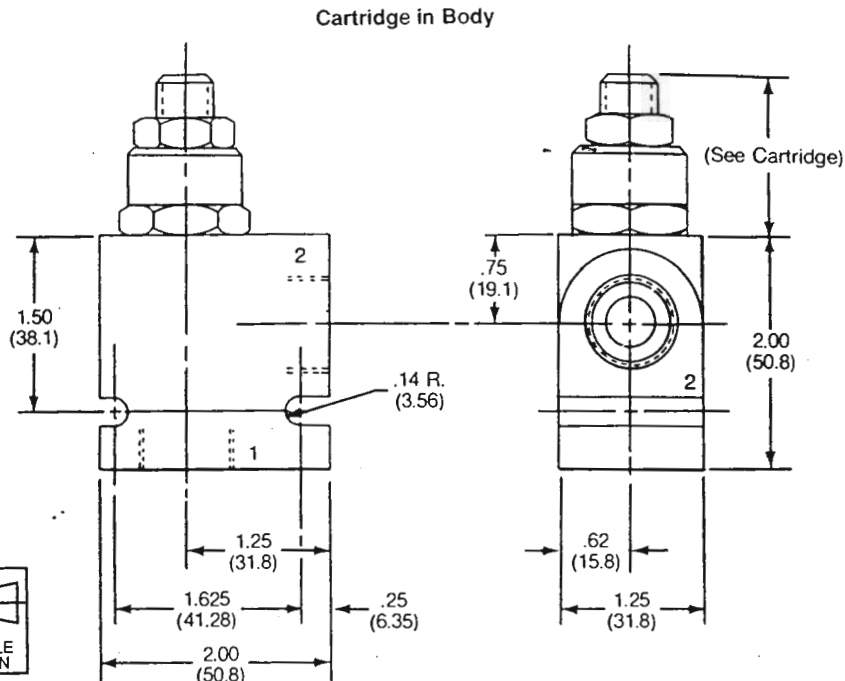
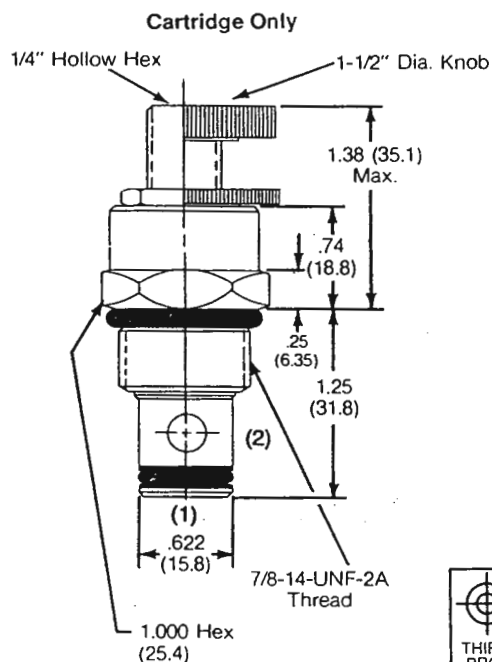
Cartridge Valve Specifications

Nominal Flow Rating	16 GPM (60 L/M)
Max. Operating Pressure	3500 PSI (245 Bar)
Max. Shutoff Leakage at Rated Pressure & Flow	5 drops/min. (1/3 cc/min.)
Max. Effective Orifice Area	.062 in ²
Operating Temp. Range (Ambient)	-40°F to +200°F (Nitrile) -25°F to +250°F (Viton)
Cartridge Material	All parts steel. All operating parts hardened steel
Body Material	Steel
Filtration	ISO Code 16/13, SAE Class 4 or better
Mounting	No Restrictions
Cavity	Common Cavity No. C10-2 (See Cavity Details section)

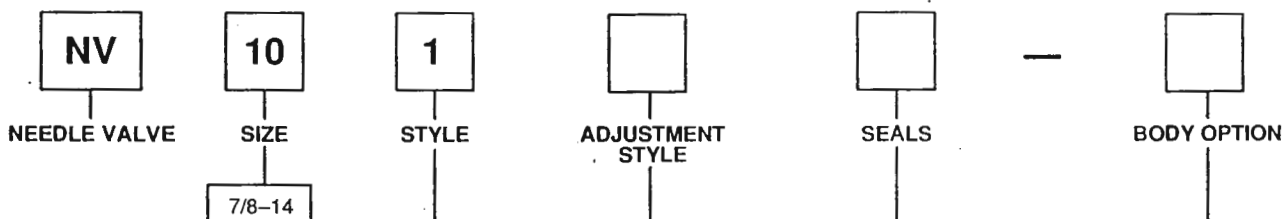
Construction



Dimensions Inches (Millimeters)



Ordering Information



Code	Style
1	Direct Acting

Code	Type
Omit	Nitrile
V	Viton

Code	Style
K	Knob Adjust
S	Screw Adjust

Code	Porting
Omit	Cartridge Only
4P	1/4" NPTF (B10-2-4P)
6P	3/8" NPTF (B10-2-6P)
8P	1/2" NPTF (B10-2-8P)
6T	SAE-6 (B10-2-6T)
8T	SAE-8 (B10-2-8T)

Shipping Weight

Cartridge Only 0.4 lbs. (.18 kg)
Cartridge in Body 1.4 lbs. (.63 kg)

SERVICE PARTS

Knob Kit - 840208K (To convert screw adjust to knob adjust)

Nitrile Seal Kit - SK10-2

Viton Seal Kit - SK10-2V

Panel Mount Kit - PMK101

Direct Acting, Poppet-Style Relief Valve

Application

The RD102 series relief valves are suited for intermittent duty applications and offer stable performance and fast response in an economical package.

Operation

The valve poppet is held against the seat by spring force. Inlet pressure on the poppet acts against the spring force unseating the poppet when valve setting is reached, permitting relief flow to tank.

Features

- Fast response
- Dirt tolerant
- Low leakage poppet design
- Cartridge design

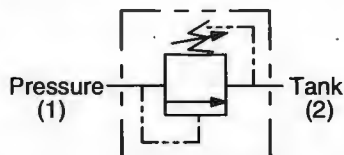
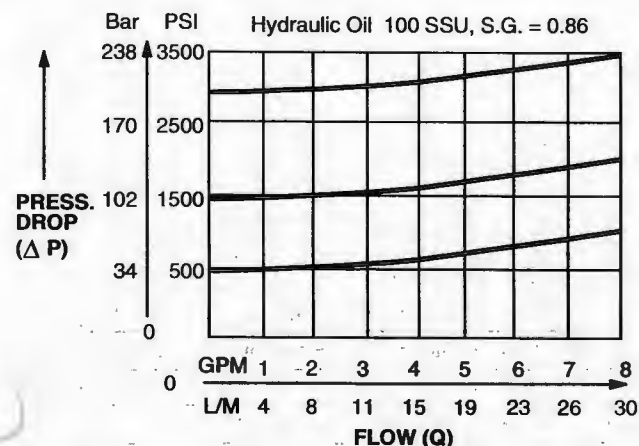
Installation Data

See the Installation Information section of this catalog for specific recommendations pertaining to system cleanliness, fluids, seals and other important factors relative to the proper installation and use of these products.

Performance Curve

Flow vs. Inlet Pressure

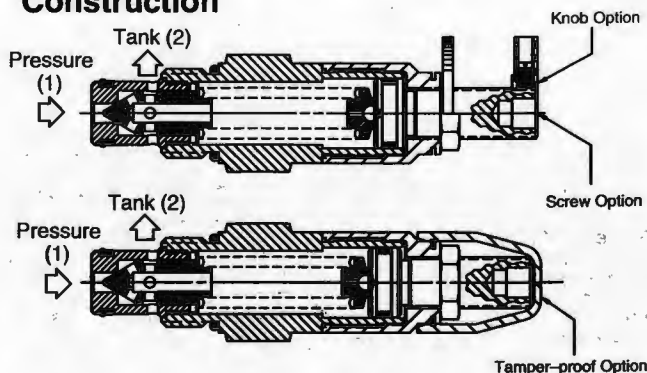
Pressure Override Curve
(Through cartridge only)



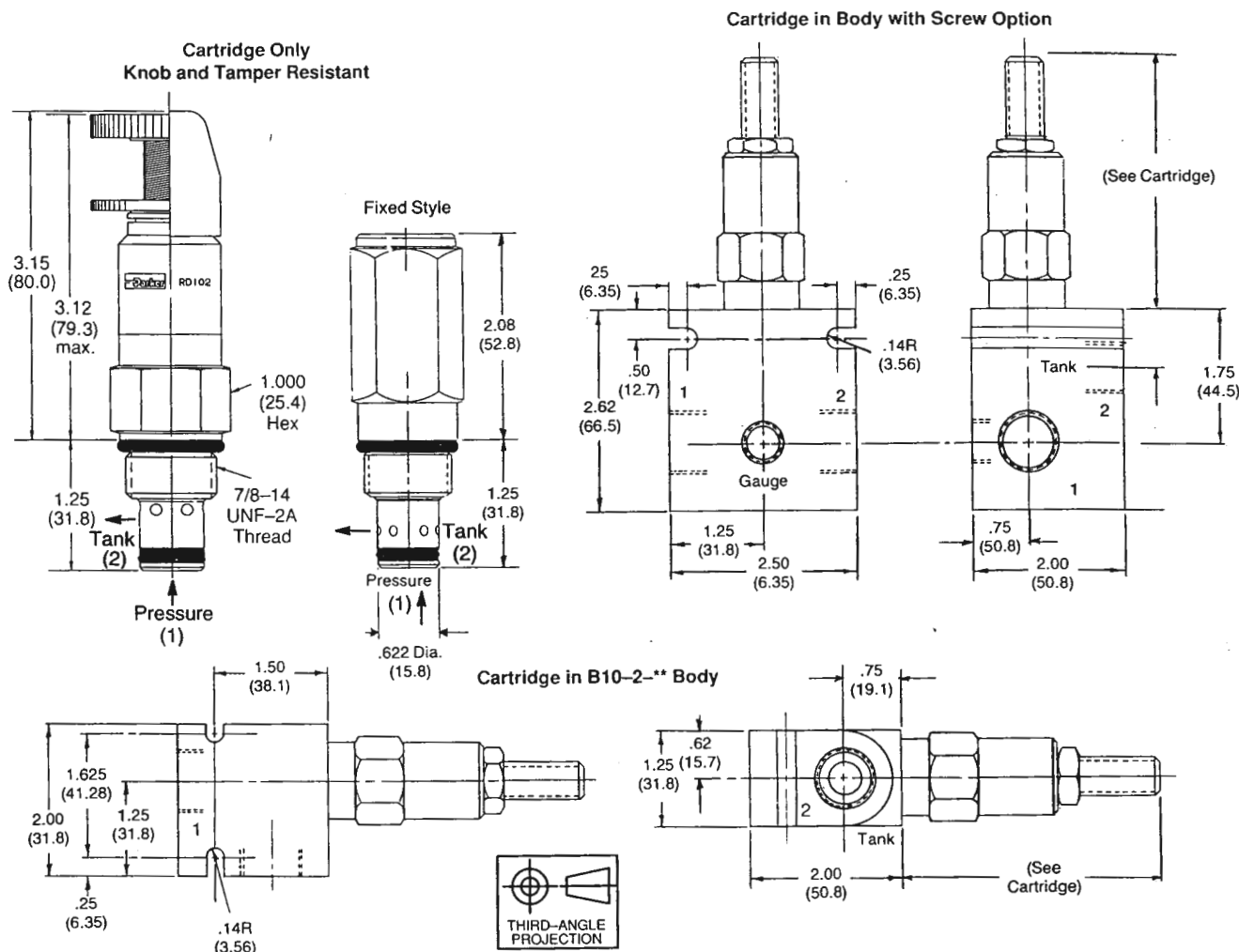
Cartridge Valve Specifications

Rated Flow	10 GPM (37.5 L/M)
Max. Inlet Pressure	3500 PSI (245 Bar)
Max. Setting Press.	3000 PSI (210 Bar)
Reseat Pressure (Valve returns to non-relieving mode)	75% of crack press.
Operating Temp. Range (Ambient)	-40°F to + 200°F (Nitrile) -25°F to + 250°F (Viton)
Leakage	40 drops/min. (1.3 cc/min.) at 75% of crack pressure
Cartridge Material	All parts steel. All operating parts hardened steel
Body Material	Steel
Filtration	ISO Code 16/13, SAE Class 4 or better
Mounting	No Restrictions
Cavity	Common Cavity No. C10-2 (See Cavity Details section)

Construction



Dimensions Inches (Millimeters)



Ordering Information

RD	10	2				
DIRECT ACTING RELIEF VALVE	SIZE	STYLE	ADJUSTMENT STYLE	PRESSURE RANGE	SEALS	BODY OPTION
	7/8-14					
	Code	Style			Code	Type
	2	Guided Poppet			Omit	Nitrile
					V	Viton

Shipping Weight
 Cartridge Only 0.5 lbs. (.23 kg)
 Cartridge in B10-2-** Body 1.5 lbs. (.68 kg)
 Cartridge in B10-2-T** Body 3.5 lbs. (1.58 kg)

Code	Range
03	100-300 PSI
09	200-900 PSI
18	300-1800 PSI
30	600-3000 PSI

Code	Type
F	Fixed style, preset at factory. Specify desired flow and pressure (i.e. 1500 PSI @ 5 GPM). Note: for any given valve setting, any change in flow will cause a change in pressure.
K	Knob Adjust
S	Screw Adjust
T	Tamper Resistant Cap

Code	Port Size
Omit	Cartridge Only
4P	1/4" NPTF (B10-2-4P)
6P	3/8" NPTF (B10-2-6P)
8P	1/2" NPTF (B10-2-8P)
6T	SAE-6 (B10-2-6T)
8T	SAE-8 (B10-2-8T)
T6P	3/8" NPTF, Straight Thru Flow Path (B10-2-T6P)
T8P	1/2" NPTF, Straight Thru Flow Path (B10-2-T8P)
T6T	SAE-6, Straight Thru Flow Path (B10-2-T6T)
T8T	SAE-8, Straight Thru Flow Path (B10-2-T8T)

SERVICE PARTS

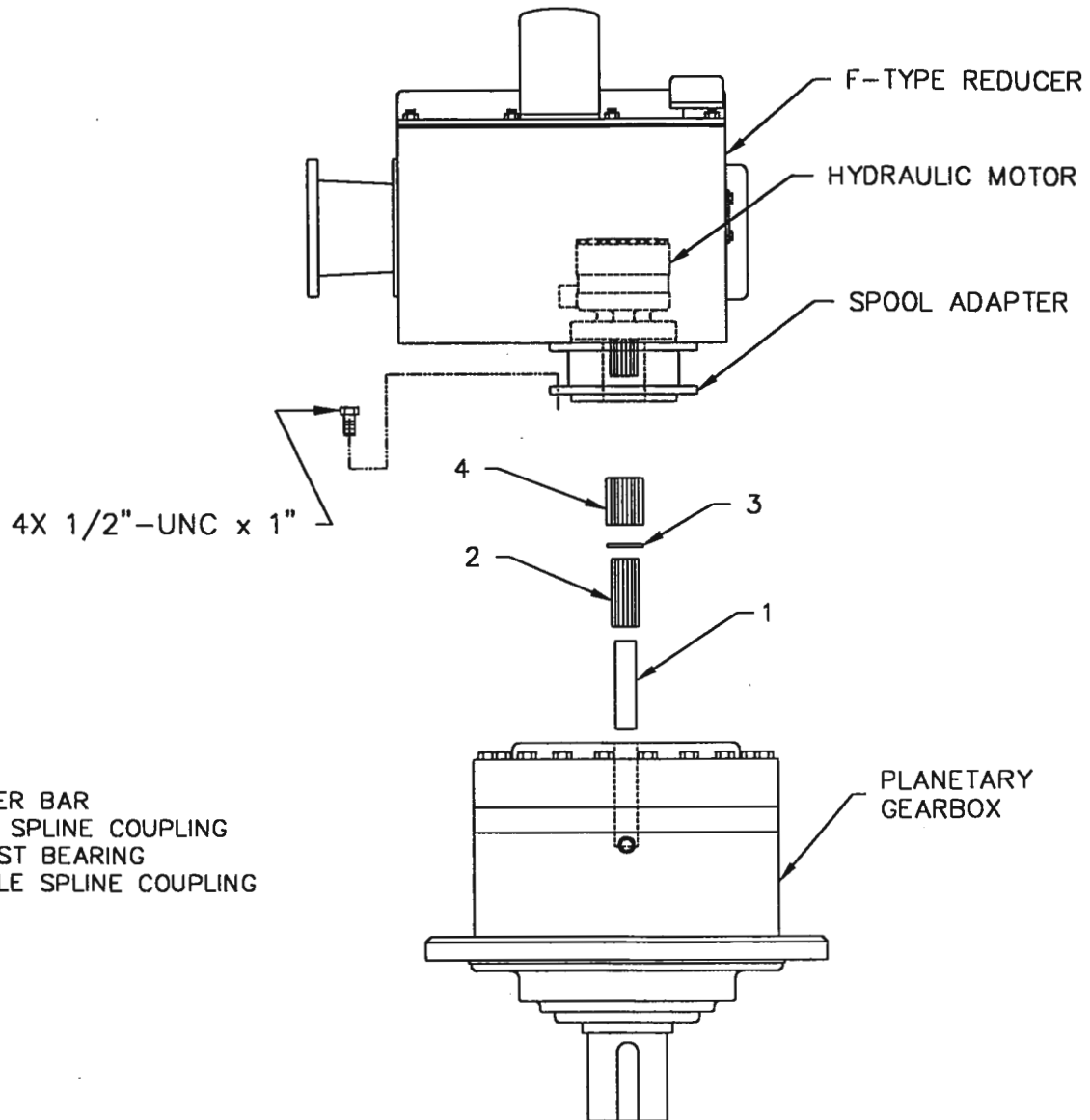
Knob Kit - 840208K (To convert screw adjust to knob adjust)

Nitrile Seal Kit - SK10-2

Viton Seal Kit - SK10-2V

Panel Mount Kit - PMK101

PLANETARY GEARBOX	1	2	3	4
A12	N/A	134-033200035	N/A	134-033200028EC
A120	N/A	134-033200036	N/A	134-033200033
S3A	145-5100-3.5	134-033200025	△ 134-4054-4	134-033200034
S7A	145-5100-4.25	134-033200025	134-4054-4	134-033200034
S10A	145-5100-5.5	134-033200025	134-4054-4	134-033200034
BON. 311 △	N/A	134-033200027	N/A	134-033200040
S20A	145-5100-6.5	134-033200025	134-4054-4	134-033200034



- 1) SPACER BAR
- 2) MALE SPLINE COUPLING
- 3) THRUST BEARING
- 4) FEMALE SPLINE COUPLING

△	O-RING REMOVED	2/8/99	<i>MB</i>
△	BONFIGLIOLI 311 INFO ADDED	12/18/98	
△	UPDATED THRUST WASHER	11/12/98	
△	UPDATE TO REFLECT NEW CONFIGURATION OF F-TYPE REDUCER	9/18/98	
△	UPDATE TO REFLECT NEW CONFIGURATION OF F-TYPE REDUCER	5/19/98	
△	PART #'S CHANGED	3/19/98	
NO.	REVISIONS	DATE	APPD. BY

DRAWING # TYPEFADS	CHKD BY <i>MB</i>	APPD BY <i>MB</i>
DATE 06/28/96	DATE CHKD 2/8/99	DATE APPD 2/8/99

DBS MANUFACTURING
FOREST PARK, GA. 30050 404/768-2131

TYPE F REDUCER ADAPTOR COUPLING

Torque-Hub® Final Drives

Service Manual



S7A
A
DRIVE

Fairfield Manufacturing Company, Inc.
2300 South Concord Road, Lafayette, Indiana 47903, 317/474-3474
FAX 317/477-7342
Subsidiary of Rexnord Inc.

Fairfield

THE
DRIVE
PEOPLE

Introduction

This Service Manual is a step-by-step guide designed for the customer or shop mechanic who is servicing or repairing a particular model of Torque-Hub Final Drive. (The model covered by this copy of the Manual is specified on the Manual cover.)

Included are —

1. assembly and exploded view drawings
2. disassembly procedure
3. main assembly procedure (assuming all sub-assemblies to be intact)
4. sub-assembly procedures.

At the time of printing, this Manual was complete for the specific Torque-Hub model designated. However, Fairfield Manufacturing Co., Inc., reserves the right to update and improve its products at any time. All specifications and procedures are therefore subject to change without notice.

Safety

Standard safety practices should be followed during the disassembly and assembly procedures described. Safety glasses and safety shoes should be worn; heavy, heat resistant gloves should be used when heated components are handled. Be especially alert when you see a caution symbol () . This symbol indicates that a particular operation could cause personal injury if not performed properly or if certain safety procedures are not followed.

S7A-A Drive Dis-assembly Procedure

1. Loosen all 20 Cover Bolts [4 Shoulder Bolts (18), 6 Grade 8 (17)] and drain the oil from the unit.
2. Remove the 20 Cover Bolts and lift off the Cover (6). Discard the "O" Ring Seal (5) from the Cover (6) counterbore.

Remove Thrust Washer (8) from counterbore of the inside face of the Cover (6).

3. Lift out the Carrier Sub-Assembly (3A) and Thrust Bearing Set (15 & 16). A Thrust Washer may stick inside the Cover (6).
4. Pry or tap the Ring Gear (4) loose and remove it. Discard the "O" Ring Seal (5) from the Hub (1) counterbore.
5. Remove the Input Gear (13).
6. Lift out the Internal Gear (2) and Thrust Bearing Set (15 & 16). A Thrust Washer may stick to the bottom of the Carrier (3A).
7. Remove the Retaining Ring (1I) from the Output Shaft (1A) and discard; Remove Bearing Shim (1H) from the Output Shaft (1A).

⚠ Eye Protection should be worn during Retaining Ring removal.

8. The Output Shaft (1A) may now be pressed out of the Hub (1G).

9. The Bearing Cups (1C) & (1E) will remain in Hub (1G) as will Bearing Cone (1F). Bearing Cone (1D) will remain on the Output Shaft (1A). Seal (1B) will be automatically removed during this procedure.

NOTE: If bearing replacement is necessary, the Bearing Cups (1C & 1E) can be removed with a "slide hammer puller" or driven out with a punch.

10. To remove Cluster Gears from Carrier, remove Retaining Ring from Planet Shaft and drive Planet Shaft out of Carrier.

Eye protection should be worn during retaining ring removal.

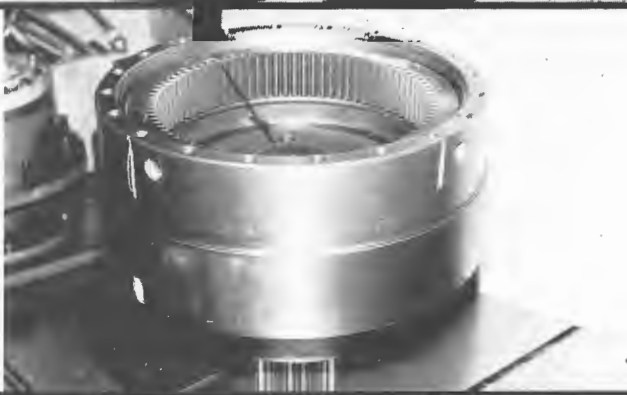
The Cluster Gear and Bearings can now be slid out of Carrier and Spacer removed from Carrier bore. If Bearing Cups require replacing they can be driven out of Cluster Gear counterbores.

WARNING: When rebuilding the unit, the "O" Rings and Retaining Rings should always be replaced.

Main Assembly Procedure



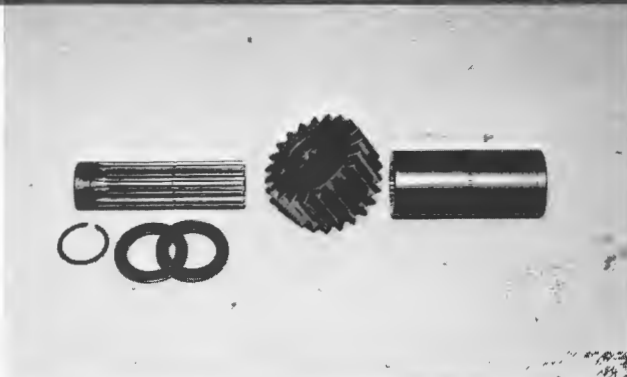
1. With the Hub Shaft-Sub-Assembly resting on the Shaft (1A) install Internal Gear (2). The Spline of the Internal Gear (2) bore will mesh with the Spline or the Output Shaft (1A).



2. Inspect the location of the Internal Gear (2) on the Output Shaft (1A). The portion of the Output Shaft (1A) which does not have full spline should protrude through the Internal Gear (2) bore.



3. The two Thrust Washers (15) and one Thrust Bearing (16) are installed on that portion of the Output Shaft (1A) which protrudes through the Internal Gear (2).

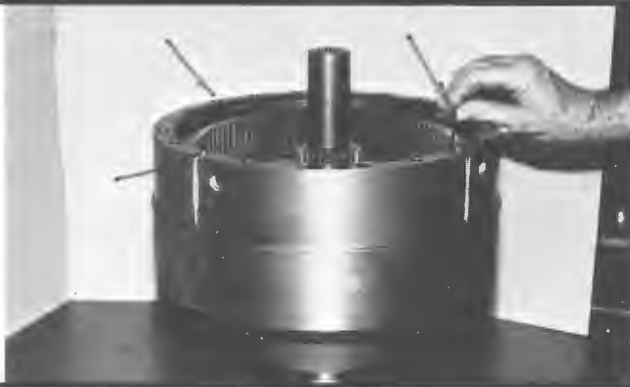


4. Pictured is the "A" Drive Input Assembly. This consists of the Input Shaft (11), Retaining Ring (10), 2 Thrust Washers (12), Input Gear (13) and Coupling (19).

NOTE: The counterbore of the Input Gear (13) is installed DOWN as shown. This Input is assembled as pictured in this procedure.



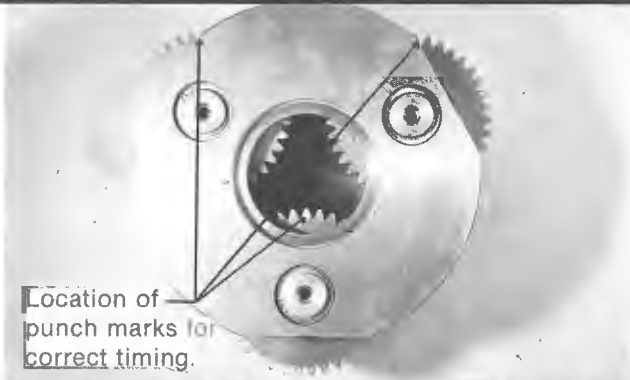
5. The Input Gear assembly is now located and centered on the internal end of the Output Shaft (1A).



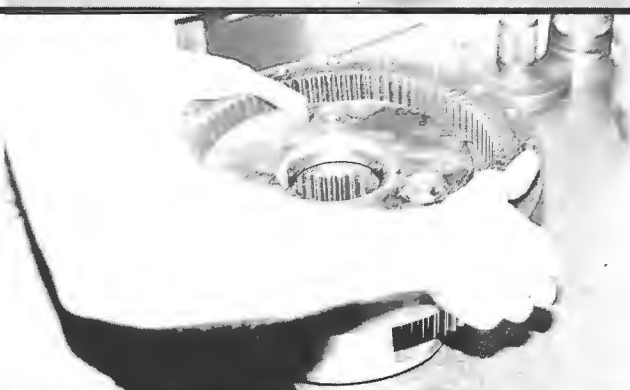
6. Place "O" Ring (5) into Hub counterbore. Use petroleum jelly to hold "O" Ring in place.

⚠ Beware of sharp edges of the counterbore while seating this "O" Ring.

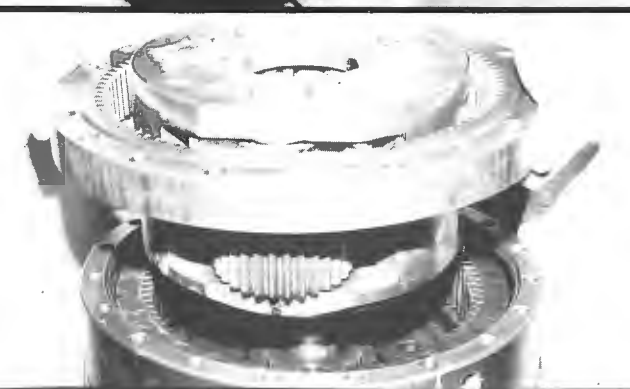
Also at this time locate and mark the 4 counter reamed holes in the face of the Hub (1G). This is for identification later in the assembly.



7. Place Carrier Assembly on a flat surface with the large gear up and position as shown. Find the punch marked tooth on each large gear and locate at 12 o'clock (straight up) from each planet pin. The upper left and upper right punch marked teeth will be just under the edge of the Carrier (3A).



8. With the shoulder side of Ring Gear (4) facing DOWN place the Ring Gear (4) over (into mesh with) the large diameter Cluster Gear (3F) teeth. Take care to insure that the Timing is maintained during this procedure.

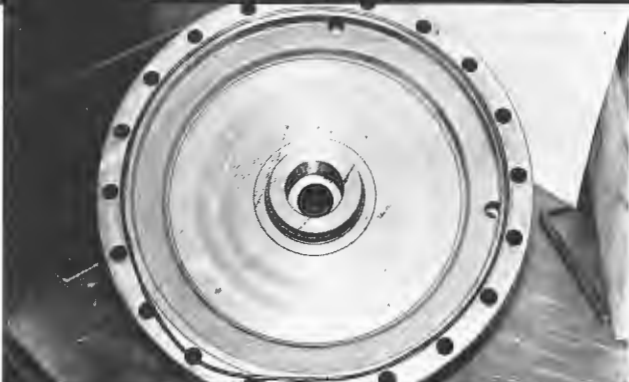


9. While holding Ring Gear (4) and Cluster-Gear (3F) in mesh, place small diameter Cluster Gear into mesh with the Internal Gear (2) and Input Gear (13). On the Ring Gear locate the hole marked with an "X" and position it over one of the marked counterbored holes identified in Step (6).

NOTE: If gears do not mesh easily or Carrier Assembly does not rotate freely, then remove the Carrier and Ring Gear and check the Cluster Gear timing.



10. Another Thrust Washer (15) Thrust Bearing (16) set is now installed into the counterbore in the face of the Carrier (3A). Use Petroleum Jelly to hold in place.



11. Place "O" Ring (5) into Cover (6) counterbore. Use Petroleum Jelly to hold in place.

⚠ Beware of sharp edges of the counterbore while seating this "O" Ring.



12. Using sufficient Grease or Petroleum Jelly to hold in place, install Thrust Washer (8) into the counterbore of the inter face of the Cover (6).



13. The Cover (6) is now installed on this assembly. Taking care to correctly align Pipe Plug Hole (7) with those in the Hub (1P), usually 90° to one another.



14. Locate the 4 counterbored holes in Hub (1C) [marked in Step 6] and install 4 Shoulder Bolts (18) with Lockwashers (23). A slight tap with a hammer may be necessary to align Shoulder Bolts (18) with Hub (1C) counterbore. The remaining Grade 8 Bolted (17) with Lockwashers (19) are also installed at this time.



15. Pipe Plugs (20) are to be installed into the Cover (6) using a Lubricant Seal of some sort.



16. Torque Shoulder Bolts (18) to 43-47 ft. lbs. and regular Grade 8 Bolts (17) to 100-110 ft. lbs.

This completes the assembly. The unit must be filled one-half full of EP 90 lubricant before operation if the unit is mounted horizontally and completely filled if mounted vertically. In vertical mounting application circulation cooling of the oil is recommended.

Hub Shaft Sub-Assembly



1. Press Bearing Cone (1D) onto Shaft (1A).



2. Pipe Plugs (1P) are to be installed at this time. The use of some form of lubricant/seal is recommended.



3. Press Bearing Cup (1C) into Hub (1G) taking care to insure cup start square with the bore of Hub (1G).



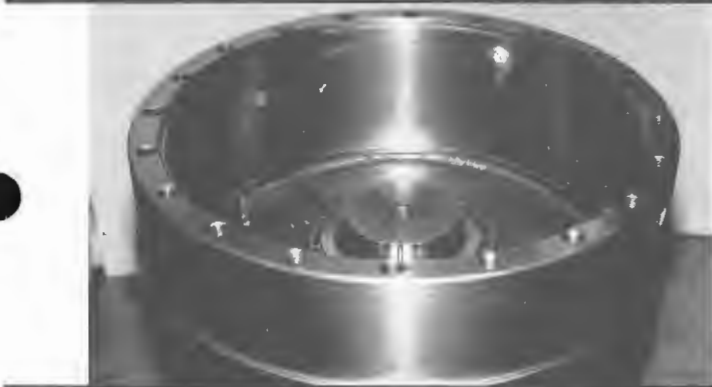
4. Invert Hub (1G) and press Bearing Cup (1E) into intercounterbore of Hub (1G).



5. The Hub (1G) is now carefully lowered on to the Output Shaft (1A).



6. Bearing Cone (1F) is started on to the Output Shaft (1A).



7. The Bearing Cone (1F) is an interference fit and has to be pressed or tapped into final position.



8. Pipe Plugs (1J) should be checked and/or installed at this time in the assembly.



9. Bearing Spacer (1H) is installed around the Output Shaft (1A) and located on Bearing Cone (1F).



10. Retaining Ring (1I) installed into the groove provided in the Output Shaft (1A). This Retaining Ring (1I) should never be reused in a repair or rebuild.

⚠ Eye protection should be worn during this procedure.



11. A soft metal punch should be used to insure that this Retaining Ring (1I) is completely seated in the groove of the Output Shaft (1A).

⚠ Eye protection should be worn during this procedure.



12. Upon completion of Step 10, rap the internal end of the Output Shaft (1A) twice with a soft metal rod. This will release the preload which was on the Bearings.



13. Invert Hub (1G) and locate it on the large diameter in preparation of installing the Shaft (1A), Seal (1B). Care should be taken to insure Seal (1B) is being correctly installed (smooth face up).



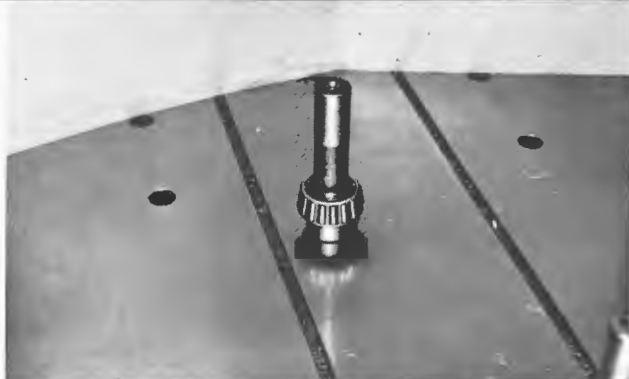
14. The Seal (1B) is to be pressed or tapped into the counterbore of Hub (1G) to the point where it becomes flush with the Hub (1G) face.

Assembly Procedure For Carrier Sub-Assembly

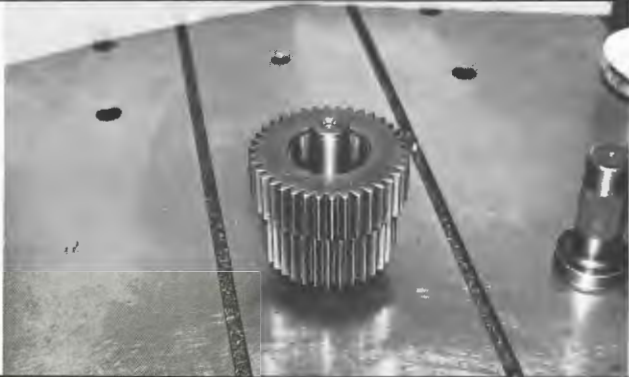
Note: At no time should a single Cluster Gear be provided. Using a Cluster Gear which does not match the other two could result in one of the gears carrying excessive loads. This will increase the likelihood of a gear tooth failure. Using an incorrect sized bearing spacer will result in improper bearing preload or endplay of the Cluster Gear. When ordering Cluster Gear replacement kits, a set of three (3) will be received preassembled using the correct spacer and include an extra retaining ring. Before installation all parts should be thoroughly cleaned and reassembled in the carrier. Individual components are not to be mixed, one Cluster Gear to another, but remain as received. The new unused retaining ring is to be installed at this time. If original parts are being re-installed, use original spacers.



1. Press Bearing Cups (3C) into both sides of Cluster Gear (3F) with large inside diameter facing out. Use an arbor type press with a 5.110 diameter adaptor tool.



2. Place the Planet Shaft (3E) on a flat surface with the large diameter down. Place one Bearing Cone (3D) over Shaft and against shoulder. This should be a slip fit.



3. Place Cluster Gear (3F) over Planet Shaft (3E) and onto Bearing Cone (3D).



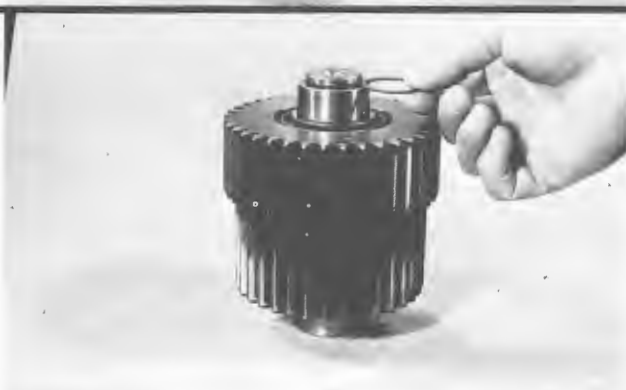
4. Place another Bearing Cone (3D) over Planet Shaft (3E) and into Cluster Gear (3F). This is a slip fit.



5. Slide largest Spacer (3G) onto Planet Shaft (3E).



6. The Bearings in the Cluster Gear (3F) must be seated by applying 25-50 pounds against them and rotating the Cluster Gear (3F) at the same time. This can be done by sliding a second Spacer (3G) over the Planet Shaft (3E) and pushing downward while rotating the gear.



7. See if Retaining Ring (3H) will fit onto Planet Shaft (3E) groove. If not, try smaller Spacer (3G) until retaining ring (3H) fits. This will set bearings at .000-.006 endplay.



8. Place the Carrier (3A) on the edge of a table with one set of holes hanging over the edge. The side with the small Roll Pin (3B) hole should be down.



9. Place Bearing Cones (3D) into Cluster Gear (3F).



10. Place Cluster Gear (3F) into Carrier (3A) with large gear up.



11. Slide Planet Shaft (3E) thru Carrier (3A) and Cluster Gear (3F) from the bottom side. Slot in Planet Shaft (3E) must line up with Roll Pin Hole in edge of Carrier (3A).

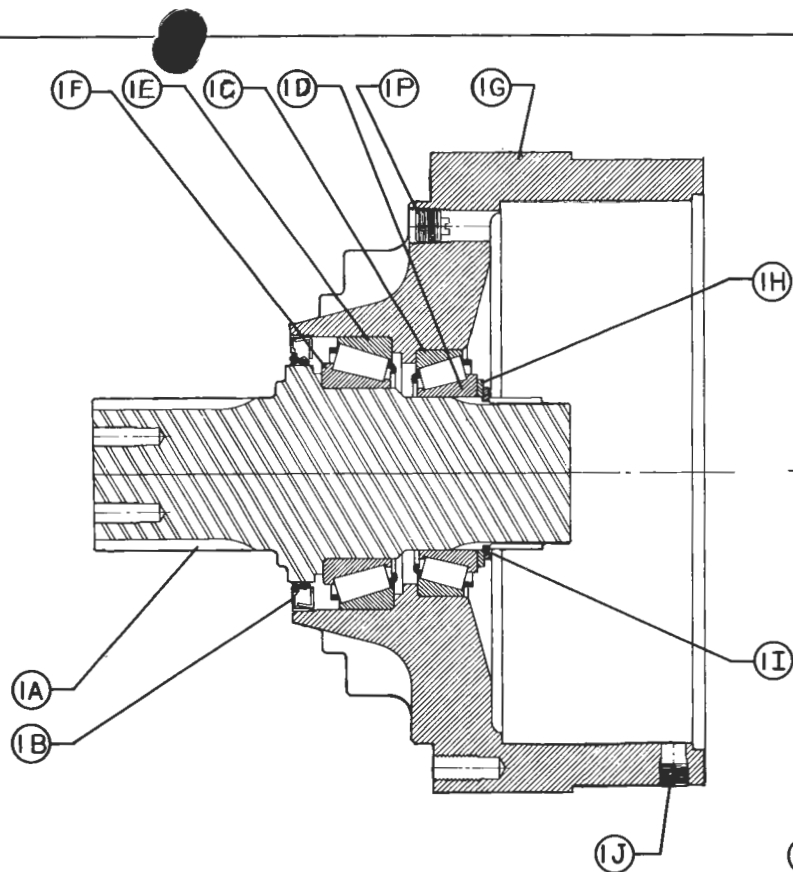


12. While holding Planet Shaft (3E) in position, slide correct Spacer (3G) onto Planet Shaft.(3E).

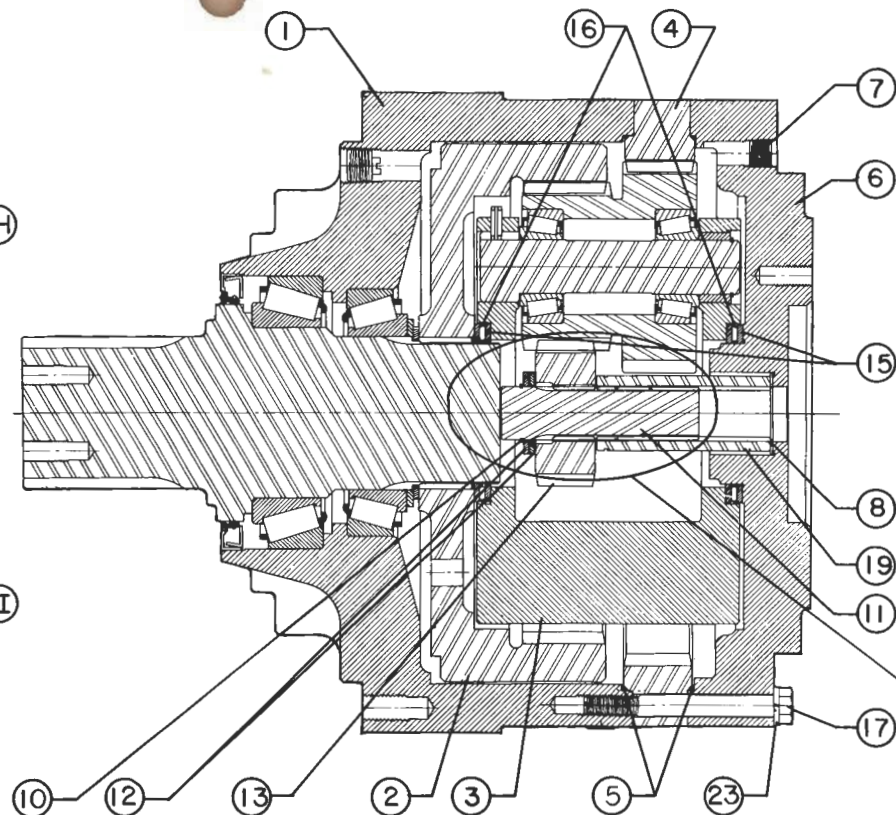


13. Place Carrier (3A) on table with something under Planet Shaft (3E) to hold it in correct position and install Retaining Ring (3H).

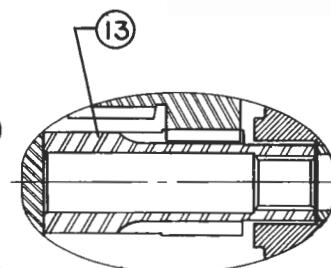
⚠ Eye protection is to be worn during this operation.



HUB-SHAFT SUBASSEMBLY



COMPLETE ASSEMBLY

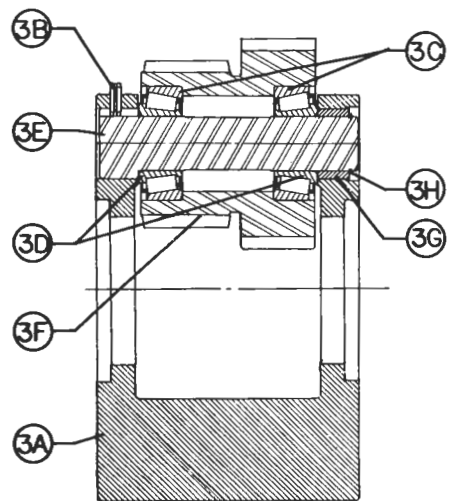


45 & 95 TO 1

REDUCTIONS

27, 59 & 73 TO 1

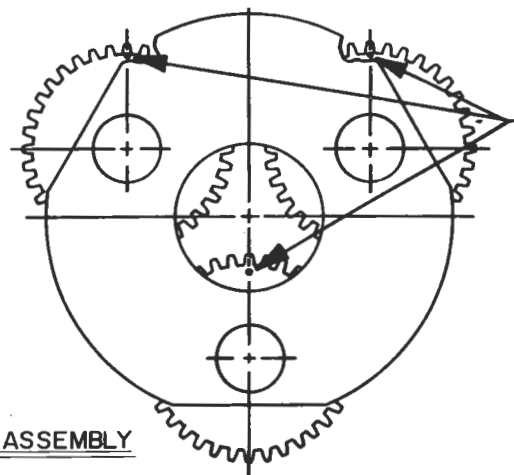
REDUCTIONS



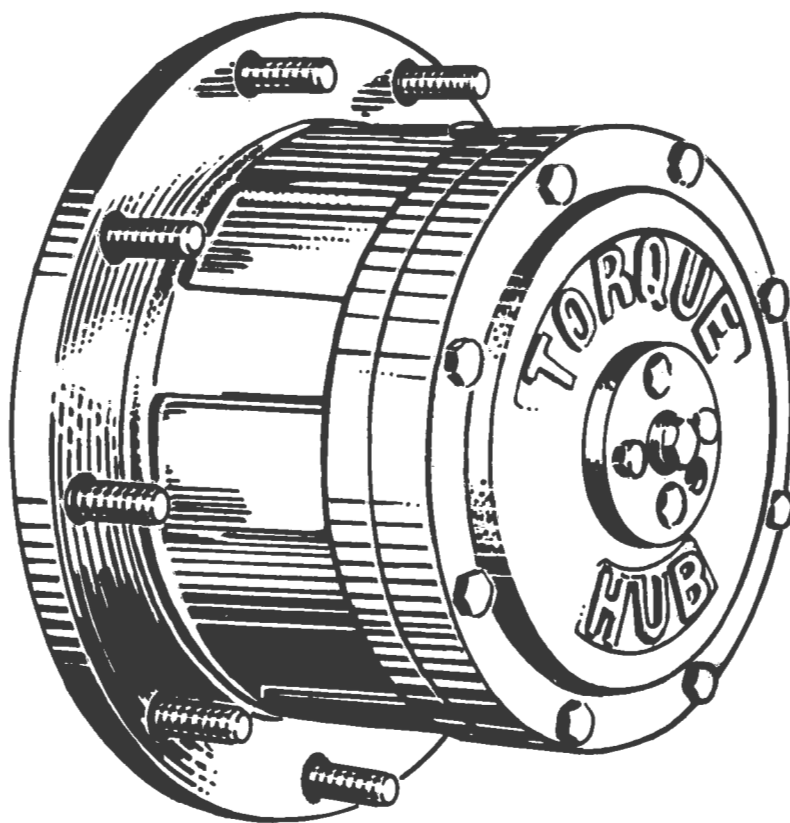
CARRIER SUBASSEMBLY



VIEW OF SHOULDER BOLT



POSITION PUNCH
MARKS AT 12
O'CLOCK FOR
CORRECT TIMING



FOR MATERIAL HANDLING EQUIPMENT, FARM MACHINERY, ROAD EQUIPMENT, MINING MACHINERY, ETC.

Fairfield Manufacturing Company, Inc.
2300 South Concord Road, Lafayette, Indiana 47903, 317/474-3474
FAX 317/477-7342
Subsidiary of Rexnord Inc.

Fairfield

THE
DRIVE
PEOPLE

**FAIRFIELD MFG CO.
PRODUCT STRUCTURE**

Parent
S7AA4495

Description
SHAFT OUTPUT ASSEMBLY

Component	SLC	Seq#	Qty/Per	IUM	Description
7500402	6		1.00	EA	COVER, INPUT
7501303	1B		1.00	EA	SEAL, LIP (417278, 5.000)
7940001	5		2.00	EA	O-RING (SPECIAL, 12.61, .103
950003	7		2.00	EA	PIPE PLUG, STD-NPTF (.375-1
7500105	1A		1.00	EA	SHAFT, OUTPUT
3200304	8		1.00	EA	WASHER, THRUST (1.257, .0615
7200301	16		2.00	EA	BRG, THRUST (NTA5266)
7200302	15		4.00	EA	WASHER, THRUST (3.2595, .1245)
901202	24		1.00	EA	PLATE, ID
930105	17		16.00	EA	BOLT, HEX-UNC (.500-13, 4.50GR8)
930205	18		4.00	EA	BOLT, SHDR (.375-16, 4.25 GR8
930301	25		4.00	EA	SCREW, DRIVE (#2, .188)
960001	23		20.00	EA	WASHER, LOCK (.516, .125)
7500616	1G		1.00	EA	HOUSING
7500801	1C		1.00	EA	BRG, TAPERED-CUP (JM718110)
7500802	1D		1.00	EA	BRG, TAPERED-CONE (JM718149)
7500805	1E		1.00	EA	BRG, TAPERED-CUP (JHM720210)
7500806	1F		1.00	EA	BRG, TAPERED-CONE (JHM720249
7900901	1H		1.00	EA	WASHER, THRUST (3.556, .1364
7900906	1R		1.00	EA	SHIM, STEEL (5,000,0,000)
910042	1I		1.00	EA	RET, RING-EXT (3.5433, 1517R)
950001	1Q		1.00	EA	PIPE PLUG, STD-NPTF (1.125-27)
950003	1J		2.00	EA	PIPE PLUG, STD-NPTF (.375-18)
950105	1P		2.00	EA	PIPE PLUG, MAGN-NPTF (.750-14)
7200101	3E		3.00	EA	SHAFT, PLANET
7200501	3A		1.00	EA	CARRIER
7500803	3C		6.00	EA	BRG, TAPERED-CUP (2520)
7500804	3D		6.00	EA	BRG, TAPERED CONE (2580)
7901006	3G		3.00	EA	SPACER, THRUST
910024	3H		3.00	EA	RET, RING-EXT (1.250), 5100125
920004	3B		3.00	EA	PIN, ROLL (.261, .750)
71000217	13		1.00	EA	GEAR, SUN
7300001	3F		3.00	EA	GEAR, CLUSTER
7400087	2		1.00	EA	GEAR, INTERNAL
7500091	4		1.00	EA	GEAR, RING

GEAR DATA

TOOTH FORM	SEMI-RECESS ACTION
PITCH DIAMETER	30.000
DIAMETRAL PITCH	2.5
PRESSURE ANGLE	20°
NUMBER OF TEETH	75
ADDENDUM	.2000
DEDENDUM	.7184
HARDNESS	248-302 BHN
DIMENSIONS BETWEEN .6400 DIA. PINS	29.651±.012
CHORDAL TOOTH THICKNESS	.4677-.4587
ABOVE TOOTH THICKNESS WILL PRODUCE	
.015-.024 BACKLASH CUT INTO GEAR	

INNER RACE

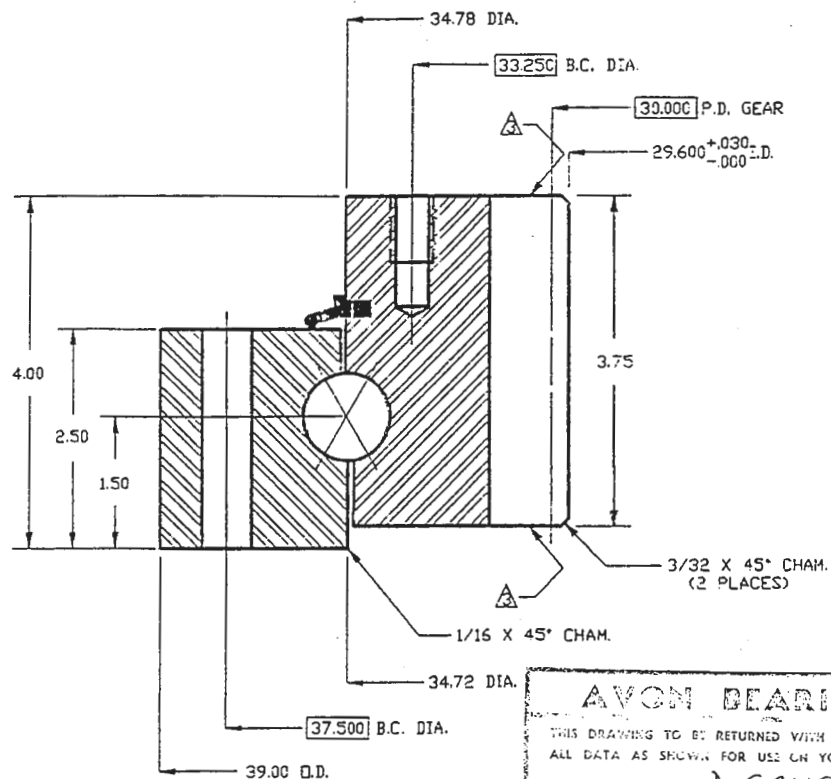
24 HOLES EQUALLY SPACED
1/2-13 UNC-2B TAP X 3/4 DEEP (MIN)

⊕ .030

OUTER RACE

24 HOLES EQUALLY SPACED
9/16 DIA. DRILL THRU

⊕ .030



AVON BEARINGS

THIS DRAWING TO BE RETURNED WITH APPROVAL OF
ALL DATA AS SHOWN FOR USE ON YOUR PURCHASE

ORDER NUMBER 105362

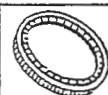
CUR JOB NUMBER 92941

APPROVED BY J.B.W.

TITLE 231010 DATE 4/14/95

NOTES:

- 1.) BEARING TO RUN IN OIL BATH LUBRICATION
- 2.) LOADING PLUG TO BE SEALED WITH 'O' RING AND RTV ADHESIVE SEALANT
- 3.) MARK POINT OF MINIMUM GEAR BACKLASH WITH PUNCH MARKS ON BOTH SIDES OF GEAR TOOTH & PAINT IN TOOTH SPACE
- 4.) APPROX. WEIGHT OF THIS BEARING= 345 Lbs.



AVON
BEARINGS

1500 NAGLE ROAD
AVON, OHIO 44011
(216) 871-2500
FAX (216) 871-2503

THIS DRAWING AND THE INFORMATION CONTAINED
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OF AVON BEARINGS

DATE
12-15-94
DR BY
J.B.W.

SCALE
FULL
APP BY
J.B.W.

PART NO.

1035B39

IMPORTANT: REFER TO AVON BEARINGS ENGINEERING DEPARTMENT FOR MOUNTING AND CAPACITY INFORMATION

120 0000-030M

Baldor® Installation - Maintenance-Instructions¹

The safety of personnel depends upon following these instructions:

RECEIVING

Inspect machine before accepting shipment for any damage in transit. Shaft should turn by hand without rubbing. Any damage from transit should be reported to the carrier immediately.

INSTALLATION

Qualified or trained personnel should install the machine. Electrical rotating equipment can result in property damage, serious injury, or death, when improperly installed. Equipment should be installed in accordance with the national electrical code, local codes and with NEMA MG2, Safety Standards for Construction and Guide for Selection, Installation and Use of Electric Motors and Generators.

Warning : Observe the following for safety:
--

1. When eyebolts are provided, they are intended **only** for lifting the motor and its included motor accessories. Eyebolt must be fully tightened.
2. The machine must be grounded in accordance with the National Electrical Code and any local code.
3. Permanently guard machine against accidental contact of body parts or clothing with moving parts.
4. Shaft key must be secured before starting motor.
5. The machine should match the line voltage, line frequency, and the equipment load.
6. Applications for motor-mounted brake should have proper safeguards provided for personnel in case of possible brake failure.
7. Remove all power services and allow machine to reach standstill prior to servicing.
8. On single phase motors discharge start and/or run capacitors prior to servicing.
9. Do not by-pass or render inoperative safeguard or protective devices.

MOTOR ENCLOSURE

Open drip proof motors are intended for use in clean, dry locations with access to an adequate supply of cooling air. In addition, there should be protection from or avoidance of flammable or combustible materials in the area of open-type motors as they can eject flame and/or molten metal in the event of an insulation failure. **Total enclosed motors** are intended for use where moisture, dirt, and/or corrosive materials are present in indoor or outdoor locations. **Explosion-proof motors**, as indicated by the underwriters laboratories,

¹ This is a retyped copy of Baldor publication LB5001. For original copies, contact Baldor Electric Company, P.O. Box 2400, Fort Smith, Arkansas 72902.

Inc. label, are required for hazardous location in accordance with the National Electrical Code.

MOUNTING

Foot mounted machines should be mounted to a rigid foundation to prevent excessive vibration. Shims may be required if foundation is uneven.

Flange mounted machines should be properly seated and aligned. **Note:** if improper direction of rotation is detrimental to the load, check rotation prior to connecting the motor to the load.

For V-belt drive, mount the sheave (pulley) close to the motor housing, however, allow clearance for end to end movement of shaft. Do not overtighten belts as this may cause premature bearing failure and/or shaft breakage.

Direct coupled machines should be carefully aligned and shaft should turn freely without any binding.

WIRING

Connect the machine in accordance with furnished connection diagram. The wiring, fusing, and grounding must be in accordance to the National Electrical Code and any local codes.

When the machine is connected to the load for proper direction of rotation and started, it should start quickly and run smoothly. If this is not the case, immediately shut motor off. Investigate the cause. The cause could be; low voltage, the motor is misconneted, or the load is too great, etc.

It is recommended that the motor current be checked after it has been operating a short time and compared against nameplate current.

LUBRICATION

This is a ball bearing motor. The bearings have been given initial lubrication at the factory. Motors without regreasing capability are factory lubricated for normal bearing life.

RELUBRICATION INTERVALS (MOTORS HAVING REGREASING CAPABILITY)

New motors having been in storage for over a year should be relubricated by the procedure noted below. The following relubrication intervals are suggested as a guide for long operating life.

Hours of service per year	Suggested relube interval		
	NEMA FRAME SIZE		
	42 to 215T	254 to 326T	364 to 447T
5000 hours	5 yr.	3 yr.	1 yr.
Continuos normal application	2 yr.	1 yr.	9 mos.
Seasonal service Motor is idle for 6 months of more	1 yr. (beginning of season)	1 yr. (beginning of season)	1 yr. (beginning of season)
Continuous high ambient, dirty or moist locations, high vibration, or where shaft end is hot (pumps-fans).	6 months	6 months	3 months

LUBRICANT

Baldor motors are pre-greased normally with Shell Oil company's "Dolium R". Several equivalent greases which are compatible with the Baldor furnished grease are Chevron Oil's "SRI No.2" and Texaco Inc. "Premium RB".

PROCEDURE

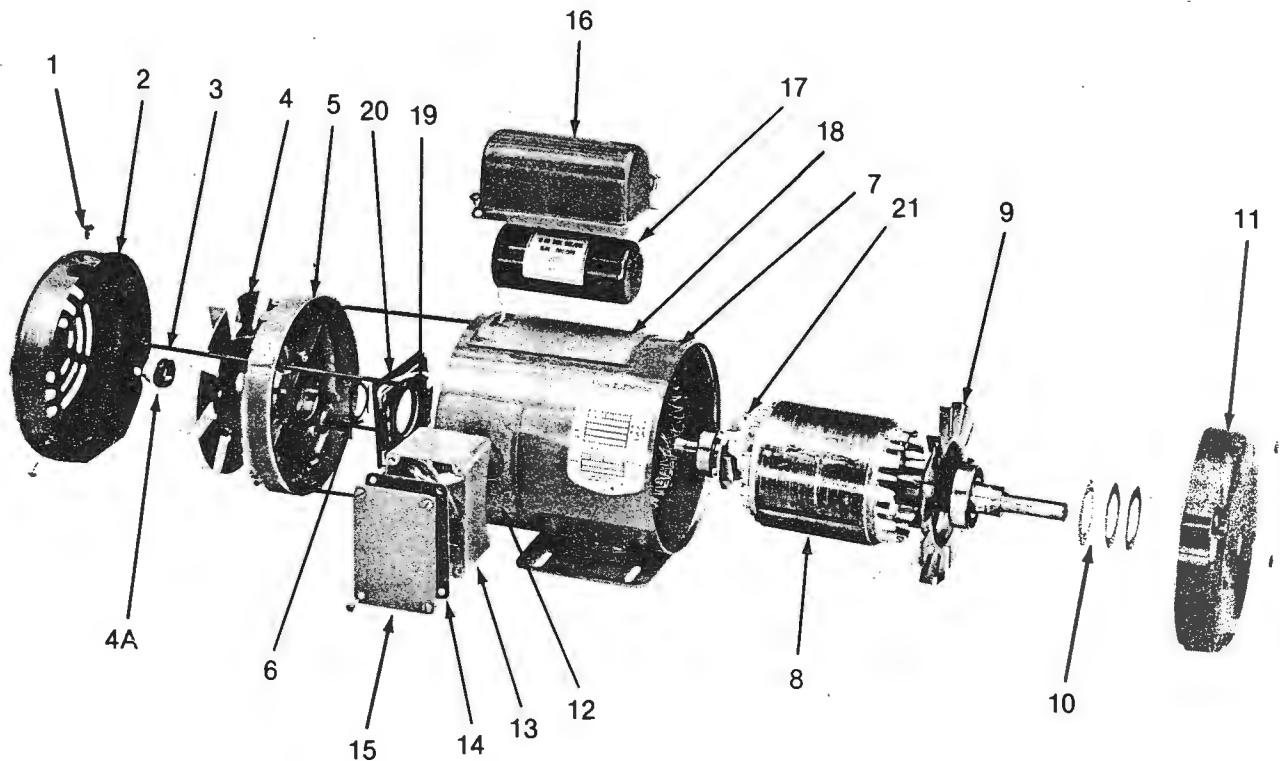
Overgreasing bearings can cause premature bearing failure. If motor is equipped with alemite fitting, clean tip of fitting and apply grease gun. Use 1 to 2 full strokes on motor in NEMA 215 frame and smaller. Use 2 to 3 strokes on NEMA 254 thru NEMA 365 frame. Use 3 to 4 strokes on NEMA 404 frames and larger. On motors having drain plugs, remove grease drain plug and operate motor for 20 minutes before replacing drain plug.

On motors equipped with slotted head grease screw, remove screw and apply grease tube to hole. Insert 2 to 3 inch length of grease string into each hole on motors in NEMA 215 frame and smaller. Insert 3 to 5 inch length on larger motors. Motors having grease drain plugs, remove plug and operate motor for 20 minutes before replacing drain plug.

Caution: keep grease clean. Lubricate motors at standstill. Remove and replace drain plugs at standstill. Do not mix petroleum grease and silicone grease in motor bearings.

**33-34-35-36-37 SERIES
NEMA 42 THROUGH 215T
RENEWAL PARTS IDENTIFICATION
AC TOTALLY ENCLOSED MOTORS**

em4910



ITEM NO.	PART NAME AND DESCRIPTION	ITEM NO.	PART NAME AND DESCRIPTION
1	Fan Cover Mounting Screws (3)	11	Shaft End Plate
2	Fan Cover	12	Conduit Box Gasket
3	Thru Bolt (4 Per Set)	13	Conduit Box
4	External Cooling Fan	14	Conduit Box Lid Gasket
4A	Fan Locking Hub	15	Conduit Box Lid
5	End Plate, Front (Fan End)	16	Capacitor Cover (Single Phase Only)
6	Thrust Washer	17	Capacitor (Single Phase Only)
7	Wound Stator Assembly	18	Capacitor Gasket (Single Phase Only)
8	Rotor and Shaft Assembly*	19	Stationary Switch (Single Phase Only)
9	Internal Cooling Fan	20	Switch Insulator (Single Phase Only)
10	Bearing Guards	21	Rotating Switch, Specify RPM

*Less Bearings

Electrical Motor Performance Data Table

Baldor Electric Hostile Environment Dirty Duty Motors

HP	RPM	NEMA Flame	Baldor #	Spec. #	Winding #	Power*	SF	NLA	FLA	LRA	FLT	BDT	LRT	EFF	PF
.33	1725	56C	VM8001	34K38-872	34-872	380/60/3	1	0.5	0.7	5.2	1.0	4.7	3.4	—	—
1/2	1725	56C	VM8001	34K38-872	34-872	460/60/3	1.25	0.80	1	6.5	1.5	7	5.3	74	63
1/2	1425	56C	VM8001	34K38-872	34-872	380/50/3	1	0.8	1.2	5.9	1.8	6.3	5.2	—	—
1/2	1725	56C	VM8001	34K38-872	34-872	415/50/3	1	0.6	0.7	5.7	1.5	5.6	4.2	—	—
1/2	1725	56C	VM8002	34K38-883	34-883	380/60/3	1	0.8	1.1	7.9	1.5	6.6	5.5	—	—
3/4	1725	56C	VM8002	34K38-883	34-883	460/60/3	1.25	1.25	1.5	10	2.25	10	8.8	76	64
3/4	1425	56C	VM8002	34K38-883	34-883	380/50/3	1	1.2	1.6	9.2	2.7	9.1	8.8	—	—
3/4	1450	143T	VM8003T	05E55W01	05W01	415/50/3	1	—	1.9	—	—	—	—	—	—
3/4	1725	143TC	VM8003T	05E55W01	05W01	380/60/3	1	0.9	1.4	9.3	2.3	8.8	6.6	—	—
1	1725	56C	VM8003	34K38-3254	35-87	460/60/3	1.15	1.4	1.8	14.5	3	14.6	15.8	82.5	66
1	1425	56C	VM8003	34K38-3254	35-87	380/50/3	1	1.9	2.0	10.2	3.7	11.7	9.5	—	—
1	1725	56C	VM8003	34K38-3254	35-87	380/60/3	1	0.9	1.7	9.3	3.1	8.8	6.6	—	—
1	1725	56C	VM8004	35K52W206	35W206	380/60/3	1	1.2	1.9	13.6	3	13.1	9.1	—	—
1	1425	143TC	VM8003T	05E55W01	05W01	380/50/3	1	1.9	2.0	10.2	3.7	11.7	9.5	—	—
1	1725	143TC	VM8003T	05E55W01	05W01	460/60/3	1.15	1.3	1.7	11.6	3	12.2	10.1	82.5	72
1.5	1725	56C	VM8004	35K52W206	35W206	460/60/3	1.15	1.8	2.5	18	4.5	19.4	14.9	84	72
1.5	1425	145TC	VM8005T	05E55W03	06W03	380/50/3	1	1.7	2.8	19	5.5	20.6	18.8	—	—
1.5	1725	145TC	VM8005T	05E55W03	05W03	380/60/3	1	1.2	2.6	17	4.5	15.4	12.7	—	—
1.5	1725	145TC	VM8004T	05E55W02	05W02	460/60/3	1.15	1.8	2.5	17.3	4.5	18	14.5	84	72
2	1725	145TC	VM8005T	05E55W03	05W03	460/60/3	1.15	1.7	3.1	21	6	23	19.4	84	77
2	1725	182TC	VM8006T	06H81W04	05W03	380/60/3	1	2.3	3.2	26	6.2	15.4	12.7	—	—

Note: The information in above table is from Baldor AC CD-ROM catalog, published January 1, 1997, and other various communications from

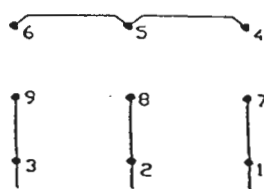
Baldor. The nomenclature abbreviations in the table are as follows:

SF: Service factor.	NLA: No load amp.
FLA: Full load amp.	LRA: Lock rotor amp.
FLT: Full load torque.	BDT: Break down torque.
LRT: Lock rotor torque.	EFF: Efficiency at full load.
PF: Percentage power factor under full load.	

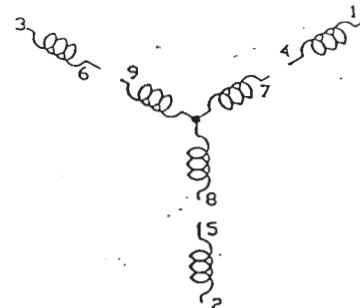
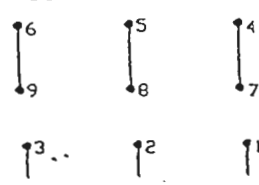
*- Note: Although only high voltage has been listed, all above motors are multiple lead dual voltage style.

Wiring Diagram - 3 Phase - 9 Lead, Dual Voltage Motor

LOWER VOLTAGE



HIGHER VOLTAGE



Torque Gauge Functions

For "F" Type Drive

OPERATION PRINCIPLE

The torque gauge assembly is activated by hydraulic pressure changes in the type "F" speed reducer. A hydraulic pressure line connects the torque gauge assembly to the type "F" speed reducer. The pressure is measured by the torque gauge. Pressure switches are also installed in the system, which can initiate an alarm and the motor cut-off when the torque (pressure) exceeds pre-set limits. The switches are set to customer specifications.

Referring to the drawing, the components and their functions are as follows:

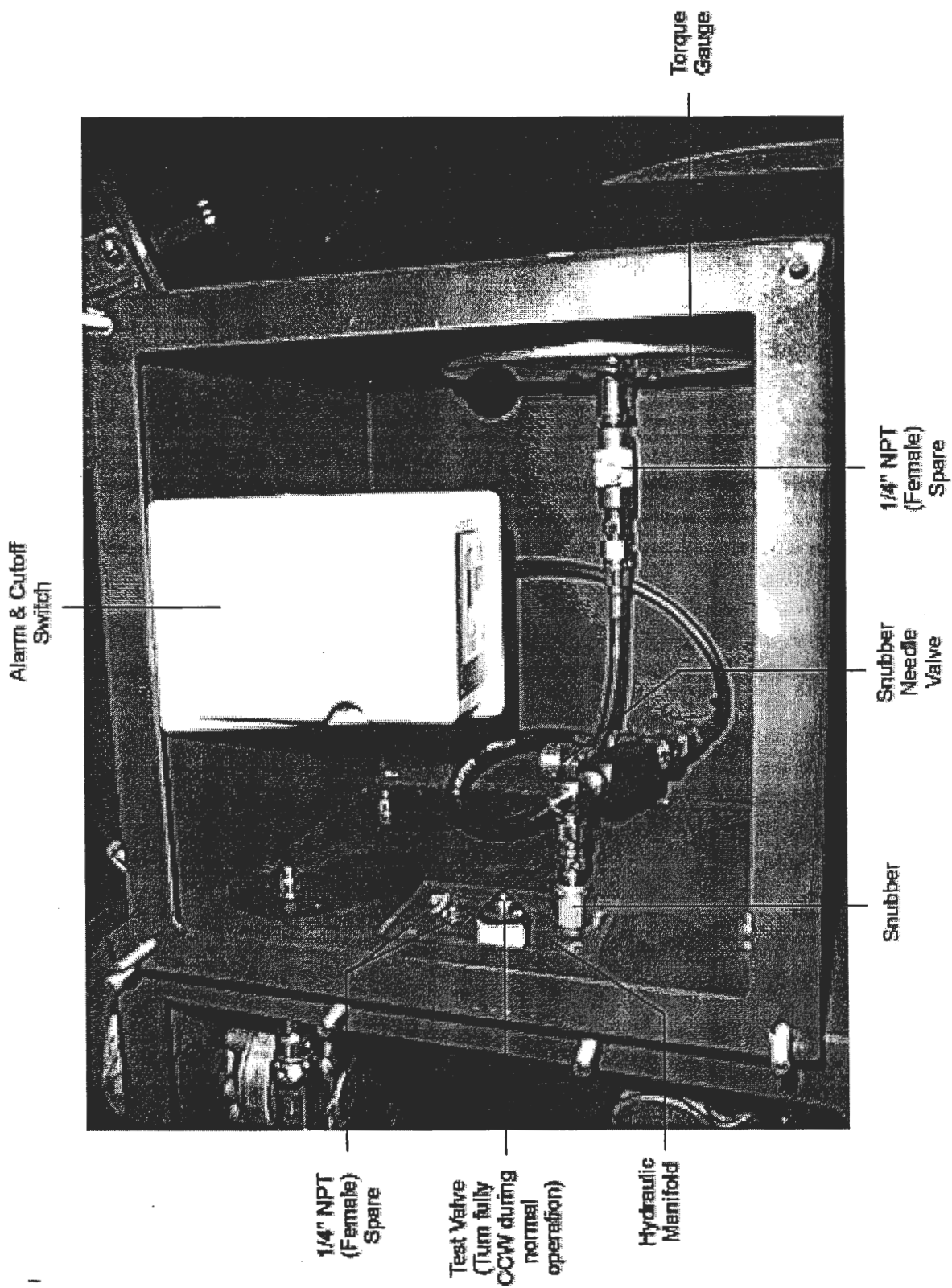
1. The 6" diameter stainless torque gauge is factory calibrated to indicate the output torque of the drive unit.
2. The snubber is present to protect gauge from pressure noise.
3. The cartridge type needle test valve is used to test the operation of the gauge and limit switches. The valve must be fully open during normal operation. Turn the screw on the test valve counter-clockwise to open.
4. The optional 4-20 ma transducer is for remote torque indication.
5. An optional four-way directional control valve is used for reversing the direction of rotation. Push the knob and twist to change directions. Caution: Not all clarifiers are designed to run backwards.
6. The alarm and cutoff switches will generate electrical signals that can be used to protect the drive unit.

TORQUE GAUGE DISASSEMBLY INSTRUCTIONS:

1. Have qualified personnel disconnect electric power.
2. Remove torque gauge box lid. Remove switch cover.
3. Disconnect electric wiring from the torque switch.
4. Disconnect hydraulic fittings.
5. If desired, unbolt switch housing from torque gauge box.
6. Remove three screws and nuts, which hold the gauge into torque box.
7. Remove complete assembly through the gauge panel hole.

ASSEMBLY PROCEDURES

Assemble in reverse order and use a hydraulic anaerobic sealant on the hydraulic fittings. If the electric torque switches need to be reset, refer to the switch adjustment instructions contained in this manual.



Instructions for Use Adjustable Snubber¹

A fixed snubber with porous media is installed on most of DBS standard F type drive units. It attenuates system pressure spikes and protects sensitive pressure gauge and switches. There have been instances that additional snubbers are required to further damp out system pressure spike and stabilize needle indications. The additional snubber selected by DBS is an adjustable needle valve, which can be field installed or factory installed in series with the fixed snubber.

To adjust the snubber needle valve:

1. Run the drive unit.
2. Open the snubber needle valve one turn counter-clockwise and observe the torque gauge needle vibration.
3. Slowly close the snubber needle valve and notice the reduction in the needle movement on the torque gauge until it is less than 3/8". Note: the needle should stabilize in the middle of its original bouncing range. The snubber needle valve will be almost completely closed.
4. If the clarifier tank is not loaded. The test valve may be used to increase system pressure. Slowly turn the test valve clockwise to bring the pressure gauge indication to about 70% of alarm. Perform step 2 and 3 to adjust the snubber needle valve. Turn the test valve counter-clockwise fully after the adjustment.
5. Lock the snubber needle valve knob by tightening the set screw.

¹ The term snubber has been loosely used for components that are for controlling or damping hydraulic system pressure spikes. A fixed snubber typically refers to a snubber with porous media. An adjustable snubber is typically made of a needle valve with an adjustment knob.

Installation and Adjustment Instructions¹

Ashcroft® L-Series Snap Action Switches For Pressure Control

OPERATION

The **ASHCROFT®** pressure control is a precision device, which features a snap action switch. Fixed deadband is available with single or dual SPDT independently adjustable switches.

Series LP-D switches may be set to operate simultaneously or up to 85 percent of the range apart. The deadband of each switch will be within the limits noted on the nameplate. If settings are different, the "B" switch must be set higher than the "A" switch.

MOUNTING

The "L" Series **ASHCROFT** snap action pressure switch has a NEMA-4 enclosure, which is an epoxy coated aluminum casting.

Two holes in the integral bracket are used to surface mount the control. Location of these holes is shown on the general dimension drawings. Mount on a vibration free surface in any orientation. When tightening control to pressure line, always use the wrench flats or hex on the pressure connection. *NEVER TIGHTEN BY TWISTING THE CASE*

ELECTRICAL CONNECTION

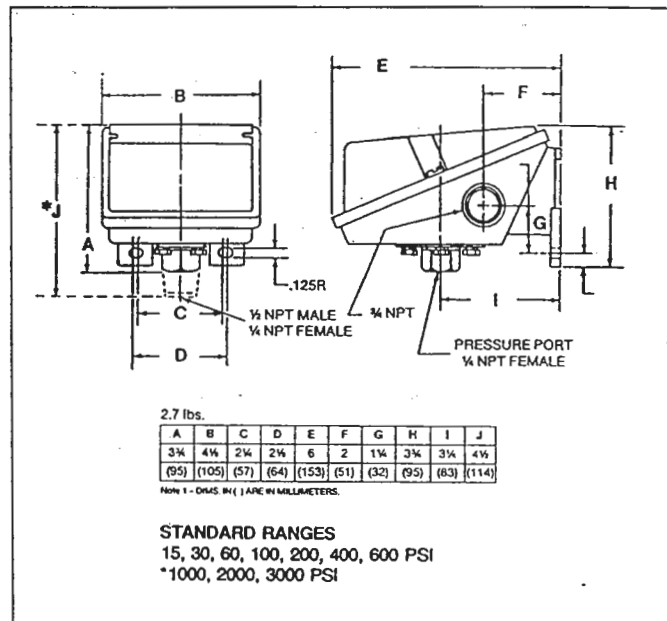
Remove cover, held in place by two screws.

On all units except one with terminal blocks, wire directly to the switch according to circuit requirements. On units with terminal blocks, wire directly to terminal blocks as required.

Terminals are marked common (C) normally open (NO) and normally closed (NC).

CONDUIT CONNECTIONS

One 3/4" NPT hole is fitted with a shipping plug, and two additional knockouts are provided. The knockouts may be removed by placing a screwdriver in the slot and rapping sharply with a hammer. It is recommended that Teflon tapes or other sealant be used on conduit bushings or plug threads to ensure integrity of the enclosure.



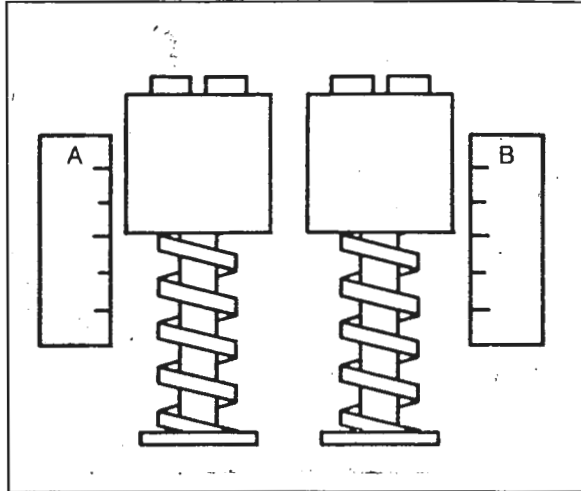
¹ This is a modified copy of Ashcroft form # 251-2870. For original copies, contact Dresser Industries, Instrument Division, Control Instruments Milford, Connecticut 06460. /Milford Operations 210 old Gate Lane V-203-878-5641 F-203-877-8519 1&M shot.doc Copy right 5/97.

SET POINT ADJUSTMENTS

Set points are changed by means of the set point adjusters. LP-D dual switch each has two adjusters. On switches with two adjusters, the one on the left is referred to as "A" and the one on the right is referred to as "B", (see illustration). Set points can be adjusted from 20 to 100 percent of full range on increasing pressure.

SERIES LP-D DUAL SWITCH

Remove cover. For set point adjustment on either increasing or decreasing pressure. Use the test valve in the torque gauge box on a DBS F-type drive or compress the reaction cylinder on a DBS E-type drive to control system pressure into the switch. Turn the test valve slowly to ensure accurate adjustment. Monitor switch with a light or meter.



Pressurize the system to the required higher set point pressure and turn adjuster "B" until the switch operates or resets as required. When the set point has been achieved, raise and lower the pressure to ensure that the set point is correct. Then reduce system pressure to the required lower set point pressure and turn adjuster "A" until the switch operates or resets as required. Verify this set point by raising and lowering pressure. Now increase system pressure to higher set point and make final adjustment on "B".

SOME PRECAUTIONS TO OBSERVE

Do not loosen the screws holding the precision switch element(s) or mounting bracket in place.

Nameplate PROOF pressure should not be exceeded. Intermittent operation up to proof pressure is permissible, however, some change of set point may be noted.

Operation and correct set point actuation should be periodically tested.

Installation & Maintenance Sheet Supplement

For CE mark on Ashcroft® switches

Low Voltage Directive 73/23/EEC

Installation requirements

- To minimize the risk of injury, the switch enclosure must be selected according to the area classification and installed according to the required safety and electrical codes.
- Before operating the switch all conduit entries and/or junction boxes need to be closed according to the required safety and electrical codes.

- To attain the degree of protection listed on the switch it may be necessary to add required conduit fittings.
- The switch must be protected from moisture, shock and/or extreme vibration.
- The ambient temperature limits for switches are –20 to 150°F, (-28 to 65°C).

Cautions

- Always install the cover after wiring the switch and before power is supplied.
- Before removing the cover in hazardous areas be sure there is no explosive atmosphere present and the power supply is turned off.
- For CENELEC approved switches all safety locking devices and electrical earthing must be installed or connected before operating.
- Never carry a temperature switch by holding only the stem, bulb or capillary.
- Do not exceed ranges, current and/or voltage limits.
- The protection degree of the switch is only valid when the switch is installed in accordance with all safety and electrical codes and regulations.

Cleaning

- Never use aggressive solvents.
- Do not use high-pressure water to clean the switch.

Maintenance/Trouble Shooting

- All Ashcroft switches require little or no maintenance
- Be sure that the case is closed at all times.
- When the switch is exposed to process media that may harden and/or build up in the pressure port, the switch should be removed and cleaned as needed.
- If the switch does not function, only trained and skilled personnel should check on the wiring, power supply and/or mounting.
- If the problem can not be solved, please contact one of the Dresser affiliates or distributors.

Electrical connections

- Only trained and skilled personnel are allowed to install the wires to the electrical terminals of the switch.
- Cable couplers, glands and conduit connectors must have the correct electrical approvals.
- Always follow safety and electrical regulations when connecting these devices.
- The system ground of the device is marked with a green colored screw and/or by the ground symbol.
- CENELEC approved switches have an external ground screw that must be connected.

- Micro switch terminals and wire color codes:

NO (Normally Open), Blue

NC (Normally Closed), red

C (Common), white

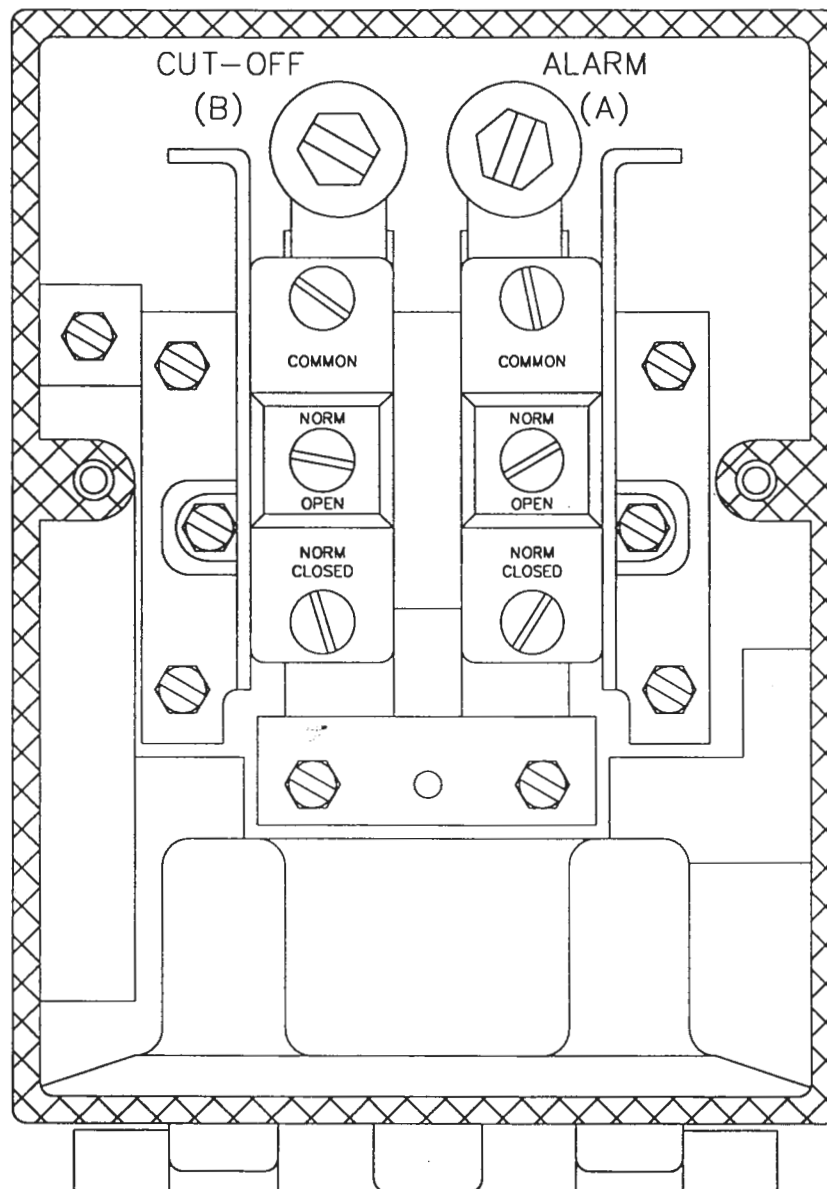
Ground, green (F-Series only)

Table 1: Micro switch electrical ratings

Micro Switch Code				Electrical Rating	
Single	Dual	Single	Dual	Vac	Vdc
K	KK	20	61	15A, 250V	0.4A, 120V
W	WW	21	65	5A, 250V	
P	PP	22	67	5A, 250V	2.5A, 28V
C	N/A	23	N/A	22A, 250V	
G	GG	24	64	15A, 480V	0.25A, 250V
S	N/A	25	N/A	10A, 250V	10A, 250V
F	FF	26	62	15A, 250V	0.4A, 120V
Y	YY	27	63	15A, 250V	
U	UU	28	N/A	15A, 250V	
E	EE	29	N/A	15A, 250V	
M	MM	31	70	1A, 250V	50Ma, 60V
J	JJ	32	68	11A, 250V	5A, 30V
L	LL	42	71	1A, 125V	
N/A	N/A	50	N/A	15A, 250V	
H	HH	35	NA	10A, 250V	0.3A, 250V

Ashcroft Switch Diagram

ASHCROFT - LPD-N4-GG-B-25	
SWITCH ELEMENTS FOR LPD CONTROL	
GG GENERAL PURPOSE	15A, 125/250/480 VAC
	1/2A, 125 VDC
	1/4A, 250 VDC



Note: Cut-off setting has to be higher than Alarm setting.

DBS[®]



HELICAL SPEED REDUCERS

FOR AERATION, AGITATION & MIXING

PRODUCT UPDATE

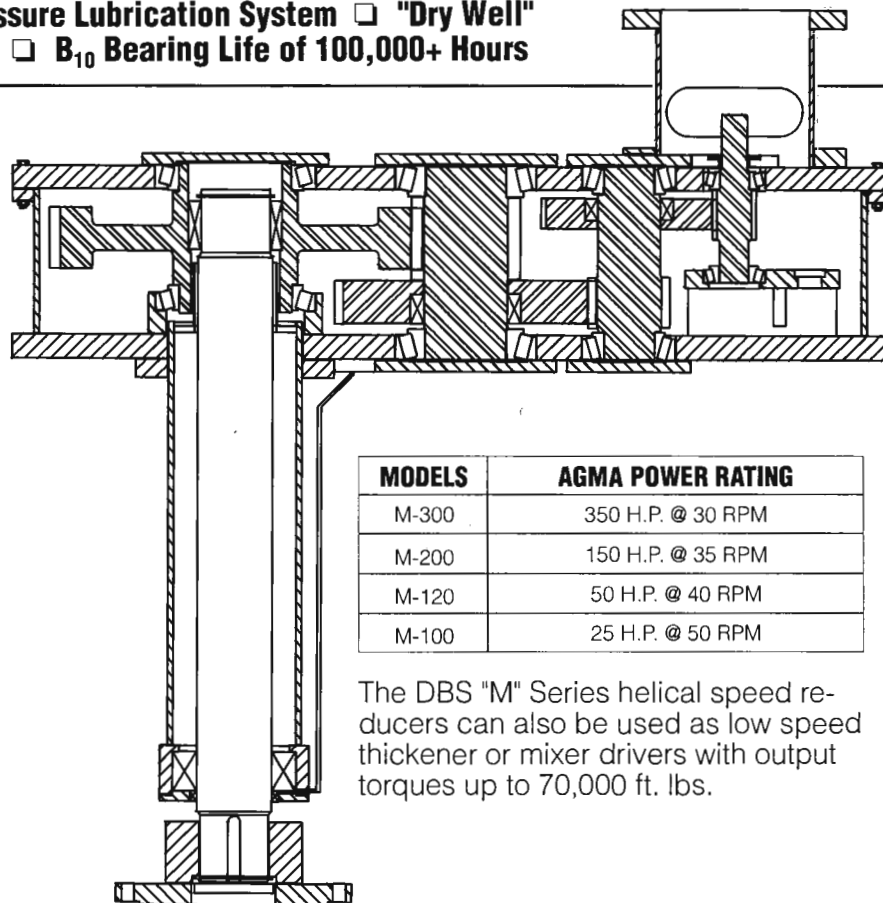
THE DBS[®] HELICAL SPEED REDUCER FOR AERATION, AGITATION & MIXING

DBS "M" Series helical speed reducers are specifically designed for use in aeration, agitation, and mixing where shock loads are high, and reliability is the top priority. These heavy duty gearboxes feature hardened and ground alloy steel gears supported by oversized tapered roller bearings.

Internally, the DBS gearbox uses no keys, but relies on modern friction locking assemblies to accurately attach gears to shafts.

The DBS gearbox is a "dry well" design to prevent lubrication oil from leaking out of the gearbox. The DBS lubrication system consist of an oil filter, oil pump, oil flow switch, and distribution lines that provide oil to all gears and bearings. The gearboxes are also provided with an oil fill and inspection port, oil dip stick, and oil sight gauge with thermometer.

Design Features: ☐ Hardened & Ground Alloy Steel Gears ☐ 2 Year Warranty
☐ Pressure Lubrication System ☐ "Dry Well"
Design ☐ B₁₀ Bearing Life of 100,000+ Hours



MODELS	AGMA POWER RATING
M-300	350 H.P. @ 30 RPM
M-200	150 H.P. @ 35 RPM
M-120	50 H.P. @ 40 RPM
M-100	25 H.P. @ 50 RPM

The DBS "M" Series helical speed reducers can also be used as low speed thickener or mixer drivers with output torques up to 70,000 ft. lbs.

DBS MANUFACTURING INCORPORATED

FAX NUMBER

5421 HILLSIDE DRIVE, FOREST PARK, GEORGIA 30050 · (404) 768-2131 · (800) DBS-7010 · (404) 761-6360

DBS Lubrication & Maintenance Schedule

For E / F Type Drives

A DBS drive unit is made up of several speed reducers coupled together. Every speed reducer is totally enclosed and lubricated. The recommended lubricants and oil change intervals are listed in this section. Some gearboxes are sealed and permanently lubricated, and require no further service. Proper care of your drive unit will ensure long machine life. Always maintain proper oil levels and follow the recommendations below.

BASIC LUBRICATION AND MAINTENANCE SCHEDULE

	All Drives	F Type Drive	E-Type Drive
Storage (>30 Days)	Add oil to the main gear housing.		
First 10 Days		Replace filter.	
Every Week	Inspect oil in the main gear housing.		
Every Month	On DE- _X models & DF- _X models, grease main bearing grease fitting 6 pumps while running.		
Every 3 Months		Replace filter.	Grease worm box top bearing.
Every 6 Months	On "D" models, change oil in the main gear housing.		
Every 1 Year	On "S" models, change oil in the main gear housing.	Change oil.	
Every 10 Years	Inspect all reducers, overhaul as required.		

SEVERE ENVIRONMENT LUBRICATION AND MAINTENANCE SCHEDULE

The time interval specified in the basic lubrication and maintenance schedule should be reduced if the following conditions exist:

1. High humidity, dust or dirt, and/or corrosive chemical atmosphere.
2. **Water Contamination** - Check for any accumulated water in the main gearbox and drain condensate as required. The frequency will depend on the amount of humidity in the atmosphere. The gearbox should be checked weekly until it is determined how quickly the condensate accumulates.

PROCEDURES TO REPLACE HYDRAULIC FILTER--F-TYPE.

1. Turn the machine off and wait 2 minutes for the oil in the filter to drain.
2. Unscrew the filter counterclockwise slowly until the seal is broken. Allow one additional minute to drain the filter; then remove the old filter. Wipe off the surface where the filter contacts the lid.
3. Put a layer of oil on the new filter gasket surface. Tighten new filter 3/4 of a turn after seal contacts base.



**City of Poughkeepsie – Wastewater Treatment Plant Secondary
Clarifier Weir Modifications dated April 2008**



HDR Engineering, Inc.

Contract Drawings For

CITY OF POUGHKEEPSIE - WASTEWATER TREATMENT PLANT SECONDARY CLARIFIER WEIR MODIFICATIONS

Project No.
113-77446

POUGHKEEPSIE, NEW YORK
APRIL, 2008

Site Location

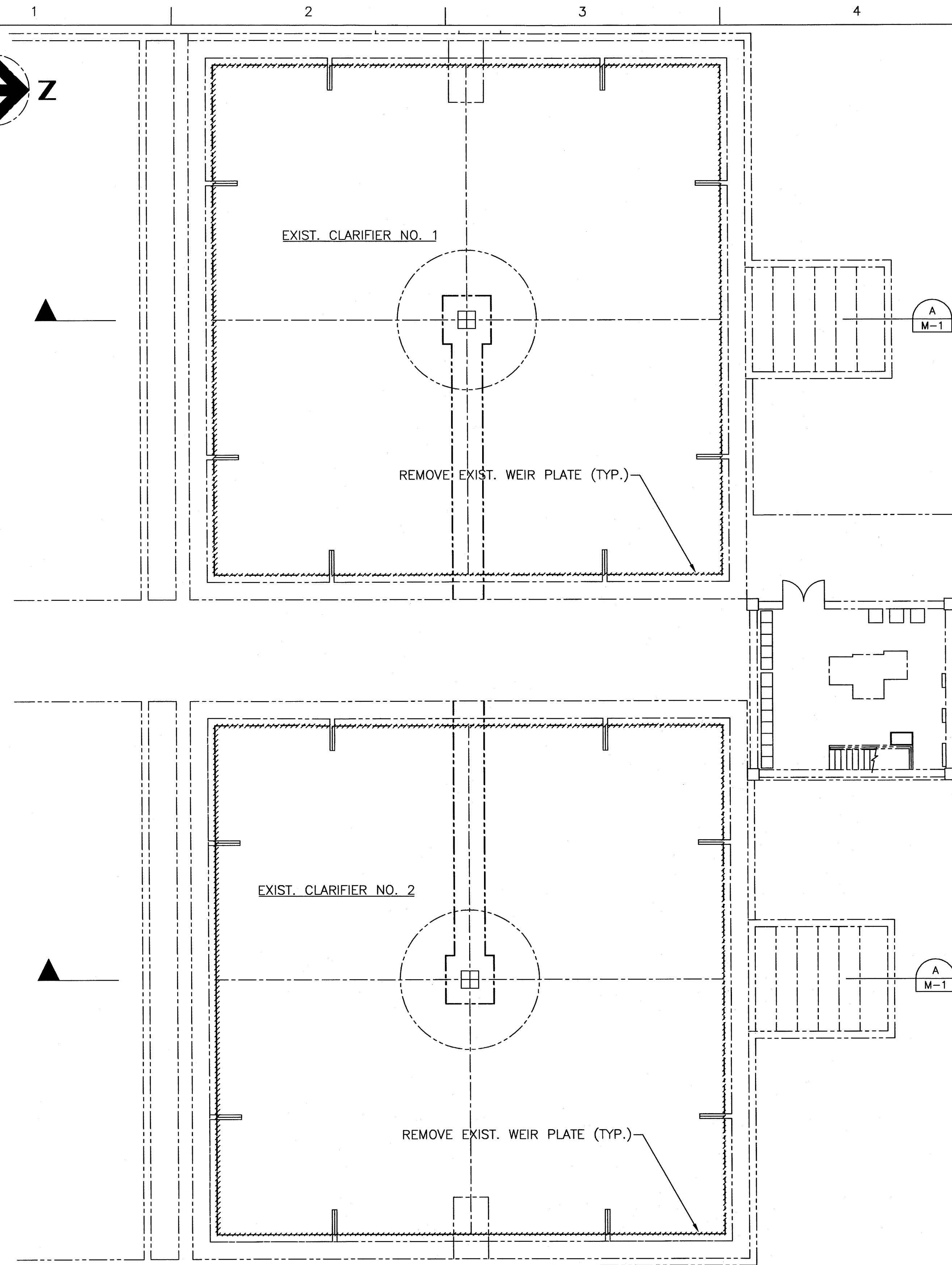
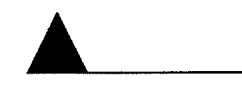
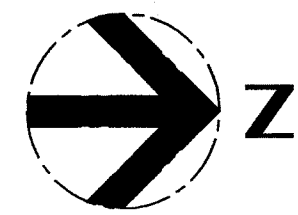


Location Map

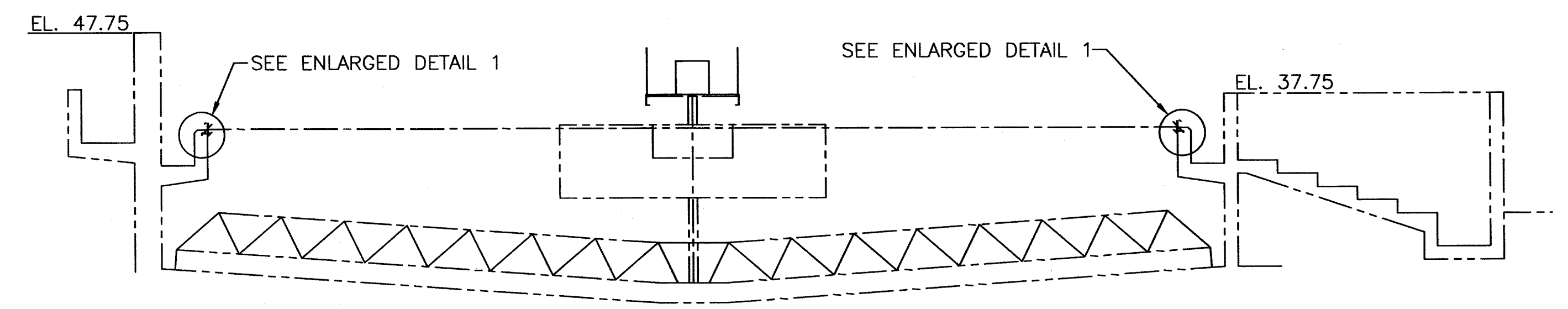
INDEX OF DRAWINGS

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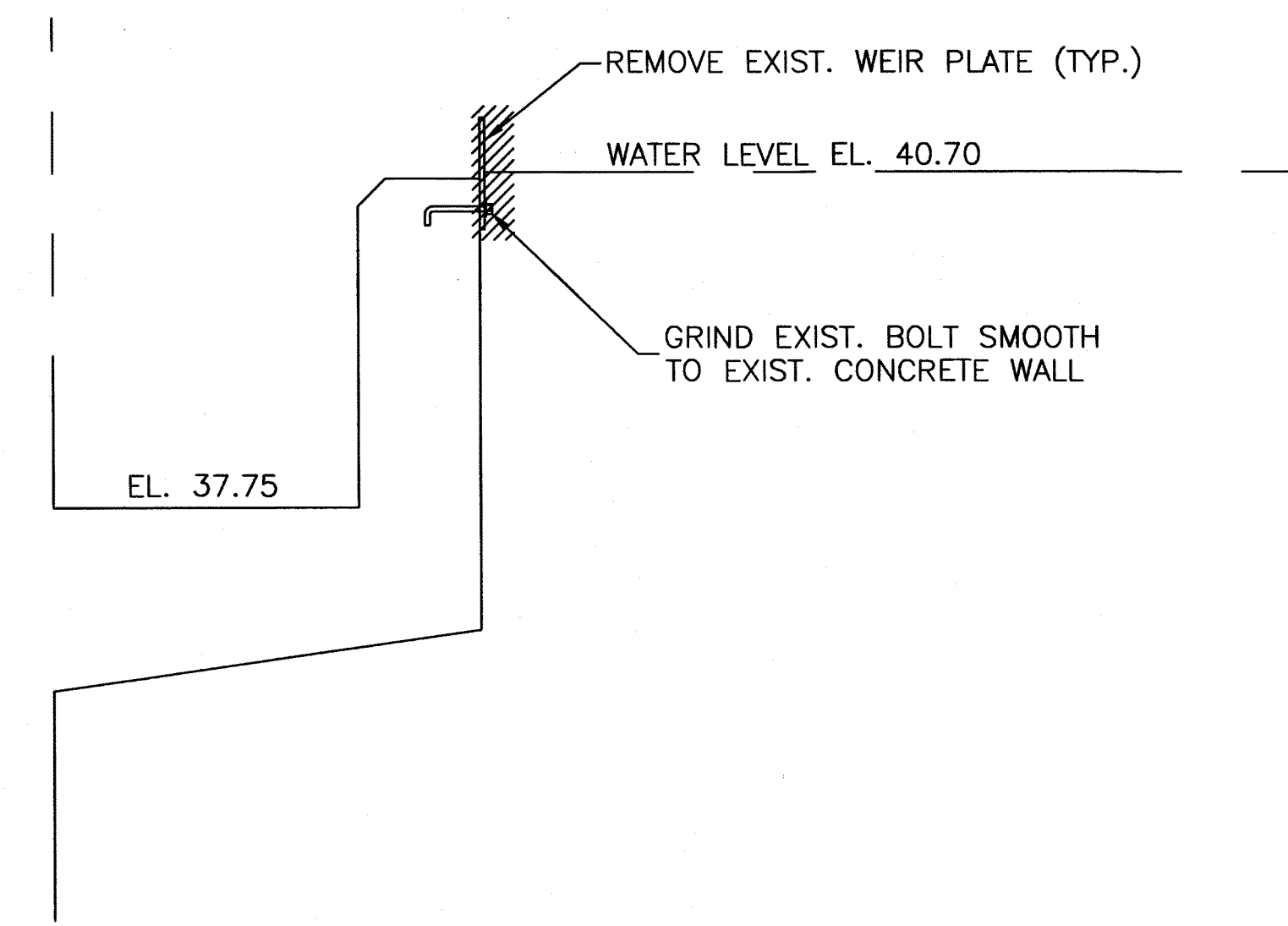
- | | |
|----|---|
| | PROJECT COVER SHEET AND SHEET LIST |
| M1 | SECONDARY CLARIFIER WEIR MODIFICATIONS DEMOLITION |
| | PLAN, SECTION, AND DETAILS |
| M2 | SECONDARY CLARIFIER WEIR MODIFICATIONS |
| | PLAN, SECTION, AND DETAILS |



PLAN
SCALE: 1"=10'-0"



SECTION-A
SCALE: 1/8"=1'-0"



ENLARGED DETAIL-1
SCALE: 3/4"=1'-0"



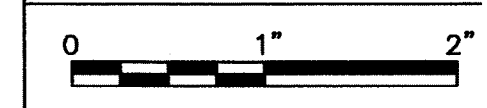
HDR Engineering, Inc.

B		ISSUED FOR BID
A	2/29/08	ISSUED FOR REVIEW AND COMMENT
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	B. LASKEY
ARCHITECTURAL	-
CIVIL	-
STRUCTURAL	M. PAINE
MECHANICAL	K. KENNEDY
ELECTRICAL	D. ANGELOPOULOS
INSTRUMENTATION	-
DRAWN BY	ES
PROJECT NUMBER	77446

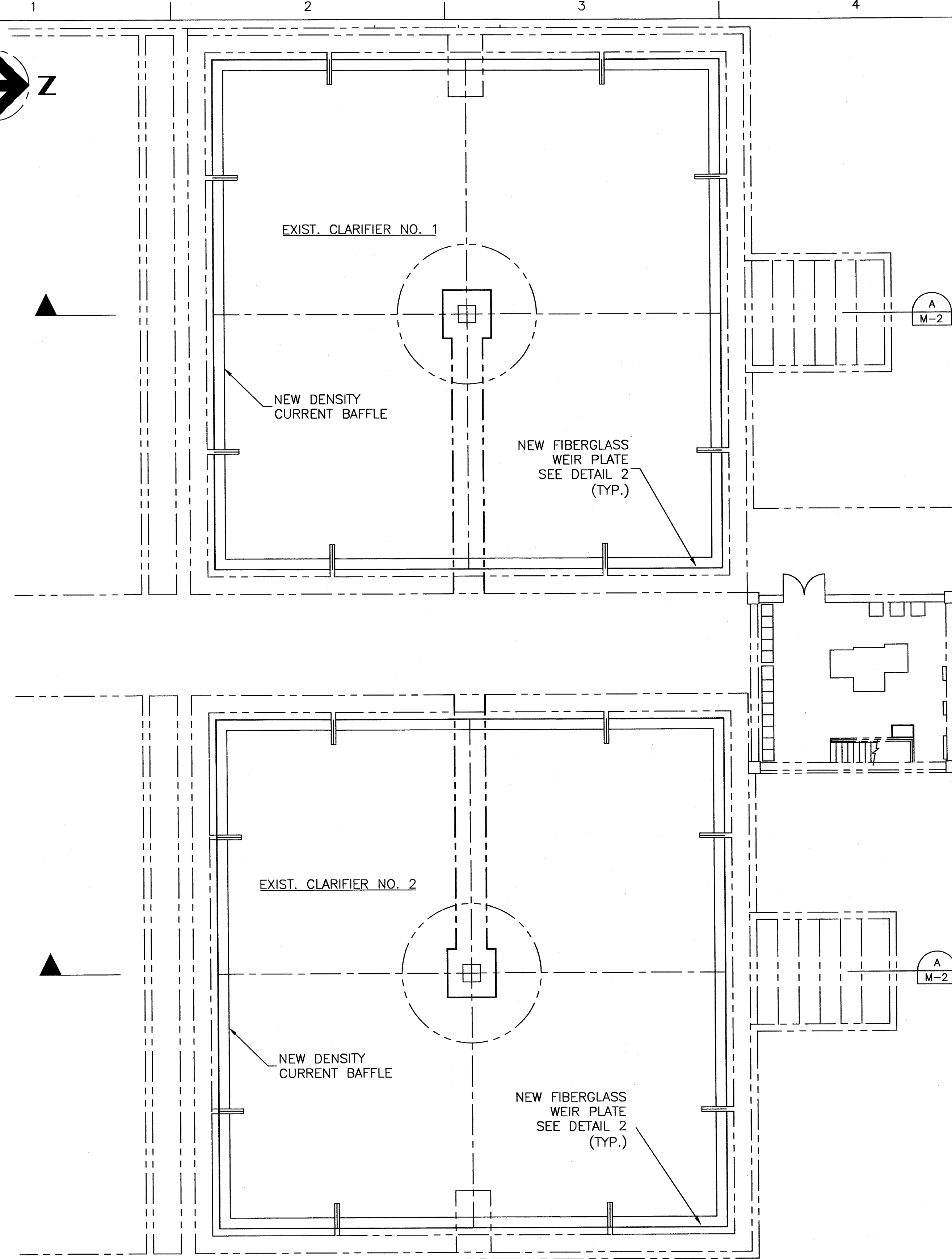
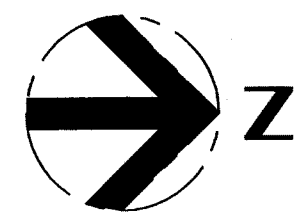
CITY OF POUGHKEEPSIE
SECONDARY CLARIFIER
WEIR MODIFICATIONS

SECONDARY CLARIFIER
WEIR MODIFICATIONS
DEMOLITION
PLAN, SECTION, AND DETAILS

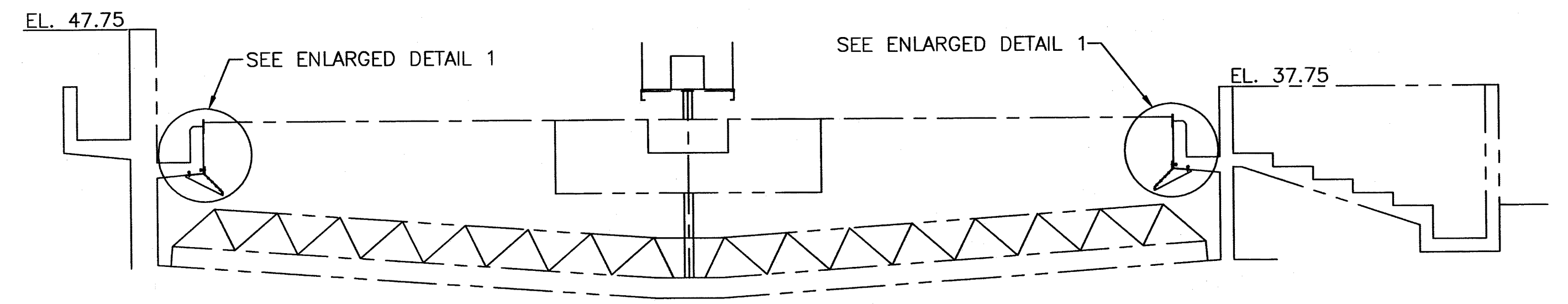


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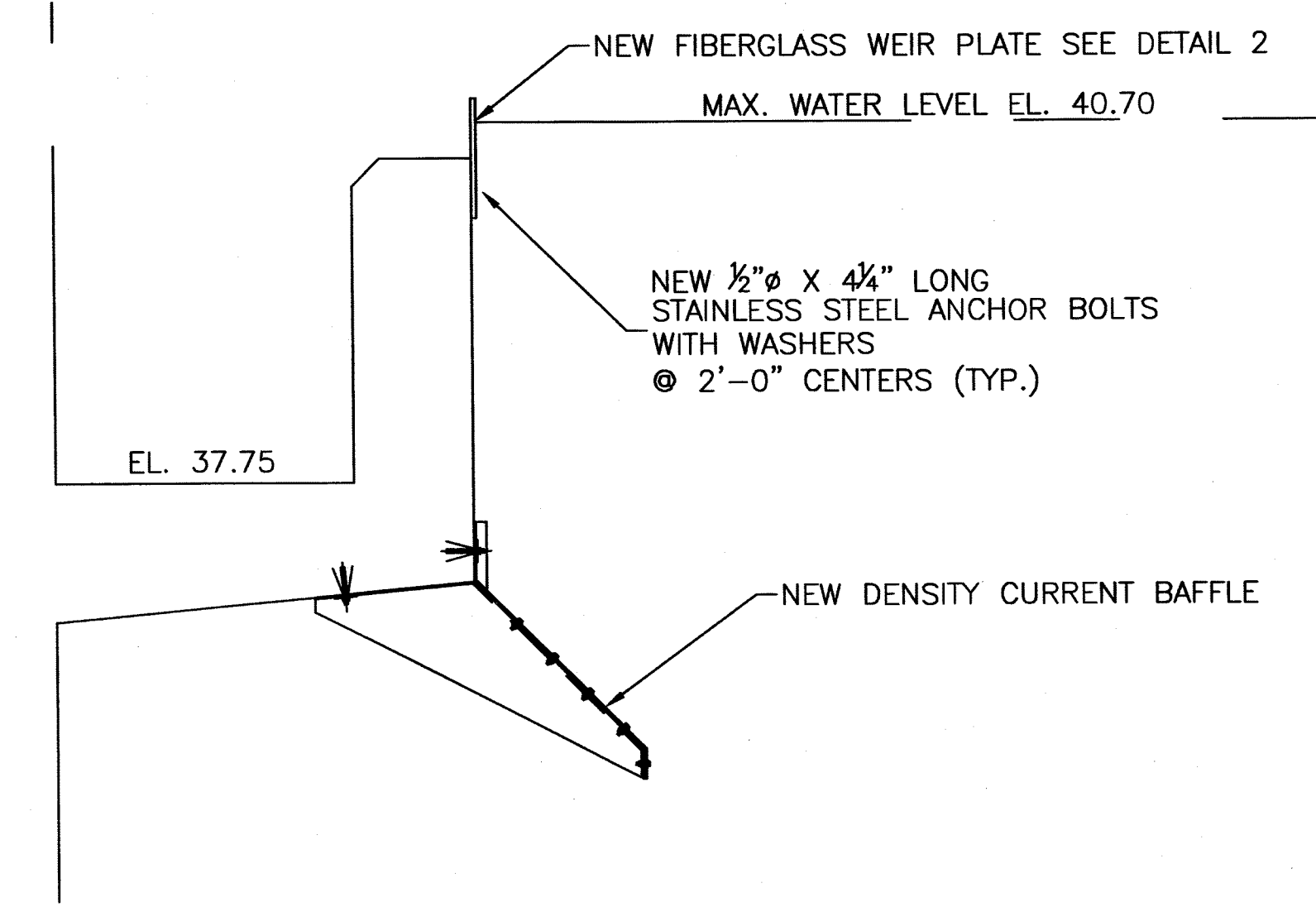
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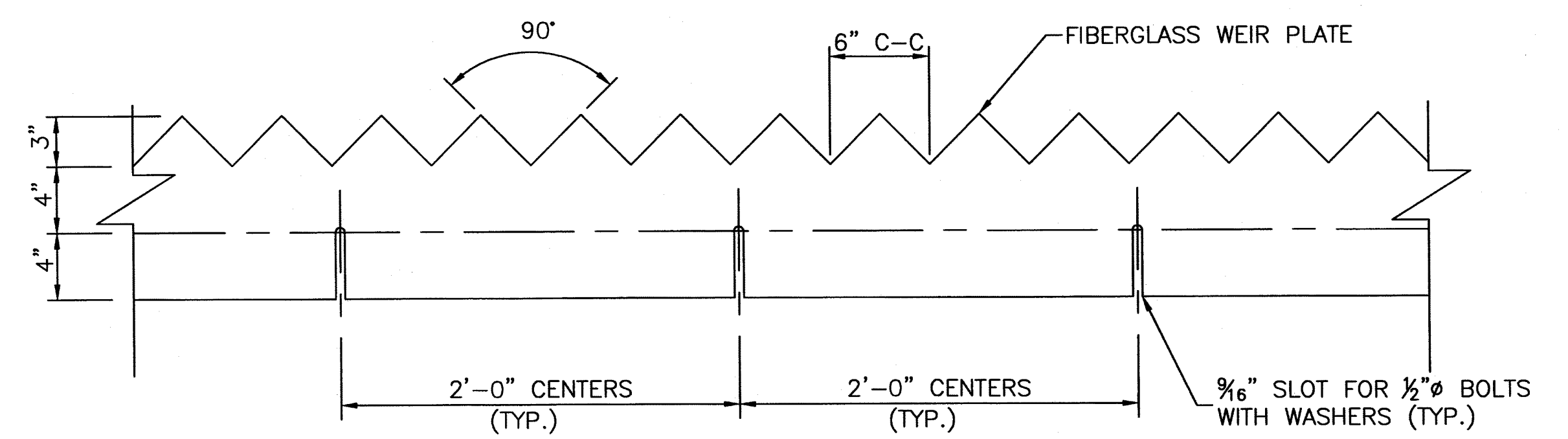
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SCALE: 1"=10'-0"



SECTION-A
SCALE: 1/8"=1'-0"



ENLARGED DETAIL-1
SCALE: 3/4"=1'-0"



WEIR PLATE
DETAIL-2
SCALE: 3/4"=1'-0"

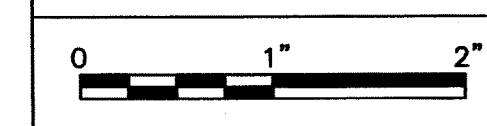


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PROJECT NUMBER	77446

CITY OF POUGHKEEPSIE
SECONDARY CLARIFIER
WEIR MODIFICATIONS

SECONDARY CLARIFIER
WEIR MODIFICATIONS
PLAN, SECTION, AND DETAILS



FILENAME	M2.DWG
SCALE	1"=10'-0" U.O.N.

SHEET
M2

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SAMPLE CONTRACT

AGREEMENT CONTRACT

AGREEMENT MADE AS OF THIS **XXST day of XXXXX 20XX** by the CITY OF POUGHKEEPSIE, NEW YORK, a municipal corporation created and organized under the laws of the State of New York with offices at the Municipal Building, 62 Civic Center Plaza, Poughkeepsie, New York 12601, hereinafter referred to as the OWNER, and _____, with business offices located at _____, hereinafter referred to as the CONTRACTOR; and

WHEREAS, the CITY is desirous of having certain work undertaken as more specifically detailed in the annexed bid documents, entitled **RFB-COP-04-21-01 WPCP Secondary Clarifier**, which are incorporated herein as Schedule "A" and hereinafter referred to as the "Work;"

WHEREAS, the funds for the Work have been duly appropriated by the Common Council of the City of Poughkeepsie and appear in the budget for the Fiscal Year 2021, funds available through _____ Project: _____ Subproject: _____

WITNESSETH, that upon the consideration, mutual covenants and agreements contained herein, the parties hereto, their successors and/or assigns, do mutually agree as follows:

ARTICLE 1 STATEMENT OF WORK

The Contractor shall furnish all labor, materials, equipment and incidentals required for the Work in strict compliance with the Specifications, schedules, plans and drawings, as reflected within Schedule "A" annexed hereto and made a part hereof.

ARTICLE 2 COMPENSATION

Pursuant to the contractor's bid proposal, the Owner agrees to pay the sum of **NOT TO EXCEED** _____ (**XXXXXXXXXX.XX**), for the Work to be performed in accordance with the terms and conditions of this Contract, and the Contractor agrees to accept said sum as full compensation for any and all Work performed, unless this Contract expressly provides otherwise. The schedule of said payments will be made in accordance with the terms contained in Article 9 herein.

ARTICLE 3 COMMENCEMENT OF WORK

The Contractor agrees to commence performance of the Work ~~on or about the~~ _____, ~~2021~~, ("commencement date") with the Work to be fully and satisfactorily completed by _____, 20XX.

ARTICLE 4 BONDS

The Following bonds, in form and substance acceptable to Owner, shall be submitted prior to the commencement of work:

Performance Bonds of 100% is required for this work.

Labor Bond of 100% is required for this work.

within ten (10) consecutive calendar days of said Notice of Award and will achieve Substantially Completion no later than 365 Days from Notice to Proceed.

ARTICLE 5 DEFINITIONS

All terms of this Contract shall have the same meaning as the same set forth in the Bid Documents, attached hereto as Schedule "A"

ARTICLE 6 OWNER AND CONTRACTOR'S REPRESENTATIVES

- a. The Work shall be performed under the direction of the Owner, who shall designate a representative hereinafter referred to as the "Engineer." The Engineer shall have complete charge of the Work and exercise full supervision and direction of the Work so far as it affects the interests of the Owner. The undertaking of the direction of Work by the Owner does not create any responsibility on behalf of the Owner to insure completion of Work, nor does it alleviate the full and complete responsibility of the Contractor to perform all Work in accordance with the terms of this Contract.
- b. The Contractor shall provide a full-time, on site supervisor for Contractor's employees, subcontractors and suppliers for the duration of the Work and whenever work is being performed at the site pursuant to the performance of this Contract. A qualified site supervisor must have the authority to represent the Contractor and make decisions for it with regard to the Work and must be able to give guidance and direction to employees, subcontractors and suppliers, and must be knowledgeable about the Work to be provided. Failure to provide a qualified site supervisor at the job site shall subject the Contractor to a damage penalty of Five Hundred Dollars (\$500.00) per day for each occurrence.

ARTICLE 7 PERFORMANCE OF WORK

- a. Workmanship - Material - Workers. Unless otherwise specifically provided for in the Specifications, all workmanship, equipment and materials incorporated in the Work are to be of the most suitable grade of their respective kinds for their intended purpose. Where equipment and materials are referred to in the Specifications as "equal to" a particular standard, the Engineer shall determine whether the machinery, equipment and materials, as well as their quantity, quality, acceptability and fitness to be used by the Contractor meet that standard of equality. The Contractor shall furnish to the Engineer for his approval the name of the manufacturer of machinery, materials and other equipment which it contemplates incorporating in the Work, together with their performance capacities, and such other information as may be pertinent or required by the Engineer. To the extent required by the Specifications or by the Engineer, the Contractor shall furnish for approval by the Engineer full information concerning the equipment and materials which it contemplates incorporating into the Work.

Samples of materials shall be submitted for approval when so directed by the Owner or its Engineer. Machinery, equipment and materials installed or used without such approval shall be at the risk of the subsequent rejection by the Owner or Engineer. The Engineer may require the Contractor to remove from the Work such employees as the Engineer deems incompetent, careless, insubordinate, or otherwise objectionable or whose continued employment on the Work is deemed by the Engineer to be contrary to the public interest.

- b. Changed Conditions. The Owner assumes that any information concerning the condition of the site set forth in drawings or the Specifications is essentially correct, but the Owner neither

warrants the completeness nor the accuracy of such information and relies upon the Contractor to verify the completeness and the accuracy of such information; provided, however, that if the Contractor encounters, or the Owner discovers, during the progress of the Work, subsurface or latent conditions at the site materially different from those shown on the drawings or indicated in the Specifications, or that unknown conditions of an unusual nature differ materially from those ordinarily encountered and generally recognized as being inherent in Work of the character provided for in the drawings and Specifications, the Engineer shall be notified before the existing conditions are disturbed. The Engineer shall thereupon investigate the conditions, and if he finds that they do so materially differ, the Contract shall be modified by the Owner to provide for any increase or decrease in cost, and difference in time resulting from such conditions, and an equitable adjustment in the pertinent contract terms shall be made in accordance with the provisions of the paragraphs of Article 13 hereof. Such modifications of this contract by the Owner shall be final, subject only to the provisions of Article 21.

- c. License and Permits. The Contractor shall, without additional expense to the Owner, obtain all required licenses and permits prior to the commencement of the Work. If additional licenses and permits are required during the course of the performance of the Work, contractor shall expeditiously obtain any such licenses and permits from the appropriate authorities.
- d. Responsibility of Contractor. The Contractor shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in performance of the Work, and shall be responsible for all materials delivered (including Owner-furnished material and equipment delivered to the Contractor unless otherwise specifically provided) and Work performed until completion and final acceptance. Upon full performance of this Contract, the Work shall be delivered complete and undamaged.
- e. Space at Site. The Contractor shall be allowed reasonable space at the site of the Work and given access thereto, and shall confine its operations to the space assigned. The Work shall be performed so as not to unduly interfere with the ordinary use of streets and public access and the Contractor shall cooperate with other contractors of the Owner and Owner's employees as may be required by the circumstances or directed by the Engineer. The Contractor shall not commit or permit any act which, will interfere with the performance of Work by any other contractor or Owner's employees whether at the site or not. If it is necessary to control traffic on public streets, the Contractor shall arrange at its own cost for personnel to control traffic in a safe manner.
- f. Protective Measures. The Contractor shall protect the Work from deterioration and damage during construction, and shall store and secure flammable material away from fire hazards. During cold weather the Contractor shall furnish all heat necessary for safe and proper performance of the Work.
- g. Safety Measure. The Contractor shall take all reasonable steps to prevent injury to persons or property in performance of this Contract, and the Contractor shall take such other further steps as may be required by the Engineer to promote safety and avoid accidents.
- h. Temporary Buildings. The Contractor shall erect at its own expense, and remove at the completion of the Work, such temporary storage sheds and offices used during the

performance of the Work. Prior to their construction, any such structures shall be subject to the approval by the Engineer.

- i. Notification of Utility Companies. The Contractor and any of its subcontractors shall comply with section 119-b of the Public Service Law of the State of New York, and 16 NYCRR Subpart 753-3, et. seq., and any other statutes, rules and regulations applicable thereto, prior to commencement of excavation or blasting in areas near utility lines.

The Contractor shall give written notice to Central Hudson Gas and Electric Corporation and Verizon, or any other utility company affected by the performance of the Work, before Work of any nature is commenced under this Contract, and shall give additional notification to the Owner of any proposed blasting at least 48 hours in advance.

ARTICLE 8 SPECIFICATIONS AND DRAWINGS

- a. Conflicts - Omissions – Errors in Description - Misinformation. The Contractor shall keep at the site of the Work a copy of all drawings and Specifications related to the Work, and the Engineer shall at all times have access thereto. If the Specifications contain information or requirements that have been inadvertently omitted from the drawings, the drawings shall be deemed to conform to the Specifications to reflect such information or requirements. Similarly, if the drawings contain information or requirements that are inadvertently omitted from the Specifications, the Specifications shall be deemed to conform to the drawings to reflect such information or requirements. If there are discrepancies between the drawings and Specifications that are not inadvertent, the Specifications shall control. Any omissions from the drawings or Specifications, or the erroneous description of details of Work that are manifestly necessary to carry out the intent of the drawings and Specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or erroneously described details of Work, but they shall be performed as if fully and correctly set forth and described in the drawings and Specifications.
- b. Review of Drawings and Dimensions. The Contractor shall review all drawings furnished to it immediately upon receipt of same and shall promptly notify the Engineer of any discrepancies, errors or irregularities. Figures marked on drawings shall be followed in preference to scale measurements. Large scale drawings shall generally govern over small “to-scale” drawings. The Contractor shall prepare all drawings and verify the figures before laying out the Work and shall be responsible for any errors which might have been avoided thereby. When measurements are affected by conditions already established, the Contractor shall take measurements notwithstanding any existing scale or figure dimensions contained in the drawings.
- c. Deviations. The Contractor shall not deviate from any of the drawings and the dimensions contained therein, regardless of whether the Contractor believes there has been an error, without the prior approval of the Engineer.
- d. Lines and Grades. The Engineer shall establish the initial lines and grades for the commencement of the Work, but the Contractor shall furnish and place all additional stakes, templates and bench marks necessary to mark and maintain points, lines and elevations. The Contractor shall be responsible to ensure that the completed Work complies with the lines and grades established by the Engineer.

- e. Interpretations and Instructions. All questions regarding the figures, drawings, plans and Specifications and the interpretation thereof, and the resolution of conflicts and inconsistencies therein, shall be determined by the Engineer, and such determination shall be final subject only to provisions of Article 21 hereof.

ARTICLE 9 PAYMENT AND RELEASE

- a. The Contractor shall receive partial payments as the Work progresses based upon estimates made by the Engineer. In making such estimates, materials delivered to the site, work performed at the Contractor's assembly plant and preparatory work performed by the Contractor may be taken into consideration. By making payments to the Contractor, the Owner does not waive any defects in the Work, nor shall the Contractor's responsibility for the Work, the workmanship and materials be diminished by such payments.
- b. Upon the recommendation of the Engineer, The Commissioner of Finance may withhold a sum not exceeding 5% of each payment hereunder for a period up to six (6) months from the date of the final estimate or upon completion of the Work to the satisfaction of the Owner.
- c. All material and workmanship for which partial payments have been made shall become the property of the Owner; nevertheless, this provision shall not be construed as relieving the Contractor from having sole responsibility for all materials and work upon which such payments have been made, or restoring any damaged or destroyed work, or waiving the Owner's right to require the fulfillment of the terms of this Contract.
- d. The obligation of the Owner to make any of the payments required under any of the provisions of this Contract shall be subject to (1) any unsettled claims against the Contractor for labor or material; (2) reasonable deductions for any defects in material or workmanship; and (3) any claims which the Owner may have against the Contractor arising under this Contract. Any overpayment to the Contractor shall, unless otherwise adjusted, be paid to the Owner upon demand.
- e. The Contractor shall execute and deliver at the time of, and as a condition precedent to final payment, a release in form and substance satisfactory to and containing such exceptions as may be found appropriate by the Engineer, discharging the Owner, its officers, agents and employees of and from liabilities, obligations, and claims arising under this Contract.

ARTICLE 10 ASSIGNMENT OR DELEGATION

The Contractor shall not assign any rights or interest under this Contract or in any other manner dispose of its interest herein, nor shall the Contractor delegate its duties and responsibilities under this Contract without the prior written consent of the Owner. An assignment of any portion of, or the entire Contract, shall not relieve the assignor of its obligations hereunder. All of the provisions shall be binding on and inure to the benefit of the respective successors and assignees to the same extent as if each such successor or assignee were named as a party to this Contract.

ARTICLE 11 INSPECTION AND TESTING

- a. All material and workmanship shall be subject to inspection, examination and testing at any and all times during manufacture or construction thereof and at any and all places where such manufacture or construction is carried out. The Owner shall have the right to reject defective material and workmanship or in its discretion, require its correction. Rejected workmanship shall be satisfactorily corrected, and rejected material shall be satisfactorily replaced with proper material without additional charge to the Owner, and the Contractor shall promptly segregate and remove the rejected material from the worksite. If the Contractor fails to immediately replace rejected material and correct any defective workmanship, the Owner may arrange to replace such material and correct such workmanship and charge the cost thereof to the Contractor, or may terminate the Contract as provided in Article 24 hereof.
- b. The Contractor shall make all necessary arrangements for inspections and testing that may be required by the Engineer, at no additional cost to the Owner, including but not limited to furnishing facilities, labor and materials to ensure that inspections and tests are conducted safely and without undue delay in the performance of the Work
- c. If in the discretion of the Owner or its Engineer, it is necessary or advisable to remove all or a portion of the Work completed by the Contractor in order to examine, test, or inspect the Work, prior to final acceptance, the Contractor shall promptly furnish all necessary facilities, labor and material to allow the Owner to conduct same. If such work is found to be defective or nonconforming in any material respect, due to fault of the Contractor or its subcontractors, the Contractor shall defray all of the expenses of such examination and satisfactory reconstruction and shall be responsible for additional costs associated with any resulting delay. If, however, such workmanship is found to meet the requirements of the Contract, the actual cost of labor, equipment and material necessarily involved in the examination of the Work shall be paid to the Contractor, and it shall, in addition, if completion of the Work has been delayed thereby, be granted a reasonable extension of time to perform any additional work required.

ARTICLE 12 TESTING FOUNDATIONS

The Owner shall have the right to test the bearing value of the material underlying the foundation of any structures to be built. Such testing shall be made at such times and places and in such a manner as may be directed by the Engineer. As far as practicable, if test piles are used they shall be located so that they can become part of the finished structure. The Contractor shall furnish the Engineer with ample opportunity to view test results and to make such records as the Owner may consider necessary. Upon written notice to the Owner, the Contractor may be compensated for conducting such tests in the same manner as set forth in Article 13 of this Contract to the extent the contract price does not include compensation therefor. Notice of the Contractor's intent to request compensation must be made in accordance with Article 13 hereof.

ARTICLE 13 CHANGES AND EXTRAS

- a. The Engineer may at any time, without notice to the sureties, make changes in the drawings or Specifications of the Contract to conform to the intended purpose of the Work. If such changes cause an increase or decrease in the cost of performing the Work under this Contract, or in the time required to complete the Work, the Contract shall be modified accordingly and an equitable adjustment for such changes shall be made by mutual agreement of the parties; provided however, that if the parties are unable to agree, the Engineer shall determine the equitable adjustment, if any, that shall be made to the contract terms, and his determination shall be final, subject only to Article 21 of this Contract.
- b. Nothing in this Article shall excuse the Contractor from diligently proceeding with the performance of the Work so changed.

ARTICLE 14 LIQUIDATED DAMAGES

- a. The parties acknowledge that time is of the essence and that the Owner will suffer a financial loss if the Work is not completed within the specified time in Article 3 of this Contract, or any agreed extensions thereof. The parties further acknowledge that it may be difficult or impossible to ascertain the amount of actual damages incurred if the Contractor fails to complete the Work within said time. Therefore, the Owner and Contractor agree that the liquidated damages as stated below are intended as compensatory in nature and not a penalty. The Contractor shall pay to the Owner as fixed, agreed and liquidated damages for each calendar day of delay Exceeding the completion date as set forth in Article 3 herein until the delayed work is completed or accepted, the amount of **Five Hundred Dollars (\$500)** per day unless stated otherwise herein. It is agreed, however, that the Contractor shall not be charged with liquidated or actual damages if any delays in the completion of the work are due to causes beyond its control, including, but not limited to, acts of God, or war; acts of the City or any State or political subdivision thereof (including, but not restricted to the operation of any governmental preferences, priorities, or allocations of material); acts of another contractor in the performance of a contract with the Owner; floods, earthquakes, or other catastrophes, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather. The determination of the Owner shall be final, subject to the provisions of Article 21 of this Contract.
- b. If Specifications for the Work do not contain a provision for liquidated damages, then, notwithstanding the provisions of this Article, no liquidated damages shall be assessed hereunder.

ARTICLE 15 DEFENSE OF ACTIONS

The Owner, its officers or employees or agents shall not in any manner be answerable or responsible for any injuries or damages or compensation required to be paid under any present or future law, to any person or persons whatever, whether employees of the Contractor or otherwise, or for damages to any property, whether belonging to the Owner or to others occurring during or resulting from the Work under this Contract. The Contractor shall take all necessary steps to prevent all such injuries, damages and compensation. The Contractor shall at all times indemnify and save the Owner, its officers employees and agents harmless against all claims, law suits, injuries, damages, compensation, awards and legal fees incurred in defending

such claims and law suits, arising from work performed under this Contract, other than claims for the Owner's own negligence.

ARTICLE 16 CERTIFICATES OF INSURANCE

The Contractor shall purchase and maintain in full force and effect insurance policies with the limits of insurance provided in the contract documents or the following insurance coverage's, whichever is greater. The insurance should be from an insurer that has an A.M. Best Rating of "A-" or better.

1. Commercial General Liability with limits not less than \$1,000,000 per occurrence, \$2,000,000 general aggregate, \$1,000,000 and \$2,000,000 products-completed operations aggregate. Such insurance shall cover liability arising from premises, operations, independent contractors, product-completed operations for one year following project completion, personal and advertising injury and liability assumed under an insured contract. There shall be no endorsement or modification of the Commercial GL form arising from pollution, explosion, collapse, underground property damage or work performed by subcontractors.
2. If required by owner, professional liability with a limit of \$2,000,000 per claim/occurrence and \$2,000,000 annual policy aggregate.
3. If required by owner, contractors pollution cleanup/remediation and pollution liability with a limit of \$2,000,000 per claim and \$2,000,000 annual policy aggregate
4. Business Automobile Liability with a limit of not less than \$1,000,000 each accident, including owned, non-owned, leased and hired vehicles.
5. Statutory Workers Compensation and employers liability coverage for all employees, including corporate officers and sole proprietors.
6. Umbrella/Excess Liability with a limit of not less than \$5,000,000 per occurrence/aggregate

City of Poughkeepsie is to be included as an additional insured on a primary, non-contributory basis (using CG 2010 07/04 and CG 2037 10/01 or its equivalent) for item

1. Items 1 and 6 will have no exclusions for New York State "labor law" claims and/or claims for injuries to subcontractor employees.

All policies required by this paragraph shall include a waiver of subrogation in favor of **City of Poughkeepsie**.

Except where prohibited by law, all policies and certificates of insurance shall expressly provide that **City of Poughkeepsie** must receive 30 days written notice in the event of material alteration, cancellation or nonrenewal of coverage, including subcontractors' insurance.

- b. All certificates of insurance shall contain a clause naming the Owner as loss payee on the policies and providing that any notices of cancellation of insurance be given to the Owner's no less than ten (10) days' notice.
- c. Renewal certificates covering the renewal of all policies expiring during the life of this Contract shall be filed with the Owner not less than thirty (30) days before the expiration of such policies.

All insurance companies issuing policies relating to this Contract must be licensed to do business in New York State and be approved by the Owner's Law Department.

ARTICLE 17 INDEMNIFICATION

In addition to all other obligations of indemnification specified herein, contractor agrees to release and be liable for and to defend, indemnify, and save harmless the City of Poughkeepsie, its board members, officers, agents, servants, workmen, employees, subsidizers and indemnities, U.S. Department of Transportation, New York State Department of Transportation, and all government funding agencies providing funds or services in connection with this project (hereinafter collectively referred to as "the City of Poughkeepsie"), from and against any and all loss, cost, damage, liability and expense, including consequential damages, counsel fees, whether or not arising out of any claim, suit or action at law, in equity, or otherwise, of any kind or nature whatsoever, including negligence, arising out of the performance of the work by reason of any accident, loss or damage of property, including the work site, property of the City of Poughkeepsie and contractor, or injury, including death, to any person or persons, including employees of the City of Poughkeepsie, contractor, subcontractors at any tier or any person working on contractor's behalf, caused by contractor, which may be sustained either during the term of the contract, or upon or after completion of the project (up to a period of three {3} years), whether brought directly by these persons or by anyone claiming under or through them including heirs, dependents and estates.

Contractor also agrees for itself and on behalf of its agents, servants, subcontractors, material men, and employees to defend, indemnify and hold harmless the City of Poughkeepsie from and against any and all claims of any kind or nature whatsoever regarding subcontractors and material men and agrees to assume the defense of the City of Poughkeepsie to any such suit at its cost and expense. The contractor further assumes the risk of loss and damage to materials, machinery and equipment to be incorporated in the work at all times prior to delivery to the project site or while in the possession or under the control of the contractor.

Contractor, for itself and its employees, board members, officers, agents, servants, workmen, contractors, subcontractors, licensees and invitees, or any other person working on contractor's behalf, hereby releases and agrees to be liable for and to defend, indemnify and save harmless the City of Poughkeepsie, except to the extent that the City of Poughkeepsie is negligent in whole or in part, for any claims made by an employee, board member, officer, agent, workman or servant of contractor's or any other person working on contractor's behalf, including claims for compensation or benefits payable to any extent by or for contractor under any workers' or similar compensation acts or other employee benefit acts. In the event of joint or concurrent negligence of the contractor and the City of Poughkeepsie, responsibility, if any, shall be apportioned comparatively in accordance with the laws of the State of New York. A contractor's obligations under this clause shall not be limited to the limits of coverage of insurance maintained or required to be maintained by contractor under any resultant agreement. This provision shall survive the termination of any resultant agreement.

A contractor's indemnity obligations under this section shall also specifically include, without limitations, all fines, penalties, damages, liabilities, costs, expenses (including, without limitations, reasonable attorney's fees), and punitive damages (if any) arising out of, or in connection with any:

1. Violation of or failure to comply with any law, statute, ordinance, rule, regulation, code or requirement of a public authority that bears upon the performance of the work by the contractor, a subcontractor, or any person or entity for whom either is responsible;
2. Means, methods, procedures, techniques, or sequences of execution or performance of the work; and
3. Failure to secure and pay for permits, fees, approvals, licenses and inspections as required under the contract documents, or any violation of any permit or other approval of a public authority applicable to the work, by the contractor, a subcontractor, or any person or entity for whom either is responsible.

In addition, contractor shall indemnify the City of Poughkeepsie for any fines and legal fees incurred because employees, agents, or workers supplied by contractor who are not authorized to work in the United States.

ARTICLE 18 CONTRACTOR'S SUBSIDIARIES AND RELATED ENTITIES

The terms of this Contract are binding upon any subsidiary or affiliated business of the Contractor, and each such entity shall be jointly and severally liable for the obligations of the Contractor as set forth herein.

ARTICLE 19 LIENS

The Contractor shall, with each request for payment, furnish satisfactory evidence that the claims of all persons who have done work or furnished materials for the Work covered under this Contract have been fully discharged or have been secured. The Contractor shall with each request for payment, provide the Owner with an affidavit of release of liens and an affidavit of payment of debts and claims.

The Owner may retain from any amount at any time due the Contractor such stated sums as shall be necessary to meet lawful claims which have not been fully discharged or otherwise satisfactorily secured; it being understood and agreed, however, that the Owner assumes no obligation toward such claimants, nor in any way undertakes to pay such claims from any funds due or that may become due the Contractor out of its own funds.

It is further agreed by and between the parties hereto that if, at any time before or within thirty (30) days after the entire Work covered by this Contract has been completed and accepted by the Owner, any person or persons claiming to have performed any labor or furnished material toward the performance or completion of this Contract shall have filed with the Owner any notice, as described in the Mechanic's Lien Law of the State of New York, the Owner is hereby authorized by the Contractor to retain from the monies then due or to become due under this Contract so much of said monies as shall be sufficient to pay off, satisfy, or discharge the amount in such

notice, together with the costs of any action or actions brought to enforce such claim or the lien created by the filing of such notice. The money so retained shall be held by the Owner until the lien created by the said law and the filing of said notice shall be discharged pursuant to the provisions of the aforesaid Mechanic's Lien Law, and the necessary discharge and/or satisfaction of the filing pursuant to Section 9-302 of the Uniform Commercial Code.

ARTICLE 20 MAINTENANCE OF SITE

The Contractor shall maintain the Work site in a neat and clean condition with no unsightly undesirable accumulation of debris or material. On or before the completion of the Work, the Contractor shall, without additional compensation, except as otherwise specifically directed or permitted in writing, demolish and remove all temporary buildings and structures built by it and shall remove from the premises all lumber, shoring, debris, surplus materials of every kind, plant, machinery, and other equipment installed by it; shall effectively remove and dispose of in a satisfactory manner all accumulations of organic refuse from any grounds occupied by it; and shall leave the property of adjacent landowners, which may have been affected by its operations, including streets and sidewalks, in the same condition as existed prior to commencement of the Work. If the Contractor does not fully comply with requests to clean up the site or adjacent properties after three (3) days' notice, the Engineer may order such work done at the expense of the Contractor.

ARTICLE 21 RATE OF PROGRESS

Within ten (10) days of the date of this Contract, the Contractor shall furnish the Engineer with its proposed schedule of progress which shall show the contemplated procedure and times of completion of all aspects of the Work. If at any time, in the opinion of the Engineer, the Work can not be completed within the time specified, the Engineer shall notify the Contractor who shall provide as soon as practicable, such additional workers, machinery, equipment and methods as are required to finish the Work in a timely manner. The failure of the Engineer to give such notice shall not relieve the Contractor of its obligations to complete the Work in accordance with the terms of this contract.

ARTICLE 22 DISPUTES

Except as otherwise provided in this Contract, any dispute arising under this Contract that cannot be resolved by agreement shall be decided by the Engineer, who shall reduce his decision to writing and mail, or otherwise furnish a copy thereof, to the Contractor. Pending final decision of any dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract. Upon receipt of the written decision, the Contractor shall abide by the Engineer's decision.

ARTICLE 23 PATENT INDEMNITY

- a. The Contractor shall, as part of its obligations hereunder, and without any additional compensation, indemnify and save harmless the Owner, its officers, employees and agents, from all damages or claims arising from the infringement or alleged infringement of any patent rights covering any material, appliance or device in or upon the Work, arising out of this Contract, or any part thereof, and shall, without cost or expense to the Owner, its

officers, employees and agents, defend any suit or suits which may be brought against the Owner by reason of such infringement or alleged infringement.

- b. The Contractor shall report to the Engineer promptly, and in reasonable written detail, each claim of patent infringement based on the performance of this Contract and asserted against it or any of its subcontractors if the Contractor has notice thereof.

ARTICLE 24 SANITATION

The Contractor shall make arrangements for, and maintain near the work site, adequate sanitary facilities of an approved type for the use of persons employed on the Work, and properly secluded from public observation. Such sanitary facilities shall be constructed and maintained by the Contractor in such a manner and at such points as shall be required or approved by the Engineer. These facilities shall be maintained and kept reasonably clean at all times. At the completion of the Work, the sanitation facilities shall be removed from the worksite, leaving the premises clean and free of nuisance.

ARTICLE 25 TERMINATION

If, in the judgment of the Engineer, the Contractor fails to perform the Work diligently and/or in a workmanlike manner, or if the Contractor should be adjudged bankrupt or if it should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, or if it should fail to make prompt payment to subcontractors for materials or labor, or persistently disregards laws, ordinances or the instructions of the Engineer, or otherwise is guilty of a substantial violation of any provision of the Contract, the Owner, upon certification from the Engineer that sufficient cause exists to justify such action may, without prejudice to any other right or remedy and after giving the Contractor and its surety, if any, five (5) days' written notice, terminate the employment of the Contractor and enter upon the premises and take possession of all materials and fixtures of every kind whatsoever thereon and employ any other person and persons to complete the Work and provide materials therefor. In the event of such discontinuance of the Contractor, the Contractor shall not be entitled to receive any further payment under this Contract until the Work shall be wholly and satisfactorily completed. If the unpaid balance of the Contract price is less than the expense of completing the Work, including compensation for additional architectural, inspection, managerial and administrative services, then the Contractor and/or its surety shall pay the difference to the Owner. In such case, the Owner shall be under no further obligation to the Contractor, but the liability of the Contractor for damages due to its breach of this Contract shall not be extinguished. The amount, if any, due to the Contractor shall be determined under the provisions of Article 9 hereunder.

ARTICLE 26 NON-DISCRIMINATION

During the term of this Contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, sex, color, national origin, disability or marital status and further agree to take affirmative action to ensure equal employment opportunities without such discrimination. No services to be rendered pursuant to, or in connection with this Contract may be refused to any person because of age, race, creed, sex, color, national origin, disability or marital status.

ARTICLE 27 WARRANTY

- a. Except as otherwise expressly provided in this Contract, the Contractor warrants and represents that all mechanical and electrical equipment are free from defects of design, materials and workmanship, and further warrants all materials and Work provided under this Contract against defects or failure for a period of one (1) year from the date of final payment. The Contractor further agrees to repair or replace any such defective material, equipment or workmanship to the satisfaction of the Engineer, and at no cost to the Owner within ten (10) days after receipt of written notice of any such defect.
- b. All warranties and guaranties of subcontractors, manufacturers or suppliers, express or implied, respecting any material or equipment used in or made a part of this Work (whether for equipment of the nature above specified or otherwise) shall be deemed obtained by the Contractor as the agent of the Owner, and all such warranties and guaranties shall inure to the benefit of the Owner as though they had been separately transferred or assigned to the Owner.
- c. The warranties and guaranties provided for in this Article shall not extend or apply to material or equipment furnished by the Owner except to the extent the Contractor may have performed additional work thereon.
- d. The remedies provided in this Article shall not be restrictive of, but shall be cumulative and in addition to, all other remedies of the Owner with respect to latent defects or fraud. Such remedies shall not limit any statutory or common law warranties but shall be in addition thereto.

ARTICLE 28 WAGES AND HOURS OF WORK

The Contractor warrants and represents that it, along with any of its subcontractors, shall be in full compliance with the provisions of the New York State Labor Law, Section 220 and all subdivisions thereof, from the date of commencement of the Work until the Work is completed and final payment received, including but not limited to the following:

No laborer, workman, chauffeur, or mechanic in the employ of the Contractor shall be permitted or required to work more than eight hours in any one day or more than five days in any one week, except in case of extraordinary emergencies, including fire, flood, or danger to life or property, or in case of national emergency when proclaimed by the President of the United States of America. No person shall be so employed more than eight hours in any day or more than five days in any week except in such emergency.

In the event of such proclamation of a national emergency by the President, application for dispensation from the provisions of Section 220 of the Labor Law of the State of New York must be made pursuant to the provisions of the War Emergency Act and such dispensation granted pursuant thereto before any laborer, workman or mechanic may be employed beyond the hours specified in Section 220 of the Labor Law of the State of New York.

The following forms a part of these Specifications in compliance with Article 8, Section 220, subdivision (3) of New York State Labor Law, which reads in relevant part as follows:

“It shall be the duty of the fiscal officer, as defined in this section, to ascertain and determine the schedule of wages to be paid Workers, laborers and mechanics on each such public work prior to the time of the advertisement for bids, and such schedule of wages shall be annexed to, and form a part of, the specifications for the work. Such fiscal officer shall file with the department having jurisdiction such schedule of wages to the time of the advertisement for bids on all public works proposed to be constructed. The term ‘contract,’ as used in this subdivision shall include reconstruction and repair of any such works.”

ARTICLE 29 WORKERS’ COMPENSATION

The Contractor agrees to obtain any and all insurance as required pursuant to the provisions of the Worker’s Compensation Law of the State of New York. The failure to provide such coverage shall render this Contract null and void

ARTICLE 30 HOUSING AND URBAN DEVELOPMENT CLAUSE

The following provisions shall apply to all Housing and Urban Development Section 3 contracts:

- a. ~~The Work to be performed under this Contract is subject to requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u, section 3. (“Section 3”). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low and very low income persons, particularly persons who are recipients of HUD assistance for housing.~~
- b. ~~The parties to this Contract agree to comply with HUD’s regulations in 24 CFR Part 135, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.~~
- c. ~~The Contractor agrees to send to each labor organization or representative of workers with which the Contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers’ representative of the Contractor’s commitments under Section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the persons(s) taking applications for each of the positions; and the anticipated date the Work shall begin.~~
- d. ~~The Contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulation in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the regulations in 24 CFR Part 135. The Contractor will not subcontract with any subcontractor where the contractor has notice or~~

~~knowledge that the subcontractor has been found in violation of regulations in 24 CFR Part 135.~~

- ~~e. The Contractor must certify that any vacant employment positions, including training positions, that are filled (1) after the Contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.~~
- ~~f. Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this Contract for default, and debarment or suspension from future HUD assisted contracts.~~
- ~~g. With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450[e]) also applies to the work performed under this Contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this Contract that are subject to the provisions of Section 3 and section 7(b) agree to comply with Section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).~~

ARTICLE 31 LIABILITY OF THE OWNER

Neither the Owner nor any official, employee, agent or representative thereof, shall be liable for or be held to pay any money to the Contractor except as herein provided; and the acceptance by the Contractor of the payments provided on the final estimate shall operate as, and shall be a release of said Owner, its officers, employees and agents, from all claims and liability to the Contractor relating to the Work, or for any act or neglect of the Owner of any person relating to or affecting the Work, except for claims to recover any retained money pursuant to Article 9(b) of this Contract.

ARTICLE 32 TERMINATION FOR REFUSAL TO TESTIFY

The Contractor agrees on his own behalf (if he is an individual) or on behalf of the partnership (if it be a partnership), or on behalf of its directors, officers, and employees (if it be a corporation), that upon the refusal of said person, firm, partnership, or corporation, when called before a Grand Jury to testify concerning any transaction in connection with the within Specifications or Contract, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning the within Specifications or Contract:

- a. Such person, and any firm, partnership or corporation of which he is a member, partner, director or officer, shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with the City of Poughkeepsie or any public department, agency or official thereof for goods, work or services, for a period of five years after such refusal, and

- b. Any and all contracts made by such person, firm, partnership or corporation with the City of Poughkeepsie or any public department, agency or official thereof, since July 1, 1959, by such person, and by any firm, partnership or corporation of which he is a member, partner, director, or officer may be canceled or terminated by the City of Poughkeepsie without incurring any penalty or damages on account of such cancellation or termination, but any monies owing by the City of Poughkeepsie for goods delivered or work done prior to the cancellation or termination shall be paid.

Contractor warrants that it is not disqualified from bidding on this Contract by reason of General Municipal Law Section 103-a.

ARTICLE 33 RETENTION OF RECORDS

The Contractor agrees to retain any and all records concerning the Work performed pursuant to this Contract. Bid records shall include, but shall not be limited to, employment records, purchase records, insurance records, schedule of hours worked, records of all payments, record of any claims made against Contractor, contracts and correspondence with subcontractors. Such records shall be maintained by the Contractor and made available on request by the Owner for a period of not less than six years from the completion of this Contract.

ARTICLE 34 ENTIRE AGREEMENT

This Contract represents the entire understanding between the parties and shall not be modified except by a signed agreement mutually entered into by the parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Contract.

THE CITY OF POUGHKEEPSIE

XXXXXXXXXXXXXXXXXXXX.

By: _____
Robert G. Rolison, Mayor

By: _____

STATE OF NEW YORK)

) ss:

COUNTY OF DUTCHESS)

On the day of , 20 , before me, the undersigned, a Notary Public in and for said state, personally appeared Robert G. Rolison, the Mayor of the city of Poughkeepsie, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s) or the person on behalf of which the individual(s) acted, executed the instrument.

Notary Public

STATE OF NEW YORK)

) ss:

COUNTY OF DUTCHESS)

On the day of , 20 , before me, the undersigned, a Notary Public in and for said state, personally appeared , personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s) or the person on behalf of which the individual(s) acted, executed the instrument.

Notary Public

Reviewed and Approved by Corporation Counsel: _____ Date: _____

GENERAL TERMS AND CONDITIONS

FEDERAL CONTRACT LANGUAGE

SCHEDULE A

**CITY OF POUGHKEEPSIE
POUGHKEEPSIE, NEW YORK**



RFB # COP-04-21-01

WPCP Secondary Clarifiers

ADDENDUM NO. 3

May 24, 2021

This addendum contains the following:

UPDATED DAVIS-BACON WAGE SCHEDULE

Please acknowledge receipt of this addendum by including this receipt with your bid package!

Receipt of Addendum# 3

Signed: _____

Company Name: _____

Dated: _____

"General Decision Number: NY20210007 05/21/2021

Superseded General Decision Number: NY20200007

State: New York

Construction Types: Building, Heavy and Highway

Counties: Dutchess, Orange, Sullivan and Ulster Counties in New York.

BUILDING CONSTRUCTION PROJECTS FOR ALL COUNTIES EXCEPT SULLIVAN (does not include single family homes and apartment up to and including 4 stories), HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021
1	03/12/2021
2	04/02/2021
3	04/16/2021
4	05/21/2021

ASBE0040-003 05/01/2020

SULLIVAN AND ULSTER COUNTIES

Rates	Fringes
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HAZARDOUS MATERIAL HANDLER

Duties limited to
preparation wetting;
stripping; removal;
scrapping; vacuuming;
bagging; and disposing of
all insulation materials
whether they contain

asbestos or not from mechanical systems.....	\$ 36.36	22.76
Insulator/asbestos worker (includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems).....	\$ 36.36	22.76

ASBE0091-002 06/01/2020

DUTCHESS AND ORANGE COUNTIES

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER Duties limited to preparation, wetting, stripping, removal scrapping, vacuuming, bagging and disposing of all insulation materials; whether they contain asbestos or not from mechanical systems.....	\$ 43.12	42.35
Insulator/asbestos worker (Includes application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems).....	\$ 43.12	42.35

BOIL0005-001 01/01/2017

	Rates	Fringes
BOILERMAKER.....	\$ 55.23	33%+24.12+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Thanksgiving Day, Memorial Day, Independence Day, Labor Day and Good Friday, Friday after Thanksgiving, Christmas Eve Day and New Year's Eve

BRNY0005-001 06/01/2019

	Rates	Fringes
BRICKLAYER (BUILDING CONSTRUCTION) DUTCHESS, ORANGE (Excluding the town of Tuxedo) and ULSTER COUNTIES Bricklayers, Cement Masons, Plasterers, Stone Masons.....	\$ 42.09	34.50
ORANGE COUNTY (Town of Tuxedo) Bricklayers, Cement Masons, Plasterers, Stone Masons.....	\$ 42.59	34.50
BRICKLAYER (HEAVY		

CONSTRUCTION)

DUTCHESS, ORANGE

(Excluding the town of
Tuxedo) and ULSTER COUNTIES

Bricklayers, Cement

Masons, Plasterers, Stone

Masons.....\$ 41.31 33.94

ORANGE COUNTY (Town of
Tuxedo)

Bricklayers, Cement

Masons, Plasterers, Stone

Masons.....\$ 42.59 34.50

BRICKLAYER (HIGHWAY
CONSTRUCTION)

DUTCHESS, ORANGE

(Excluding the town of
Tuxedo), SULLIVAN and

ULSTER COUNTIES

Bricklayers, Cement

Masons, Plasterers, Stone

Masons.....\$ 42.59 34.50

CARP0279-005 07/01/2019

Rates Fringes

Carpenters:

BUILDING CONSTRUCTION

Carpenters, Millwrights,

Pile Drivers.....\$ 38.09 29.08

HEAVY & HIGHWAY

CONSTRUCTION

Carpenters, Millwrights,

Pile Drivers.....\$ 38.09 29.08

CARP0740-002 07/01/2020

DUTCHESS AND ORANGE COUNTIES

Rates Fringes

MILLWRIGHT.....\$ 44.25 39.91

CARP1556-005 07/01/2020

DUTCHESS AND ORANGE COUNTIES

Rates Fringes

Diver Tender.....\$ 50.34 51.79

Diver.....\$ 70.80 51.79

Dock Builder & Piledrivermen.....\$ 55.93 51.79

ELEC0363-001 04/01/2021

Rates Fringes

ELECTRICIAN

DUTCHESS (Remaining
Townships), ULSTER AND

SULLIVAN COUNTIES.....\$ 43.00 3%+33.67+a

ORANGE and DUTCHESS

(Townships of Fishkill,
East Fishkill and Beacon)

COUNTIES.....\$ 47.00 3%+33.67+a

FOOTNOTE:

a. Paid Holidays: New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving, Christmas Day

ELEC1249-002 05/04/2020

	Rates	Fringes
ELECTRICIAN (LINE CONSTRUCTION-LIGHTING AND TRAFFIC SIGNAL INCLUDING ANY AND ALL FIBER OPTIC CABLE NECESSARY FOR THE TRAFFIC SIGNAL SYSTEMS, AND TRAFFIC MONITORING SYSTEMS, ROAD WEATHER INFORMATION SYSTEMS)		
Flagman.....	\$ 28.49	6.75%+33.90
Groundman (Digging Machine Operator).....	\$ 42.73	6.75%+33.90
Groundman (Truck Driver)....	\$ 37.98	6.75%+33.90
Groundman Truck Driver (Tractor Trailer Unit).....	\$ 40.36	6.75%+33.90
Lineman and Technician.....	\$ 47.48	6.75%+33.90
Mechanic.....	\$ 37.98	6.75%+33.90

PAID HOLIDAYS:

a. Memorial Day, New Year's Day, President's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

ELEC1249-004 05/04/2020

	Rates	Fringes
ELECTRICIAN (Line Construction) Overhead and underground distribution and maintenance work and all overhead and underground transmission line work including any and all fiber optic ground wire, fiber optic shield wire or any other like product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities :		
Flagman.....	\$ 32.10	6.75%+33.90
Groundman digging machine operator.....	\$ 48.15	6.75%+33.90
Groundman truck driver (tractor trailer unit).....	\$ 45.48	6.75%+33.90
Groundman Truck driver.....	\$ 42.80	6.75%+33.90

Lineman and Technician.....	\$ 53.50	6.75%+33.90
Mechanic.....	\$ 42.80	6.75%+33.90
Substation:		
Cable Splicer.....	\$ 58.85	6.75%+33.90
Flagman.....	\$ 32.10	6.75%+33.90
Ground man truck driver....	\$ 42.80	6.75%+33.90
Groundman digging machine operator.....	\$ 48.15	6.75%+33.90
Groundman truck driver (tractor trailer unit).....	\$ 45.48	6.75%+33.90
Lineman & Technician.....	\$ 53.50	6.75%+33.90
Mechanic.....	\$ 42.80	6.75%+33.90
Switching structures; railroad catenary installation and maintenance, third rail type underground fluid or gas filled transmission conduit and cable installations (including any and all fiber optic ground product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities), pipetype cable installation and maintenance jobs or projects, and maintenance bonding of rails; Pipetype cable installation		
Cable Splicer.....	\$ 60.30	6.75%+33.90
Flagman.....	\$ 32.89	6.75%+33.90
Groundman Digging Machine Operator.....	\$ 49.34	6.75%+33.90
Groundman Truck Driver (tractor-trailer unit).....	\$ 46.60	6.75%+33.90
Groundman Truck Driver.....	\$ 43.86	6.75%+33.90
Lineman & Technician.....	\$ 54.82	6.75%+33.90
Mechanic.....	\$ 43.86	6.75%+33.90

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, Good Friday, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

ELEC1249-005 05/06/2019

SULLIVAN COUNTY

Rates Fringes

ELECTRICIAN (LIGHTING AND
TRAFFIC SIGNAL LINEMAN
INCLUDING ANY AND ALL FIBER
OPTIC CABLE NECESSARY FOR THE
TRAFFIC SIGNAL SYSTEM,
TRAFFIC MONITORING SYSTEMS
AND ROAD WEATHER INFORMATION

SYSTEMS.)

Flagman.....	\$ 27.00	6.75%+24.15
Groundman (Digging Machine		
Operator).....	\$ 40.50	6.75%+24.15
Groundman (Truck Driver)....	\$ 36.00	6.75%+24.15
Groundman Truck Driver		
(tractor trailer unit).....	\$ 36.00	6.75%+24.15
Lineman & Technician.....	\$ 45.00	6.75%+24.15
Mechanic.....	\$ 36.00	6.75%+24.15

FOOTNOTE:

a. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, plus President's Day, Good Friday, Decoration Day, Election Day for the President of the United States and Election Day for the Governor of the State of New York, provided the employee works the day before or the day after the holiday.

ELEC1249-008 01/03/2021

	Rates	Fringes
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ELECTRICIAN (Line
Construction)

TELEPHONE, CATV		
FIBEROPTICS CABLE AND		
EQUIPMENT		
Cable splicer.....	\$ 34.78	3%+5.14
Groundman.....	\$ 17.50	3%+5.14
Installer Repairman-		
Teledata		
Lineman/Technician-		
Equipment Operator.....	\$ 33.01	3%+5.14
Tree Trimmer.....	\$ 27.36	3%+9.98

a. New Year's Day, President's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving, Christmas Day.

ELEV0138-001 01/01/2020

	Rates	Fringes
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ELEVATOR MECHANIC.....	\$ 60.49	34.765+a+b
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FOOTNOTE:

a. Vacation: 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.
b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

ENGI0106-004 07/01/2018

NORTHERN PART OF DUTCHESS (To The Northern Boundary line of the City of Poughkeepsie)

	Rates	Fringes
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Power Equipment Operator

HEAVY & HIGHWAY

GROUP 1.....	\$ 43.47	26.05+a
GROUP 2.....	\$ 42.56	26.05+a
GROUP 3.....	\$ 39.99	26.05+a
GROUP 4.....	\$ 47.47	26.05+a
GROUP 5.....	\$ 46.47	26.05+a
GROUP 6.....	\$ 45.47	26.05+a
GROUP 7.....	\$ 45.08	26.05+a

POWER EQUIPMENT OPERATORS HEAVY & HIGHWAY CLASSIFICATIONS

GROUP 1: Asphalt Curb Machine, Self Propelled, Slipform, Automated Concrete Spreader (CMI Type), Automatic Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Back Filling Machine, Belt Placer (CMI Type), Blacktop Plant (Automated), Boom truck , Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Curb Machine, Self Propelled, Slipform, Concrete Pump, Crane, Cherry Picker, Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type), Pile Driver, Truck Crane, Directional Drilling Machine, Dredge, Dual Drum Paver, Excavator (All Purpose Hydraulically Operated) (Gradall or Similar), Front End Loader (4 cu. yd. and Over), Head Tower (Sauerman or Equal), Hoist (Two or Three Drum), Holland Loader, Maintenance Engineer, Mine Hoist, Mucking Machine or Mole Pavement Breaker(SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P.) Quad 9, Quarry Master (or equivalent), Scraper, Fireman, Form Tamper, Grout Pump, Guniting Machine, Hammers (Hydraulic self-propelled), Hydra-Spiker, ride-on, Hydraulic Pump (jacking system), Hydro-Blaster (Water), Mulching Machine, Oiler, Parapet Concrete or Pavement, Shovel, Side Boom, Slip Form Paver, Tractor Drawn, BeltType Loader, Truck or Trailer Mounted Log , Chipper (Self Feeder), Tug Operator (Manned Rented Equipment Excluded), Tunnel Shovel

GROUP 2: Asphalt Paver, Backhoe (Tractor Mounted, Rubber Tired), Bituminous Recycler Machine, Bituminous Spreader and Mixer, Blacktop Plant (NonAutomated), Blast or Rotary Drill (Truck or Tractor Mounted), Boring Machine, Cage Hoist, Central Mix Plant (NonAutomated) and All Concrete Batching Plants, Cherry Picker (5 tons capacity and under), Concrete Paver (Over 16S), Crawler Drill, Self-contained, Crusher, Diesel Power Unit, Drill Rigs, Tractor Mounted, Front End Loader (Under 4 cu. yd.), Greaseman/Lubrication Engineer, HiPressure Boiler (15 lbs. and over), Hoist (One Drum), Hydro-Axe, Kolman Plant Loader and Similar Type Loaders, L.C.M. Work Boat Operator, Locomotive Mixer (for stabilized base selfpropelled), Monorail Machine, Plant Engineer, Profiler (105 H.P. and under), Grinder, Post Hole Digger and Post Driver, Power Broom (towed), Power Heaterman, Power Sweeper, Revinius Widener, Roller (Grade and Fill), Scarifier, ride-on, Shell Winder, Skid steer loader (Bobcat or similar), Span-Saw, ride-on, Steam Cleaner, Pug Mill, Pump Crete Ready Mix Concrete Plant Refrigeration Equipment (for soil stabilization)Road Widener, Roller (all above subgrade), Sea Mule, Self-contained Ride-on Rock Drill, Excluding Air-Track Type Drill, Skidder, Tractor with Dozer and/or Pusher, Trencher. Tugger Hoist, Vermeer saw (ride on, any size or type), Winch, Winch Cat

GROUP 3: A Frame Winch Hoist on Truck , Articulated Heavy

Hauler, Aggregate Plant, Asphalt or Concrete Grooving, Machine (ride on), Ballast Regulator, Ride-on Boiler (used in conjunction with production), Bituminous Heater, self-propelled, Boat (powered), Cement and Bin Operator, Compressors, Dust Collectors, Fork Lift, Generators, Pumps, Welding Machines, Light Plants, Heaters (hands-off equipment), Concrete Pavement Spreader and Finisher, Concrete Paver or Mixer (16S and under), Concrete Saw (self-propelled), Conveyor, Deck Hand, Directional Drill Machine Locator, Drill, (Core), Drill, (Well,) Farm Tractor with accessories, Fine Grade Machine, Tamper, ride-on, Tie Extractor, ride-on, Tie Handler, ride-on, Tie Insertter, ride-on, Tie Spacer, ride-on, Tire Repair, Track Liner, ride-on, Tractor, Tractor (with towed accessories), Vibratory Compactor, Vibro Tamp, Well Point

GROUP 4: Tower Cranes

GROUP 5: Cranes 50 tons and over

GROUP 6: Cranes 49 tons and below

GROUP 7: Master Mechanic

FOOTNOTES:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day

 ENGI0106-008 07/01/2018

NORTHERN PART OF DUTCHESS (TO THE NORTHERN BOUNDARY LINE OF THE CITY OF POUGHKEEPSIE) BUILDING CONSTRUCTION

	Rates	Fringes
Power equipment operators:		
GROUP A(1).....	\$ 43.79	25.70+a
1.....	\$ 45.04	25.70+a
2.....	\$ 46.04	25.70+a
GROUP A.....	\$ 43.30	25.70+a
GROUP B.....	\$ 42.28	25.70+a
GROUP C.....	\$ 39.38	25.70+a

Hazardous work - Anytime Operating Engineers are involved with level C or above, \$2.50 per hour over regular rate.

FOOTNOTE:

a. Paid Holiday: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP A(1): Crane, hydraulic cranes, tower crane, locomotive crane, piledriver, cableway, derricks, whirllies, dragline, boom truck (over 5 tons)

GROUP A(1): Crane Premiums

- 1 over 150' :add \$1.00
- 2 over 200': add \$2.00

GROUP A: Shovel, All excavator (except tractor mounted rubber tired John Deere 510 or smaller), gradalls, power road grader, all CMI equipment, front-end rubber tire loader, tractor-mounted drill (quarry master), mucking machine, concrete central mix plant, concrete pump, Belcrete system, automated asphalt concrete plant and tractor road paver, boom truck (5 tons and under).

GROUP B: Backhoe, (tractor mounted rubber tired equivalent to John Deere 510 or less), bulldozer, pushcat, tractor, traxcavator, scraper, LeTourneau grader, form fine grader, road roller, blacktop roller, blacktop spreader, power brooms, sweepers, trenching machine, Barber Green loader, side booms, hydrohammer, concrete spreader, concrete finishing machine, one drum hoist, power hosting (single drum), hoist - two drum or more, three drum engine, power hoisting (two drum and over), two drum and swinging engine, three drum swinging engine, hod hoist, A-L frame winches, cord and well drillers (one drum), post hole digger, model CHB Vibro-Tamp or similar machine, batch bin and plant operator, dinkey locomotive, skid steer loader, track excavator 5/8 cu. yd. or smaller.

GROUP C: Fork lift, high lift, lull, Oiler, fireman and heavy- duty greaser, boilers, and steam generators, pump, vibrator, motor mixer, air compressor, dust collector, welding machine, well point, mechanical heater, generators, temporary light plants, concrete pumps, electric submersible pump 4'" and over, murphy type diesel generator, conveyor, elevators, concrete mixer and belcrete power pack (belcrete system), seeding, and mulching machines, pumps.

 ENGI0137-001 03/06/2017

DUTCHESS COUNTY (POUGHKEEPSIE AND SOUTH THEREOF)

BUILDING CONSTRUCTION

	Rates	Fringes
Power Equipment Operator		
GROUP 1A.....	\$ 53.95	28.52+a
GROUP 1B.....	\$ 49.68	28.52+a
GROUP 2A.....	\$ 52.03	28.52+a
GROUP 3A.....	\$ 50.11	28.52+a
GROUP 3B.....	\$ 47.67	28.52+a
GROUP 4A.....	\$ 49.60	28.52+a
GROUP 4B.....	\$ 41.85	28.52+a
GROUP 5.....	\$ 45.17	28.52+a
GROUP 5A.....	\$ 56.63	28.52+a
GROUP 5B.....	\$ 42.83	28.52+a
GROUP 6.....	\$ 44.92	28.52+a

NOTES: Hazmat: 20% above regular rate
 Pumping operation Premium .50

Crane Operators (100-149 ft) 2.00

Crane Operators (149 ft +) 3.00

Loader Operators (over 5 cu y) .50
 Shovel Operators (over 4 cu yd)1.00

FOOTNOTE:

a. New Years Day, Memorial Day, Independence Day, Labor Day Thanksgiving Day, Christmas Day, plus Lincoln's Birthday, Washington's Birthday, Good Friday, Columbus Day, November Election Day, Veteran's Day.

POWER EQUIPMENT OPERATORS CLASSIFICATION

GROUP 1-A: Carrier- trailer horse; concret-portable hoist; crane & hoist engineer-steel (concrete, material, super structure sub- structure); derrick (stone-steel); elevator & cage; hoist- single/double or triple drum; hoist-portable mobile unit; hoist engineer-concert (crane-derrick-mine hoist); hoist engineer- material; overhead crane; power house plant; telephies (cableway); whirly; maintenance engineer; Lull hiliift or similar; hydraulic crane 25 ton and over; cherry picker 25 tons and over; backhoe Oliver 88; fordson; dynahoe; dual purpose and similar machines; Barber Green Loader-euclid loader or similar type; conway or similar mucking macking machines; dragline; gradall; shovel; backhoe etc. (crawler or truck); front end loaders; hydraulic boom; jersey spreader; lift slab console; letournequ or tounapull (scrapers over 20 yds struck); mucking machines; pavement breaker (air ram); paver (concrete); road boring machine; road mix machines; ross carrier and similar machines; post hole digger; shovel (tunnels); side boom; spreader (asphalt); scoopmobile-tractor-shovel over 1 1/2 yds. trenching machines vermeer concrete saw trencher and similar; tractor type demolition equipment; winch truck (a frame); hydraulic crane over 10 ton up to 25 ton); cherry picker over 10 ton up to 25 ton)

GROUP 1-B: Compressor (steel erection); pulse meter and push button buzz box; elevator; mechanic (outside) all types; welder; scrapers 20 yds struck and under; machine pulling sheep's foot roller; vibratory rollers; roller 4 tons and over.

GROUP 2-A: Compactor self-propelled; grader; bulldoze D7 and similar tractors with a draw bar horsepower of 100 or over; bulldozer D6 and under; welder; scraper 20 yds struck and under; machine pulling sheep's foot roller; vibratory rollers.

GROUP 3-A: Asphalt plant; boiler (high pressure); concrete mixing plants; concrete pump; firemen; forklift; forklift (electric); joy drill or similar tractor drilling machine; loader - 1 1/2 yards and under; locomotive (all sizes); mixer concrete - 21E and over; portable asphalt plant; portable batch plant; portable crusher; quarry master; stone crusher; well drilling machine and well point system; cherry picker under 10 tons; hydraulic crane under 10 tons; concert buffy; one yard an up ride on dumper (benford or similar).

GROUP 3-B: Compressor over 125 cu. feet; conveyor belt machine regardless of size; lighting unit (portable & generator); welding machine (steel erection and excavation); and compressor plant; stud machine; ladder hoist.

GROUP 4-A: Air tractor drill; batch plant; bending machine; concrete breaker; concrete spreader; curb cutter machine; farm tractor (all types); finishing machine-concrete;

hepavac clean air machine (all similar types: removal of asbestos etc.); material hopper-sand-stone-cement; mixer-concrete-under 21E; mulching grass spreader; pump-gypsum, etc., pump-plaster-grout -fireproofing; shop mechanic (not employed on job site); roller under 4 ton; spreading and fine grading machine; steel cutting machine; syphon pump-air-steam; tar joint machine; turbo jet burner or similar equipment; vibrator (1 to 5); fine grading machine; roof hoist (tugger hoist); television cameras-water- sewer-gas-etc.

GROUP 4-B: Compressor to 125 feet; dust; dust collector; heater all types; pump; pump station (water and sewer); steam jenny; sweeper; chipper; mulcher.

GROUP 5: Motorized roller (walk behind)

GROUP 5-A: Master Mechanic

GROUP 5-B: Utility Man

GROUP 6: Warehouse Man

 ENGI0137-007 03/06/2017

Poughkeepsie and South thereof

	Rates	Fringes
Power Equipment Operator (HEAVY & HIGHWAY)		
GROUP 1.....	\$ 58.54	28.15+a
GROUP 1-A.....	\$ 51.68	28.15+a
GROUP 1-B.....	\$ 54.42	28.15+a
GROUP 2-A.....	\$ 49.52	28.15+a
GROUP 2-B.....	\$ 51.05	28.15+a
GROUP 3.....	\$ 48.67	28.15+a
GROUP 4-A.....	\$ 44.29	28.15+a
GROUP 4-B.....	\$ 38.13	28.15+a
GROUP 5.....	\$ 54.69	28.15+a
GROUP 5-A-1.....	\$ 54.69	28.15+a
GROUP 5-A-2.....	\$ 66.22	28.15+a
GROUP 5-A-3.....	\$ 63.97	28.15+a
GROUP 5-A-4.....	\$ 60.03	28.15+a
GROUP 5-A-5.....	\$ 50.65	28.15+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Boom Truck; Cherry Picker; Clamshell; Crane, (Crawler, Truck); Dragline; Rough Terrain Crane

GROUP 1-A: Auger; Auto Grader; Dynahoe and Dual purpose and similar machines; Boat Captain; Boring Machine (all types); Bull Dozer-all sizes; Central Mix Plant Operator; Chipper-all types; Close circuit t.v.; Compactor with Blade; Concrete Portable Hoist; C.M.I. or similar; Conway or similar mucking machines; Gradall, Shovel Backhoe, etc. Grader; Derrick, (Stone- Steel; Elevator & cage, materials or passengers; Front end loaders over 1 1/2 yds.; Hoist Single, Double, Triple Drum, Hoist Portable Mobile Unit; Hoist Engineer-Concrete (Crane-Derrick-Mine Hoist); Hoist Engineer-Material, Hydraulic Boom; Letourneau or Tournapull (Scrapers over 20 yds. struck); Log Skidder; Movable Concrete Barrier Transfer & Transport Vehicle; mucking

machines; overhead crane; paver (concrete); pulsemeter; push button (buzz box) elevator; road mix machines; Robot Hammer (brock or similar), Ross carrier and similar machines; shovels (tunnels); side boom; Slip Form Machine; spreader (asphalt); scoopmobile-tractor-shovel over 1 1/2 yards; trenching machines; telephies- vermeer concrete saw trencher and/or similar; tractor-type demolition equipment, Whirly

GROUP 1-B: Road Paver, Asphalt

GROUP 2-A: Ballast Regulators; Compactor self-propelled; Cow Tracks; Fusion Machine; Rail Anchor Machines; Roller 4 ton and over; Scrapers - 20 yards struck; Switch Tampers; Vibratory roller, etc.

GROUP 2-B: Mechanic (outside) all types

GROUP 3-A: Air tractor drill; asphalt plant; batch plant; boiler (high pressure; concrete breaker; concrete pump concrete spreader; curb cutter machine; farm tractor (all types); finishing machine (concrete); fine grading machine; fireman; forklift; forklift (electric); joy drill or similar tractor drilling machine; loader - 1 1/2 yards and under; locomotive (all sizes), maintenance engineer; machine pulling sheeps foot roller; material hopper; mixer concrete - 21-E and over; mulching grass spreader; portable asphalt plant, portable batch plant, portable crusher; powerhouse plant; quarry master; roller under 4 ton; spreading and fine grading machine; steel cutting machine; stone crusher; sweeper; turbojet burner or similar; well drilling machine ; winch truck ""A"" frame. John Henry Drill or similar.

GROUP 4-A: Service men (fuel or grease truck).

GROUP 4-B: Oiler; Compressor - compressor plant; paint compressor-steel erection; conveyor belt machine; lighting unit (portable & generator); oiler; pumps - pump station-water-sewer- gypsum- plaster, etc.; roller-motorized (walk-behind); welding machine (steel erection excavation); well point system; bending machine; dust collector; mixer - concrete under 21-E; heater all types; steam jenny; syphon pump-air-steam; tar joint machine; vibrator (1 to 5); Compressor Truck Mounted (2-6)

GROUP 5: Oiler

GROUP 5-A-1: Master Mechanic

GROUP 5-A-2: Engineer - all tower cranes, all climbing cranes and all cranes of 100 ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged (except for pile rigs).

GROUP 5-A-3: Engineer-- Pile Driver

GROUP 5-A-4: Hoist Engineer- Steel -Sub Structure

GROUP 5-A-5: Jersey-spreader, pavement breaker (air ram); Post Hole Digger

NOTES:

Loader Operator (over 5 cu yds)	.50
Shoval Operators (over 4 cu yd)	1.00
Hazmat premium over regular rate	20%

CRANES:

100 ft- 149 ft: receive \$2.00 more than Group 1 rate
149 ft and over receive \$3.00 more than Group 1 rate

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day; Lincoln's Birthday; Good Friday; Memorial Day; Independence Day; Labor Day; Veterans Day; Columbus Day; November Election Day; Thanksgiving Day; and Christmas Day

ENGI0825-007 01/01/2018

ORANGE, ULSTER AND SULLIVAN COUNTIES

	Rates	Fringes
Power Equipment Operator		
BUILDING, HEAVY & HIGHWAY		
GROUP 1.....	\$ 50.57	30.30
GROUP 2.....	\$ 48.98	30.30
GROUP 3.....	\$ 47.07	30.30
GROUP 4.....	\$ 45.44	30.30
GROUP 5.....	\$ 43.73	30.30
GROUP 6.....	\$ 52.39	30.30

NOTES:

Hazmat Premium 20%
Hydrographic Premium .50

POWER EQUIPMENT OPERATORS CLASSIFICATIONS (BLDG, HEAVY & HWY)

GROUP 1: Autograde-Pavement-Profiler (CMI and Similar Type);
utograde-Pavement-Profiler (CMI and Similar
Types);Autograde Slipform Paver (CMI and Similar Types);
Backhoe; Central Power Plants (all types); Concrete Paving
Machine (s-240 and Similar Types); Cranes (All Types,
Including Overhead and Straddle Traveling Type); Cranes,
Gantry; Derricks (Land, Floating or Chicago Boom Type);
Drillmaster/Quartmaster (Down the Hole Drill) Rotary Drill;
Self-Propelled, Hydraulic Drill, Self-Powered Drill
Draglines, Elevator Graders, Front End Loaders (5 yds. and
over), Gradalls, Grader: Rago, Helicopters (Copilot),
Helicopters, (Communication Engineer), Locomotive (large),
Mucking Machines, Pavement and Concrete Breaker
(Superhammer, Hoe Ram, Brokk 250 and Similar Types), Pile
Driver (length of boom including length of leads shall
determine premium rate applicable), Roadway Surface Grinder
Scoop (loader and shovel), Shovels, Tree Chooper with
Boom, Trench Machines, Tunnel Boring Machines.

GROUP 2: ""A"" Frame; Backhoe (Combination); Boom Attachment on
Loaders (Rate based on size of bucket) not applicable to
Pipehook) Boring and Drilling Machines, Brush Chopper,
Shredder and Tree Shredder Tree Shearer, Cableways,
Carry-alls, Concrete Pump, Concrete Pumping System,
Pumpcrete and Similar Types, Conveyors, 125 ft and over;
Drill Doctor (duties include dust collector, maintenance),
Front End Loader (22 yds. but less than 2 yds.), Graders
(Finish); Groove Cutting Machine (ride on type), Heater
Planer; Hoists: (all type hoists, Shall Also Include Steam,
Gas, Diesel, Electric, Air Hydraulic, Single and Double
Drum, Concrete, Brick Shaft, Caisson, Snorkel Roof, and or

any other similar type Hoisting Machines, Portable or Stationary, Except Chicago Boom Type). Long Boom Rate to Be Applied if Hoist is ""outside material lower hoist""; Hydraulic Cranes-10tons and Under; Hydro-Axe; Hydro-Blaster; Jacket (Screw Air Hydraulic Power Operated Unit or Console Type: Not Hand Jack or Pile Load Test Type), Log Skidder; Pans, Pavers (all) Concrete; Plate and Frame Filter Press; Pumpcrete Machines; Squeeze Crete and Concrete Pumping (regardless of size); Scrapers; Sidebooms; Straddle Carrier, Ross and Similar Types; Vacuum Truck; Whip Hammer; Winch Trucks (Hoisting).

GROUP 3: Asphalt Curbing Machine, Asphalt Plant Engineer, Asphalt Spreader; Autograde Tube Finisher & Texturing Machine (CMI and Similar types) Autograde Curecrete Machine (CMI and Similar Types); Bar Bending Machines (power), Batchers, Batching Plant and Crusher on-site; Belt Conveyor Systems; Boom Type Skimmer Machines; Bridge Deck Finisher; Bulldozers (all); Car Dumpers (A:road); Chief of Party; Compressor and Blower Type Units (used) Independently or Mounted On Dual Purpose Trucks, On Job Site or In Conduction with Job Site, In Loading and Unloading of Concrete, Cement, Fly Ash, Instantcrete, or Similar Type Materials); Compressor 92 or 3 in Battery); Concrete Finishing Machines; Concrete Saws and Cutters (ride on type); Concrete Spreaders, Hetzel, Rexomatic and Similar types; Concrete Vibrators; Conveyors, Under 125 ft), Crushing Machines, Ditching Machine, Small (ditchwitch, Vermeer or Similar type); Dope Dots (mechanical with or without pump), dumpsters; Elevator; Fireman; Forklifts (economobile, lull, and similar types of equipment); Front End Loaders (1 yd. and over but less than 2 yds.); Generators (2 or 3 in Battery/ within 100 ft); Giraffe Grinders, Graders and Motor Patrols; Grout Pump; Gunnite Machines (excluding nozzle); Hammer Vibratory (in conduction with generators); Hoists (Roof, Tuggeraerial Platfrom Hoist and House Cars), Hoppers, Hoppers Doors (power operated); Hydro-Blaster (where required); Ladders (Motorized); Laddervator; Locomotive, Dinky type; Maintenance, Utility Man; Mechanics; Mixers (Excepting Paving Mixers); Motor Patrols and Graders; Pavement Breakers, Small, Self-Propelled ride on type (also maintains compressor or hydraulic unit); Pavement Breaker, Truck Mounted; Pipe Bending Machine (power); Pitch Pump; Plaster Pump (regardless of size); Post Hole Digger (post pounder and auger); Rod Bending Machines (power); Roller, Black Top; Scales, (power); Seaman Pulverizing Mixer; Shoulder Widener; Silos; Skimmer Machines (Boom Type); Steel Cutting Machine, Services and Maintains; Tamrock Drill; Tractors; Tug Captain; Vibrating Plants (used in conduction with unloading); welder and Repair Machines. Concrete cleaning/decontamination machine operator; Directional boring machine; Heavy equipment robotics operator; Master environmental maintenance operator; Ultra high pressure waterjet cutting tool system operator; maintenance operator; Vacuum blasting machine operator

GROUP 4: Brooms and Sweepers; Chippers; Compressors (single); Concrete Spreaders (small type); Conveyor Loaders (not including Elevator Graders); Engines, Large Diesel (1620 h.p.) and Staging Pump; Farm Tractors; Fertilizing Equipment (Operator and Maintenance of); Fine Grade Machine (small type); Form Line Graders (small type); Front End Loader (under 1 yd); Generator (single); Grease, Gas, Fuel and Oil Supply Trucks; Heaters (Nelson or Other Type

Including Propane, Natural Gas or Flowtype Units); Lights, Portable Generating Light Plants; Mixers, Concrete Small; Mulching Equipment (Operation and Maintenance of); Pumps (2 of Less Than 4 Inch Suction); Pumps 94 Inch Suction and Over Including Submersible Pumps); Pumps (Diesel Engine and Hydraulic); Immaterial of Power; Road Finishing Machines (Small Type); Rollers, Grade, Full Or Stone Base; Seeding Equipment (Operation and maintenance of); Sprinkler and Water Pump Trucks (Used on job Site or in conduction with Job Site); Steam Jennies and Boilers, Irrespective of Use; Stone Spreader; Tamping Machines, Vibrating Ride On; Temporary Heating Plant (nelson or Other Type, Including Propane, Natural Gas or Flow Type Units); Water and Sprinkler Trucks (Used On Job Site In Conduction with Job Site); Welding Machines-Within 100 ft (Gas, and /or Electric Converters of any type, single, tow or three in a battery). welding system, multiple (rectifier transformer type) well point systems (including installation by bull gang and maintenance of); Off Road back dumps.

GROUP 5: Oiler

GROUP 6: Helicopter Pilot

a. PAID HOLIDAYS: New Years Day, Washington's Birthday Memorial Day, July 4th, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day, provided the employee works one day during the calendar week in which the holiday occurs.

 ENGI0825-008 01/01/2018

ORANGE, ULSTER AND SULLIVAN COUNTIES

	Rates	Fringes
Power equipment operators:		
BUILDING CONSTRUCTION		
STEEL ERECTION		
GROUP 1.....	\$ 59.09	30.30
GROUP 2.....	\$ 57.43	30.30
GROUP 3.....	\$ 50.14	30.30
GROUP 4.....	\$ 47.48	30.30
GROUP 5.....	\$ 45.95	30.30
GROUP 6.....	\$ 44.19	30.30
GROUP 7.....	\$ 53.70	30.30
BUILDING CONSTRUCTION TANK		
ERECTION		
GROUP 1.....	\$ 58.81	30.30
GROUP 2.....	\$ 57.22	30.30
GROUP 3.....	\$ 53.70	30.30
GROUP 4.....	\$ 50.13	30.30
GROUP 5.....	\$ 44.92	30.30
OILOSTATIC MAINLINES AND		
TRANSPORTATION PIPE LINES		
GROUP 1.....	\$ 51.20	30.30
GROUP 2.....	\$ 49.55	30.30
GROUP 3.....	\$ 47.41	30.30
GROUP 4.....	\$ 45.91	30.30
GROUP 5.....	\$ 44.19	30.30
GROUP 6.....	\$ 53.13	30.30

NOTES:

Hydrographic Premium	50
Hazmat Premium	20%
Tunnel Premium	.75

STEEL ERECTION CLASSIFICATIONS

GROUP 1: Cranes (All Cranes, Land or Floating with Booms Including Jib 140 ft and over, Above Ground); Derricks, Land, Floating or Chicago Boom Type with Booms including Jib 140 ft and over above ground).

GROUP 2: Cranes (All Cranes, Land or Floating with Booms Including Jib Less Than 140 ft Above Ground); Derricks, Land, Floating or Chicago Boom Type with Booms Including Jib Less Than 140 ft above Ground).

GROUP 3: ""A"" Frame, Cherry Pickers 10 tons and under, Hoists Shall Also Include Steam, Gas, Desel, Electric, Air Hydraulic, Single and Double Drum Concrete, Brick Shaft Caisson, or Any Other Similar Type Hoisting Machines, Portable or Stationary, Except Chicago Boom Type; Jacks: Screw Air Hydraulic Power Operated unit or Console Type (not hand Jack or Pile Load Test Type); Side Booms.

GROUP 4: Aerial Platform used as Hoist; Compressor: 2 or 3 in Battery; Elevators or House Cars; Conveyors and Tugger Hosits; Chief of Party; Firemanp; Forklift; Generators (2 or 3); Maintenance (Utility Man); Rod Bending Machine (power); Welding Machines (Gas or Electric, 2 or 3 in Battery, Including Diesels); Captain: Power Boats: Tug Master: Power Boats.

GROUP 5: Compressor, Single; Welding Machine, Single, Gas, Diesel, and Electric Converters of any Type: Welding System Multiple (Rectifier Transformer Type); Generator, Single.

GROUP 6: Oiler

GROUP 7: Helicopter Pilot .

FOOTNOTE: a. PAID HOLIDAYS: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day, provided the employee works one day in the calendar week during which the holiday occurs.

For BUILDING CONSTRUCTION TANK ERECTION CLASSIFICATIONS

NOTES: Tunnel Premium	.75
Hazmat Premium	20%
Hydrographic Premium	.50

TANK ERECTION CLASSIFICATIONS

GROUP 1: Operating Engineers on all Cranes, Derricks, ets with Booms Including Jib 140 ft or More Above Ground.

GROUP 2: Operating Engineer on all Equipment, Including Cranes, Derricks, ets with Booms Including Jib, Less Than 140 ft above the ground.

GROUP 3: Helicopter Pilot Engineer.

GROUP 4: Air Compressors, Welding Machines and Generators are Covered and are Defined as Cover: Gas, Diesel, or Electric Driven Equipment and Sources of Power from a Permanent Plant: ie: Staem, Comgressed Air, Hydraulic or Other Power, For The Operating of any Machine or Automatic Tools, Used In The Erection, Alteration, Repair and Dismantling of Tanks and Any and All ""Dual Purpose"" Trucks Used On The Construction Job Site, or in the Loading and Unloading of Materials, at the Construction Job Sited or in Conjunction with the Job Site.

GROUP 5: Oiler

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day provided the Employee works one day in the calendar week during which the holiday occurs

For OILOSTATIC MAINLINES AND TRANSPORTATION PIPE LINE CLASSIFICATIONS

NOTES:

Hydrographic Premium	.50
Hazmat Premium	20%
Tunnel Premium	.75

OILSTATIC MAINLINES AND TRANSPORTATION PIPE LINES CLASSIFICATIONS

GROUP 1: Backhoe; Cranes (all types); Draglines, Front End Loaders (5yds. and over), Gradalls, Helicopters (co-pilot), Helicopters (Communication Engineer); Scooper (Loader and Shovel) Koehring; Trench Machines.

GROUP 2: ""A"" Frame; Backhoe (Combination Hoe Loader); Boring and Drilling Machines; Ditching Machines, Small, Ditchwitch, Vermeer or Similar type; Forklifts; Front End Loaders 92 yds. and over but less than 5 yds.); Graders, Finish (fine); Hydraulic Cranes 10 tons and under (over 10 tons) Cranes Rate Applies); Side Booms: Winch Trucks (Hoisting).

GROUP 3: Backfiller; Brooms and Sweepers; Bulldozers; Compressor (2 or 3 in battery); Chief of Party; Front End Loaders (under 2 yds); Generators; Giraffe Grinders; Graders and Motor Patrols; Machnic; Pipe Bending Machine (power);Tractors; Water and Sprinkler Trucks used on Job Site or in Conduction with Job Site); Welder and Repair Mechanic; Captain (power boats); Tug Master (power boats).

GROUP 4: Compressor (single); Dope Pots (Mechanical with or without Pump); Dust Collectors; Pumps (4 inch suction and over); Pumps (2 of less than 4 inche suction); Pumps, Diesel Engine and Hydraulic (immaterial of power); Welding Machines, Gas or Electric Converters of any type- 2 or 3 in Battery Mulptle Welders; Well Point Systems (including installation and Maintenance); Fram Tractors.

GROUP 5: Oiler, grease, gas, fuel and oil supply trucks; Tire repair and maintenance

GROUP 6: Helicopter Pilot

FOOTNOTE:

a. Paid Holidays: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day and Christmas Day provided the Employee works one day in calendar week during which the holidays occurs.

IRON0417-001 07/01/2020

	Rates	Fringes
IRONWORKER.....	\$ 40.48	46.45+a

a) Paid Holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Day after Thanksgiving (unpaid), Christmas Day.

* LAB0017-002 06/01/2019

	Rates	Fringes
LABORER		
DUTCHESS COUNTY (Asbestos, lead, toxic and hazardous waste abatement and any other environmental related work): (BUILDING CONSTRUCTION)		
GROUP 1.....	\$ 35.95	27.15
GROUP 2.....	\$ 37.75	27.15
DUTCHESS COUNTY (Asbestos, lead, toxic and hazardous waste abatement and any other environmental related work): (HEAVY & HIGHWAY:)		
GROUP 2.....	\$ 37.90	27.15+a
GROUP 3.....	\$ 42.15	27.15+a
ORANGE AND ULSTER COUNTIES (BUILDING CONSTRUCTION:)		
GROUP 1.....	\$ 35.95	27.15
GROUP 2.....	\$ 37.75	27.15
GROUP 3.....	\$ 40.50	27.15
ORANGE, ULSTER, AND SULLIVAN COUNTIES (HEAVY & HIGHWAY)		
GROUP 1.....	\$ 33.15	27.15+a
GROUP 2.....	\$ 37.90	27.15+a
GROUP 3.....	\$ 42.15	27.15+a
GROUP 4.....	\$ 46.75	27.15+a
TUNNEL, SHAFT & CAISSON WORK		
GROUP 1.....	\$ 48.05	29.50+a

LABORERS BUILDING CLASSIFICATIONS

GROUP 1: Custodial work, flag person, portable generator tender, portable pump tender, pitman and dumpman, firewatch, temporary heat tender, temporary light tender,

traffic control, tool room tender; Artificial turf, air chipping hammer acoustic pump and mixer, carpenter tender, concrete, concrete curb and sidewalk form setter, concrete form stripping, concrete sealing, concrete curing, concrete finisher, concrete vibrator, compressor, clean up after trades, dismantling demolition, excavation, fireproofing, foundation and building piping, pump and mixer, gunite, general clean up, grade checker, grading and backfilling, hoists, hod carrier, landscaping, mason tender, multi building trades tender, jackhammer, pavement breaker, poured gypsum roof work, power tampers, power walk behind roller, pressure blasting, power mixer, scaffolding, snow removal, signal person, sandblasting, styrofoam and similar installation, radio control equipment including but not limited to radio control tampers and rollers, radio control excavator, all erecting and dismantling of scaffold for masonry regardless of height, walking and riding power buggies, temporary weather protection, wrecking, waterproofing, stone and tile tenders, radio controlled hammers and breakers, unloading of trucks, air track, assembling and placing gabion baskets, asphalt, blaster, bob cat type machine for demo and clean up, chain link fence, chain saw, chipping hammer, concrete conveyor belt, saw, core drill, corrugated pipe, construction specialist, cleaning machine, concrete form setter, conduit layer, cutting torch, discharge pipe, drill chuck tender, duct bank layer, explosive handler, hydraulic splitter, granite or stone curbing, handler, joy and jib drill, Ingersoll Rand heavy duty crawler master type HCMZ drill machines or equivalent, laser level, nonmetallic pipe layer, metallic pipe layer, LeRoi hydraulic drill or similar, mega mixer, power fork lift, prestressed and precast concrete, power brush cutter, pumpcrete machine, retaining walls, rip rap, retention and toxic and hazardous waste liners, setting of block, setting of block, setting of brick, setting of stone, sound barriers, transit under laborers jurisdiction, tow behind concrete or grout pump, traffic and pedestrian stripping, surface planner, manufactured curb, walk behind surface planner, wagon drill, welding; * asbestos abatement work, lead abatement work, toxic and hazardous waste related work; when protective equipment and clothing are not required.

GROUP 2: Forklift for masonry purposes

GROUP 3: Asbestos Abatement work, toxic and hazardous abatement, lead abatement work, environmental work.

BUILDING CLASSIFICATIONS

GROUP 1: Asbestos abatement work, lead abatement work, toxic and hazardous waste related work; when protective equipment and clothing are not required.

GROUP 2: Asbestos abatement work, toxic and hazardous abatement, lead abatement work, environmental work.

LABORERS HEAVY AND HIGHWAY CLASSIFICATIONS

GROUP 1: Flagperson, gateperson

GROUP 2: General laborers, chuck tender, handling and distributing drinking water, distributing all tools and supplies of laborers, nipper, powder carrier, magazine tender, warehouse laborers, concrete man, vibrator man,

mason tender, mortar man, spraying, brushing and covering of concrete for curing and preservative purposes, traffic striping, scaffold builder, concrete curb and sidewalk from setter; permanent traffic striping and reflective devices, placing and maintenance of all flares, cones, lights, signs, barricades, traffic patterns, and all temporary reflective type materials for traffic control, custodial work, traffic directors, temporary heat or light tenders, tool room, dewatering pump men, pitman, dumpmen, snow removal and firewatch, asphalt man, joint setter, signal person, pipelayer, pipelining and relining, wellpoints, conduit and duct layer, wire puller rip rap and dry stone layer, steel rod carrier, core drill, rock splitter, Hilti gun air or electric, jackhammer, bush hammer, pavement breaker, chipping hammer, wagon drill, air track, jib rig, joy drill, gunite and sand blasting, coal passer and other machine operators, power tool operator, sprayer and nozzle man on mulching and seeding machine, all guard rail and fence, all seeding and sod laying, all landscape work, grade checker, all bridge work, walk behind self-propelled power saw, grinder, groover or similar type machine, walk behind tamper and roller of all types, salvage, stripping, wrecking and dismantling laborer (including barman, cutting torch and burner man), sheeting and shoring coming under laborers

jurisdiction, bit grinder, operator of form pin puller and drivers, sandblasting, joint and jet sealer, filling and wiring baskets for gabion walls, permanent sign man, median barrier,

sta-wall or similar type product, chain saw operator, railroad track laborer, waterproofer, pre-stressed and pre-cast concrete brick, block and stone pavers, power tools used to perform work usually done by laborers, power buggy and pumpcrete operator, fireproof, plaster and acoustic pump, asbestos, toxic, bio-remediation, phyto-remediation, lead or hazardous materials abatement when protective clothing and equipment is not required, power brush cutter, retention liners, artificial turf, retaining walls, walk behind surface planer, welding related to laborers work, remote controlled equipment normally operated by laborers, all technician work including but not limited to stitching, seaming, heat welding, fireproof sprayer, mortar mixer, concrete finisher, form setter for concrete curbs and flatwork. Gunite nozzle man, stone cutters, granite stone layer, manhole, catch basin or inlet installing, laser men. Ground man on milling machine.

GROUP 3: Ingersoll Rand heavy duty crawler master type HCMZ any drill using 4" or larger bit, asbestos, toxic, bio-remediation, phyto-remediation, lead or hazardous material abatement when protective clothing and equipment is required, all working foremen including grade, pipe, concrete, clearing, blacktop, drill, paving and blaster etc., Hydraulic drill or similar, forklift for masonry only, Blaster and asphalt screedman.

GROUP 4: Asbestos, toxic, lead or hazardous material abatement foreman.

HEAVY & HIGHWAY CLASSIFICATIONS

GROUP 1: Asbestos, toxic, bio-remediation, phyto-remediation, lead or hazardous material abatement; when protective equipment and clothing are not required.

GROUP 2: Asbestos toxic, bio-remediation, phyto-remediation, lead or hazardous material abatement when protective clothing and equipment is required.

FOOTNOTE:

PAID HOLIDAYS: New Years Day, Presidents's Day, Memorial Day, Independence Day, Labor Day, Election Day, Veterans Day, Thanksgiving Day, Christmas Day

TUNNEL, SHAFT & CASSION CLASSIFICATIONS

GROUP 1: Laborer, Pit and Dumpman, Chuck Tender, Brakeman and Powder; Miner and all mavnine men, Safety Miner, all shaft work, casson work, drilling, blow pipe, all air tools, tugger scaling, nipper gunniting srom pot to nozzle, bit grinder, singal man (top and bottom), shift steward, concrete man, shield driven tunnel, mixed face and soft ground liner plate tunnel in free air.

LAB00235-003 05/01/2016

DUTCHESS COUNTY

	Rates	Fringes
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Laborers:

BUILDING CONSTRUCTION

GROUP 1.....	\$ 33.30	26.25
GROUP 2.....	\$ 33.30	26.25
GROUP 3.....	\$ 33.30	26.25

LABORERS CLASSIFICATIONS (BUILDING)

GROUP 1: Mason tenders, carpenter tenders, laborer stripping and cleaning forms, laborer grading and digging ditches, sweepers, cleaners.

GROUP 2: Hod carriers, plasterers' tenders, scaffold builders (padlock and self-supporting scaffold 14 ft. or under all runways, mortar mixers) machine and hand, concrete mixers by machine under 21e, vibrators, form setters, asphalt rakers, handling reinforcement rods, drillers, jackhammer, operator, signalman, gunniting, motorbugs, water pump 2"" or under barco machine, wreckers, paving breakers, power saw operators, other machine operators.

GROUP 3: Blasters, Laser beam operator.

LAB00235-005 05/01/2018

DUTCHESS COUNTY

	Rates	Fringes
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Laborers:

HEAVY & HIGHWAY

GROUP 1.....	\$ 24.40	29.75+a
GROUP 2.....	\$ 28.16	29.75+a
GROUP 3.....	\$ 29.16	29.75+a

LABORERS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Flagperson, placing and maintenance of all flares, cones, light, signs, barricades, traffic control, custodial work, traffic directors, temporary heat or light tenders, tool rooms.

GROUP 2: General Laborers, Dumpman, Pitman, Concrete Man, Signal Man, Pipelayer, Rip Rap, Dry Stone Layer, Jackhammer, Powderman, Highscalers, Power Buggy Operator, Steel Rod Carrier, Vibratory Operator, Other Machine Operator, Wrecking, Vibrator Operator-Compactor, Guniting and Sand Blasting, Water Pump 2" or under, Nipper, Chucker, Asphalt Workers.

GROUP 3: Asphalt Raker, Asphalt Screener, Drillers (all), Laser Beam Operator, Form Setter/Aligners, Blasters.

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Lincoln's Birthday, Good Friday, Washington's Birthday, November Election Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Thanksgiving Day and Christmas Day and Veteran's Day.

PAIN0009-004 05/01/2020

DUTCHESS, ORANGE, SULLIVAN and ULSTER COUNTIES

	Rates	Fringes
GLAZIER.....	\$ 46.55	44.77

PAIN0155-003 05/01/2018

	Rates	Fringes
Painters:		
Drywall Finishers.....	\$ 32.99	22.76
Lead Abatement Work.....	\$ 32.99	22.76
Painter/Paperhanger.....	\$ 32.99	22.76
Spray Rate.....	\$ 33.99	22.76

PAIN0806-008 10/01/2020

DUTCHESS, ORANGE, SULLIVAN AND ULSTER COUNTIES

	Rates	Fringes
PAINTER		
Structural steel and Bridge.	\$ 51.50	49.63

PLUM0021-005 05/01/2018

ZONE 2

DUTCHESS COUNTY AND THE REMAINDER OF ULSTER COUNTY

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 50.84	34.52

PLUM0373-002 05/01/2019

ORANGE COUNTY Towns of Lakeville, Four Corners, Sterling

Forest, Tuxedo Park, Southfields, Arden, Newburgh Junction, Greenwood Lake, Monroe, Harriman, Woodbury Falls, Woodbury, Woodbury Station, Central Valley, and the Palisades Interstate Park and Bear Mountain Park

	Rates	Fringes
Plumber; Steamfitter.....	\$ 46.92	39.72
REFRIGERATION MECHANIC.....	\$ 23.04	11.88

PLUM0373-003 05/01/2019

SULLIVAN COUNTY (Townships of Lumberland, Forestburgh, Highland, Tusten, Mamakating, Fallsburgh, Thompson, Bethel, Cohecton, Delaware, Freemont, Callicoon, Liberty, Monticello, Neversink and Rockland); ORANGE COUNTY (Remaining Townships) and ULSTER COUNTY (Towns of Shawangurk, Wawarsing, Plattekill, Marlboro and Ellenville up to Napanoch Prison)

	Rates	Fringes
Plumber; Steamfitter.....	\$ 46.92	39.72

ROOF0008-002 07/01/2019

	Rates	Fringes
ROOFER.....	\$ 43.50	33.87

* SFNY0669-002 04/01/2021

	Rates	Fringes
SPRINKLER FITTER.....	\$ 47.19	28.09

SHEE0038-001 07/01/2020

	Rates	Fringes
Sheet metal worker.....	\$ 46.92	42.55

TEAM0445-001 05/01/2019

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 33.25	35.55+a
GROUP 1A.....	\$ 34.39	35.55+a
GROUP 2.....	\$ 32.69	35.55+a
GROUP 3.....	\$ 32.47	35.55+a
GROUP 4.....	\$ 32.36	35.55+a
GROUP 5.....	\$ 32.24	35.55+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Labor Day, President's Day, Presidential Election Day, Veterans Day, Decoration Day, Independence Day, Thanksgiving Day and Christmas Day provided the employee works two days in any calendar week during which the holidays occurs.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Drivers on Letourneau tractors, double barrel euclids, Athey wagons and similar equipment (except when hooked to scrapers), I-beam and pole trailers, drivers of road oil distributors, tire trucks and tractors and trailers with 5 axles and over, Articulated Back Dumps and Articulated Water Trucks.

GROUP 1A: Drivers on detachable Gooseneck Low bed Trailers rated over 35 tons.

GROUP 2: Drivers on all equipment 25 yards and over, up to and including 30 yard bodies and cable dump trailers and powder and dynamite trucks.

GROUP 3: Drivers on all equipment up to and including 24 yard bodies, mixer trucks, dump crete trucks and similar types of equipment, fuel trucks, batch trucks and all other tractor trailers.

GROUP 4: Drivers on tri axles, ten-wheelers, grease trucks and tillermen.

GROUP 5: Drivers on pick-up trucks used for materials & parts, drivers on escort man over-the-road and drivers on straight trucks.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular

rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

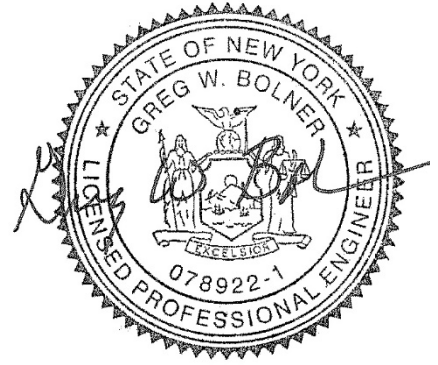
Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

CITY OF POUGHKEEPSIE POUGHKEEPSIE, NEW YORK



RFB-COP-04-21-01

WPCP Secondary Clarifier Improvements

Hon. Robert G. Rolison, Mayor

Marc Nelson, City Administrator

Council Member at Large

Sarah Salem

Council Members

Prepared By:

Christopher D. Petsas
Evan Menist
Lorraine F. Johnson
Sarah Brannen

Yvonne Flowers
Natasha Cherry
Randall A. Johnson II
Matthew McNamara

City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, New York 12601

TO BE ADVERTISED: April 30, 2021 FOR ONE DAY ONLY

CITY OF POUGHKEEPSIE POUGHKEEPSIE, NEW YORK



RFB-COP-04-21-01

WPCP Secondary Clarifier Improvements

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Prepared By:

City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, New York 12601

TO BE ADVERTISED: April 30, 2021 FOR ONE DAY ONLY

Public Bid Opening Announcement

Due to the COVID-19 Pandemic and in line with the directives issued by the offices of the NYS Governor and the City of Poughkeepsie regarding public safety, we have decided to limit public access to our office building.

Until further notice, we will conduct our Public Bid Openings for all of our Request for Bids (RFB) via our conference call system.

Interested parties can participate in the bid opening by registering

**for Opening of RFB-COP-04-21-01 WPCP Secondary Clarifier Improvements
on May 26, 2021 2:30 PM EDT at:**

<https://attendee.gotowebinar.com/register/4753127608847439117>

After registering, you will receive a confirmation email containing information about joining the webinar.

CITY OF POUGHKEEPSIE, NEW YORK
ADVERTISEMENT AND NOTICE TO BIDDERS

Beginning Immediately, Sealed bids are sought and invited by the City of Poughkeepsie ("The City") for **WPCP Secondary Clarifiers**, as set forth in drawings and specifications prepared by City of Poughkeepsie's Engineering Consultant, Clark Patterson Lee.

Bids will be received by the Board of Contract and Supply, c/o Purchasing Agent, 62 Civic Center Plaza, Poughkeepsie, NY 12601 **until 2:30 p.m. on Wednesday, May 26, 2021** after which time they will be publicly opened and read aloud via video conference. Bids may be hand delivered at any time prior to the bid opening. Late bids will not be accepted.

All mailed bids will be sealed and **distinctly marked** "**Proposal for RFB-COP-04-21-01**"

This project consists of the improvements of process equipment at the Water Pollution Control Plant. All questions must be submitted in writing via fax at 845-451-4101, email: Greg Bolner, Engineer: gbolner@cityofpoughkeepsie.com, or mail to 62 Civic Center Plaza, Poughkeepsie, NY 12601 by close of business May 19, 2021.

A pre-bid meeting will be conducted on site at 173 Kittridge Street, Poughkeepsie NY 12601 on Wednesday, **May 12, 2021 at 10:00 A.M. EDT**

All mailed proposals will be sealed and distinctly marked "Proposal for **RFB-COP-04-21-01 WPCP Secondary Clarifier Improvements**". The City of Poughkeepsie officially distributes bidding documents from the Purchasing Office, the City of Poughkeepsie website, www.cityofpoughkeepsie.com or through the Hudson Valley Municipal Purchasing Group's Regional Bid Notification System. Copies of bidding documents obtained from any other source are not considered official copies. Only those vendors who obtain bidding documents from the Purchasing Office, the City of Poughkeepsie website, or the Regional Bid Notification System will be sent addendum information, if such information is issued. If you have obtained this document from a source other than the City of Poughkeepsie Purchasing Office, or the HVMPG Regional Bid Notification System it is recommended that you obtain an official copy. You may obtain an official copy by registering on the HVMPG Regional Bid Notification System at www.bidnetdirect.com/new-york or www.cityofpoughkeepsie.com

Specifications and Contract are subject to provisions of Chapter 605, Laws of the State of New York of 1959, Section 103-A of the General Municipal Law.

This project is being funded in part by the EFC – Environmental Facilities Corporation. All work under this contract must comply with the requirements of this funding source, and may contain special monthly reporting procedures.

There is 23% goal for MWBE participation.

Each bidder must deposit with his/her bid, security in the amount of not less than five percent (5%) of the base bid in the form of a certified check made payable to the City of Poughkeepsie or a bid bond subject to the conditions of this proposal. Performance and Labor bonds are required upon award.

APPRENTICESHIP PROGRAM:

The City of Poughkeepsie requires that any contractor or subcontractor have, prior to entering into a construction contract with the City of Poughkeepsie with a value in excess of \$100,000.00, apprenticeship agreements appropriate for the type and scope of work to be performed, which have been registered with the NYS Commissioner of Labor in accordance with Article 23 of the Labor Law. Satisfactory evidence of registration with the New York State Commissioner of Labor by the deadline to submit its bid package for the construction contract on which it is bidding

STATEMENT OF NON-COLLUSION:

Bidders on the Contracts are required to execute a non-collusion bidding certificate pursuant to Section 103d of the General Municipal Law of the State of New York.

Attention of bidders is particularly called to the mandatory Compliance with the Davis-Bacon Act and other Federal Labor Standards Provisions: Title VI and other applicable provisions of the Civil Rights Act of 1964; Executive Order 11246; Section 3 of the Housing and Urban Development Act of 1968; Section 109 of the Housing and Community Development Act of 1974; and Executive Order 11625 (Utilization of Minority Business Enterprise). Bidders are also required to comply with the provision of Section 291-299 of the Executive Law of the State of New York.

The City of Poughkeepsie hereby notifies all Bidders that it will affirmatively insure that in regard to any contract entered into pursuant to this advertisement, minority and women business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, gender, color, or national origin in consideration for an award.

OWNERS RIGHTS RESERVED:

The City of Poughkeepsie reserves the right to waive any informality or to reject any or all proposals and may re-advertise for new proposals, if the best interest of the City will be served.

NEW YORK STATE OSHA 10-HOUR CONSTRUCTION SAFETY AND HEALTH COURSE S1537- A:

This provision, effective July 18, 2008, is an addition to the existing prevailing wage rate law, Labor Law § 220, section 220-h. It requires that on all public work projects of at least \$250,000.00, all laborers, and workers and mechanics working on the site, be certified as having successfully completed the OSHA 10-hour construction safety and health course. It further requires that the advertised bids and contracts for every public work contract of at least \$250,000.00 contain a provision of this requirement. Rules and regulations will be promulgated and posted on the NYSDOL website www.labor.state.ny.us when finalized.

DEPARTMENT OF FINANCE
CITY OF POUGHKEEPSIE

Brian Martinez, PhD
Commissioner of Finance
Dated: April 30, 2021

INSTRUCTIONS AND INFORMATION TO BIDDERS

BIDDERS RESPONSIBILITY

- Read all documents contained in the bid specifications. Should a bidder find any discrepancy, ambiguity, or omission from the drawings or specifications or both, or should it be in doubt as to their meaning, it must promptly notify the City of Poughkeepsie which will, if it determines it to be necessary, send a written addendum for clarification purposes to all bidders. Only written modifications issued as addenda will affect changes in the bidding and contract documents. Failure of any bidder to clarify ambiguities prior to Bid Opening constitutes a waiver of its right to raise any such ambiguity after Bid Opening.
- Bidders are responsible for submitting their bids to the appropriate location at or prior to the time indicated in the specifications. **No bids will be accepted after the designated time or date indicated in the bid specifications.** It is suggested that registered mail be used to submit bids. Delay in mail delivery is not an exception to the receipt/consideration of a bid.

BIDS DUE - TIME & PLACE

Bids will be received by the Board of Contract and Supply, c/o Purchasing Agent, 62 Civic Center Plaza, Poughkeepsie, NY 12601 **until 2:30 p.m. on Wednesday, May 26, 2021** after which time they will be publicly opened and read aloud Via video conference, with the contract being awarded as soon as practicable thereafter. LATE Bids will not be accepted.

All bids shall be submitted on the appropriate Bid Forms attached hereto and all the attached certificates must be completed and signed in compliance with the provisions of Section 103-d of the NYS General Municipal Law

Bidders shall indicate, on the outside of their sealed bid, the following information:

1. Title and Number of the Bid
2. Date and Time of Bid Opening

Failure to do so may result in rejection of the bid as being unresponsive.

The following forms are necessary to be submitted as a bid, as well as any additional forms requested in the detailed specifications:

1. **CS-1 - Bid proposal form/price page(s).** (except some bids, such as for the Department of Public Works or Engineering Department, where a separate form may be required). Such exceptions will be noted in the work specification.
2. **CS-2 – Non-Collusion Affidavit**, completed, signed and dated.
3. **Bid Proposal Form**
4. **Iran Divestment Act Document**, completed, notarized, signed and dated.
5. **Bid bond of 5% must be submitted with bid proposal, Performance and Labor bonds required upon award.**

6. **EFC documents, signed and dated.**
 - a) **MWBE Waiver Request form – If applicable**
 - b) **MWBE Utilization/Staffing Plan**
 - c) **Lobbying Certification.**
 - d) **American Steel Certification-If applicable.**
 - e) **Debarment & Suspension Certification.**
7. **Two copies of bid proposal. One original, one copy.**

Bidders must submit **one original and one copy** of their bids in the same envelope, unless otherwise stated. The original must be clearly marked. All bids must be filled out in ink, or must be typewritten. Bids submitted in pencil will be rejected as unresponsive. Bids which have been corrected by white out or cross out, and have not been initialed and/or dated will be rejected as unresponsive.

BID PACKAGE, PLANS & SPECIFICATIONS

The City of Poughkeepsie officially distributes bidding documents from the Purchasing Office at 62 Civic Center Plaza, Poughkeepsie, NY 12601 during normal business hours from 8:30 a.m. to 4:30 p.m. Monday through Friday; through the City's website at: www.cityofpoughkeepsie.com; or through the Hudson Valley Municipal Purchasing Group's Regional Bid Notification System. www.bidnetdirect.com/new-york Copies of bidding documents obtained from any other source are not considered official copies. Only those vendors who obtain bidding documents from the Purchasing Office, the City of Poughkeepsie website, or the Regional Bid Notification System will be sent addendum information, if such information is issued. If you have obtained this document from a source other than the City of Poughkeepsie Purchasing Office, or the HVMPG Regional Bid Notification System it is recommended that you obtain an official copy. You may obtain an official copy by registering on the HVMPG Regional Bid Notification System at www.bidnetdirect.com/new-york or by visiting www.cityofpoughkeepsie.com.

FIRM BIDS

Each bid submitted shall remain firm for at least ninety (90) days from the date of the Bid Opening and may not be withdrawn in whole or in part during that time. Bidder shall forfeit its bid security in the event of such withdrawal.

BASIS OF AWARD

Award of contract will be made to the lowest responsive, responsible bidder whose proposal shall comply with all of the provisions required to render it formal. The City of Poughkeepsie reserves the right to waive any informality or to reject any or all proposals and may re-advertise for new proposals, if the best interest of the City will be served. The City may require any and all bidders to present evidence of experience, ability and

PAYMENT AND RELEASE

Contractor shall submit payment applications to the Engineer for review, and shall include certified payrolls. Upon the recommendation of the Engineer, The Commissioner of Finance may withhold a sum not exceeding 5% of each payment hereunder for a period of up to Six (6) months from the date of final delivery and satisfaction of the Owner

QUESTIONS

Any questions or clarification to the bid specifications or technical specifications must be submitted in writing to Mr. Greg Bolner, Engineer, via fax at 845-451-4101, email to:

gbolner@cityofpoughkeepsie.com, or mail to **62 Civic Center Plaza, Poughkeepsie NY 12601.**

All questions must be submitted in writing **by 4:00 p.m. on Wednesday, May 20, 2021**

PROCUREMENT SCHEDULE

The following presents the anticipated schedule that the City of Poughkeepsie will follow relative to **RFB-COP-04-21-01**. The City of Poughkeepsie retains exclusive right to modify or abandon this schedule, if deemed in the City of Poughkeepsie's best interest, with no obligation to any party expressing interest herein. Modifications to this schedule will only be provided to interested parties who have registered as having requested and received to **RFB-COP-04-21-01** bid package from the City of Poughkeepsie.

Pre-bid Meeting	10:00 a.m. EST, May 12, 2021
• Closing Date for Questions	4:00 p.m. EST, May 20, 2021
• Bid Opening (Due Date/Time)	2:30 p.m. EST, May 26, 2021

INDEMNIFICATION

In addition to all other obligations of indemnification specified herein, contractor agrees to release and be liable for and to defend, indemnify, and save harmless the City of Poughkeepsie, its board members, officers, agents, servants, workmen, employees, subsidizers and indemnities, U.S. Department of Transportation, New York State Department of Transportation, and all government funding agencies providing funds or services in connection with this project (hereinafter collectively referred to as "the City of Poughkeepsie"), from and against any and all loss, cost, damage, liability and expense, including consequential damages, counsel fees, whether or not arising out of any claim, suit or action at law, in equity, or otherwise, of any kind or nature whatsoever, including negligence, arising out of the performance of the work by reason of any accident, loss or damage of property, including the work site, property of the City of Poughkeepsie and contractor, or injury, including death, to any person or persons, including employees of the City of Poughkeepsie, contractor, subcontractors at any tier or any person working on contractor's behalf, caused by contractor, which may be sustained either during the term of the contract, or upon or after completion of the project (up to a period of three {3} years), whether brought directly by these persons or by anyone claiming under or through them including heirs, dependents and estates.

Contractor also agrees for itself and on behalf of its agents, servants, subcontractors, material men, and employees to defend, indemnify and hold harmless the City of Poughkeepsie from and against any and all claims of any kind or nature whatsoever regarding subcontractors and material men and agrees to assume the defense of the City of Poughkeepsie to any such suit at its cost and expense. The contractor further assumes the risk of loss and damage to materials, machinery and equipment to be incorporated in the work at all times prior to delivery to the project site or while in the possession or under the control of the contractor.

Contractor, for itself and its employees, board members, officers, agents, servants, workmen, contractors, subcontractors, licensees and invitees, or any other person working on contractor's behalf, hereby releases and agrees to be liable for and to defend, indemnify and save harmless the City of Poughkeepsie, except to the extent that the City of Poughkeepsie is negligent in whole or in part, for any claims made by an employee, board member, officer, agent, workman or servant of contractor's or any other person working on contractor's behalf, including claims for compensation or benefits payable to any extent by or for contractor under any workers' or similar compensation acts or other employee benefit acts. In the event of joint or concurrent negligence of

the contractor and the City of Poughkeepsie, responsibility, if any, shall be apportioned comparatively in accordance with the laws of the State of New York. A contractor's obligations under this clause shall not be limited to the limits of coverage of insurance maintained or required to be maintained by contractor under any resultant agreement. This provision shall survive the termination of any resultant agreement.

A contractor's indemnity obligations under this section shall also specifically include, without limitations, all fines, penalties, damages, liabilities, costs, expenses (including, without limitations, reasonable attorney's fees), and punitive damages (if any) arising out of, or in connection with any:

1. Violation of or failure to comply with any law, statute, ordinance, rule, regulation, code or requirement of a public authority that bears upon the performance of the work by the contractor, a subcontractor, or any person or entity for whom either is responsible;
2. Means, methods, procedures, techniques, or sequences of execution or performance of the work; and
3. Failure to secure and pay for permits, fees, approvals, licenses and inspections as required under the contract documents, or any violation of any permit or other approval of a public authority applicable to the work, by the contractor, a subcontractor, or any person or entity for whom either is responsible.

In addition, contractor shall indemnify the City of Poughkeepsie for any fines and legal fees incurred because employees, agents, or workers supplied by contractor who are not authorized to work in the United States.

FUNDING/MWBE Participation

- The contract will be funded in part by the EFC- Environmental Facilities Corporation. **Please note that awarded Contractor may need to comply with any reporting requirements imposed on the City of Poughkeepsie by the federal government or the state of New York as a condition of the use of funds for this project.**
- This procurement is subject to MWBE Requirements and has a 23% goal. Eligible expenses include subcontracted labor or services, equipment, materials or any combined purchase. Contractors should reference the directory of New York State Certified MWBEs found at the following website; <https://ny.newnycontracts.com/>, or contact the Division of Minority and Woman Business Development at (518) 292-5250, (212) 803-2414 or (716) 846-8200 to discuss additional methods of maximizing participation.
- Contractor is encouraged to make good faith efforts to promote and assist in the participation of SDVOBs on the Contract for the provision of services and materials. The directory of New York State Certified SDVOBs can be viewed at: <http://ogs.ny.gov/Core/SDVOBA.asp>.

AMERICAN IRON AND STEEL (AIS)

This procurement is subject to the EFC –Environmental Facilities Corporation, American Iron and Steel (AIS) Requirements. See Appendix A
AIS waivers from the EPA may be sought if grounds for the waiver exist. See Appendix A

CERTIFICATION REGARDING LOBBYING

By signing and submitting a bid, the bidder agrees to furnish the Certification Regarding Lobbying. The signed certification must be submitted with the required Bid Forms. See Appendix A

DEBARMENT/SUSPENSION

Suspension/Debarment - The Service Provider is not a debarred or suspended party under 2 CFR Part 180, 2 CFR Part 1532 and 40 CFR Part 32. Further, neither the Service Provider nor any of its Subcontractors have contracted with, or will contract with, any debarred or suspended party under the foregoing regulations or with any party that has been determined to be ineligible to bid under Section 316 of the Executive Law.

DISADVANTAGED BUSINESS ENTERPRISES

This contract is subject to the requirements of the New York State Executive Law, Article 15-A and New York Code of Rules and Regulations, Title 5 (5 NYCRR) Parts 140-145.

EQUAL OPPORTUNITY

The EEO Policy Statement is documentation of a Service Provider's or Subcontractor's policy of non-discrimination in accordance with federal and state laws. EEO Policy Statements must: be submitted to the Recipient's minority business officer (MBO) as part of any bid proposal or upon execution of a subcontract; include language as defined above (see Required Terms for Project Contracts and Subcontracts – EEO Policy Statement definition); and be signed by the Service Provider or Subcontractor, as applicable.

NON-COLLUSION REQUIREMENT

Bidders are required to execute a non-collusion bidding certificate (attached) pursuant to Section 103d of the General Municipal Law of the State of New York.

EXCISE & FEDERAL TRANSPORTATION TAX

The Contractor may be exempted from the payment of Federal Excise and Transportation taxes, in accordance with the following:

- a. Excise Tax Exemption Certificate will be certified by the Engineer when requested by the Contractor for items which fall within the scope of the contract and may be exempt from Federal Excise Tax.
- b. The Contractor, in order to obtain exemption from the Federal Transportation Tax, shall notify all suppliers that shipping papers be worded as follows: "To the City of Poughkeepsie, New York, Consigned C/O _____ (Contractor)".

No certificate of exemption is necessary.

In the case that contradictory or conflicting regulations, specifications, or directives are found to exist between those of the Federal Government, its bureaus, departments and agencies and those of the local agencies, the more restrictive regulations, specifications or directives, shall be deemed to take precedence over the less restrictive.

IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

INTERAGENCY PURCHASING COOPERATIVE

The City of Poughkeepsie is part of a group known as the "INTERAGENCY PURCHASING COOPERATIVE". This group consists of the County of Dutchess, Dutchess Community College, and 82 different school and fire districts, cities, towns, and Villages located throughout Dutchess County. The City of Poughkeepsie is also part of a group known as the "Hudson Valley Municipal Purchasing Group" (HVMPG), which consists of the Counties of Dutchess, Rockland and Ulster; Town of Cortland; City of New Rochelle, and the Pearl River School District. Other municipal purchasing agencies in the Hudson Valley will be joining in this regional system.

INSURANCE:

The Contractor shall purchase and maintain in full force and effect insurance policies with the limits of insurance provided in the contract documents or the following insurance coverage's, whichever is greater. The insurance should be from an insurer that has an A.M. Best Rating of "A-" or better.

1. Commercial General Liability with limits not less than \$1,000,000 per occurrence, \$2,000,000 general aggregate, \$1,000,000 and \$2,000,000 products-completed operations aggregate. Such insurance shall cover liability arising from premises, operations, independent contractors, product-completed operations for one year following project completion, personal and advertising injury and liability assumed under an insured contract. There shall be no endorsement or modification of the Commercial GL form arising from pollution, explosion, collapse, underground property damage or work performed by subcontractors.
2. If required by owner, professional liability with a limit of \$2,000,000 per claim/occurrence and \$2,000,000 annual policy aggregate.
3. If required by owner, contractors pollution cleanup/remediation and pollution liability with a limit of \$2,000,000 per claim and \$2,000,000 annual policy aggregate
4. Business Automobile Liability with a limit of not less than \$1,000,000 each accident, including owned, non-owned, leased and hired vehicles.
5. Statutory Workers Compensation and employers liability coverage for all employees, including corporate officers and sole proprietors.
6. Umbrella/Excess Liability with a limit of not less than \$5,000,000 per occurrence/aggregate

City of Poughkeepsie is to be included as an additional insured on a primary, non-contributory basis (using CG 2010 07/04 and CG 2037 10/01 or its equivalent) for item 1. Items 1 and 6 will have no exclusions for New York State "labor law" claims and/or claims for injuries to subcontractor employees.

All policies required by this paragraph shall include a waiver of subrogation in favor of **City of Poughkeepsie**.

Except where prohibited by law, all policies and certificates of insurance shall expressly provide that **City of Poughkeepsie** must receive 30 days written notice in the event of material alteration, cancellation or nonrenewal of coverage, including subcontractors' insurance.

ADDENDA AND INTERPRETATIONS:

No interpretations of meaning of the plans, specifications or other portions of the contract documents will be made orally. Every request for such interpretation must be addressed to the Engineer, and to be given consideration must be received at least six days prior to the date fixed for the opening of bids. Any and all such interpretations and other supplemental instruction, will be in the form of a written addenda which, if issued, will be advertised on Empire state bid system, www.empirestatebidsystem.com and the City of Poughkeepsie's website, www.cityofpoughkeepsie.com . It is the responsibility of the vendor to acknowledge each addendum, failure to acknowledge the addendum could result in the bid package being deemed as "non-responsive"

LIQUIDATED DAMAGES:

The parties acknowledge that time is of the essence and that the Owner will suffer a financial loss if the Work is not completed within the specified time as provided by the Contract Documents, or any agreed to extensions thereof. The parties further acknowledge that it may be difficult or impossible to ascertain with certainty, the amount of actual damages incurred if the Contractor fails to complete the Work within the said time. Therefore, the Owner and Contractor agree that the liquidated damages as stated below are intended as compensatory in nature and are not as a penalty. The Contractor shall pay to the Owner as fixed, agreed and liquidated damages for each calendar day of delay exceeding the completion date as set forth in the contract documents herein until the delayed work is completed or accepted, the amount of FIVE HUNDRED Dollars (\$500.00) per day unless stated otherwise herein. It is agreed, however, that the Contractor shall not be charged with liquidated or actual damages if any delays in the completion of the work are due to causes beyond its control, including, but not limited to, acts of God, or war; acts of the City or any State or political subdivision thereof (including, but not restricted to the operation of any governmental preferences, priorities, or allocations of material); acts of another contractor in the performance of a contract with the Owner; floods, earthquakes, or other catastrophes, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather. The determination of the Owner shall be final.

BID PROTEST POLICY

CITY OF POUGHKEEPSIE
BOARD OF CONTRACTS

BID PROTEST PROCEDURES

There are three basic types of protests, based on the time in the procurement cycle when they occur.

- A pre-bid or solicitation phase protest is received prior to the bid opening or proposal due date.
- A pre-award protest is a protest against making an award and is received after receipt of proposals or bids, but before award of a contract.
- A post-award protest is a protest received after award of a contract.

1. Form of Bid Protest. Each protest must be in writing and delivered to the Purchasing agent within ten (10) calendar days of the City's notice of intent to award, after receipt of proposal/bid prior to bid opening and shall be addressed as follows:

Bid Protest
Purchasing Agent
City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, NY 12601

Specific contents of a protest shall include the name of the protester, the solicitation/contract number or description, and a statement of grounds for protest.

2. Notification of Bid Protest.

The Purchasing Agent shall contact the department responsible for the bid and inform him/her of the bid protest. The department shall gather the relevant information about the solicitation, evaluation, and award of the bid and provide it to the Purchasing Agent within ten (10) calendar days of notification of the Bid Protest.

3. Decision. The Purchasing Agent and the Board of Contract & Supply shall review the information relevant to the bid and shall render a decision on the protest, with the advice of the Office of the Corporation Counsel, in a prompt manner but not longer than thirty (30) days after the bid protest was received.

The decision shall contain the action taken and the reasons for such action, and shall be mailed, certified mail, return receipt requested, to the protestor at the address set forth in the bid protest.

A copy of the decision shall be distributed to the Department, the Board of Contract & Supply, and the Office of the Corporation Counsel. All documentation concerning the bid protest and the decision shall be retained in the Purchasing Department.

4. Appeal Process. An appeal of the decision may be made by either the department or the protestor as applicable. An appeal may be commenced by delivering seven copies of the following within seven (7) calendar days of the release of the decision: 1) a notice of an appeal to the Purchasing Agent; a statement of the nature and the reasons for the appeal, including claimed errors; and iii) a complete set of the documents submitted to the Purchasing Agent. The Purchasing Agent shall promptly deliver the copies to the Board of Contract and Supply, which shall set a hearing date for the appeal to commence, which date should not be later than forty-five (45) days from the notice of appeal. The appellant and respondent will be presented with an opportunity to address the Board of Contract & Supply and may be accompanied by counsel if desired.

5. Appeal Decision. Upon the conclusion of the appeal, the Board of Contract and Supply shall issue a decision within thirty (30) days of the conclusion of the appeal. The decision of the Board of Contract and Supply shall be final and conclusive

6. Responsibility for Settlement of Contract Issues/Disputes. The City of Poughkeepsie alone will be responsible in accordance with good administrative practice and sound business judgment for the settlement of all contractual and administrative issues arising out of procurements. These issues include, but are not limited to, source evaluation, protests, disputes, and claims. These standards do not relieve the City of any contractual responsibility under its contracts.

**BIDDERS PLEASE NOTE: This bid WILL REQUIRE a (5%) BID BOND
or CERTIFIED CHECK**

***** ALSO *****

**The successful bidder WILL BE REQUIRED TO POST a PERFORMANCE
BOND and a LABOR AND MATERIAL BOND.**

Please Return All Bids to the Address Below: (In a sealed envelope)

**City of Poughkeepsie Purchasing Department 62 Civic Center
Plaza Poughkeepsie, New York 12601**

Any and all questions concerning this bid shall be submitted in writing to close of business (4:00 PM EDT) on or before May 20, 2021

By email to: Gbolner@cityofpoughkeepsie.com

By Fax to 845-451-4101

**Or by regular mail to: The City of Poughkeepsie
Greg Bolner, Engineer, 62 Civic Center Plaza
Poughkeepsie N.Y. 12601**

WAGE RATE INFORMATION

Contractor and/or Subcontractors must use the higher of the Prevailing Federal, State or applicable local wage rates paid to each trade.

NOTE: If you are unsure which wage rate category applies please contact The New York State Department of Labor for assistance. (518) 457-2744

WAGE RATES

**CERTIFICATION OF PAYROLL PURSUANT TO SECTION 220 OF THE LABOR LAW
WILL BE REQUIRED**

**CERTIFIED PAYROLL MUST BE SUBMITTED MONTHLY OR WITH PAYMENT
REQUESTS**

**THIS PROJECT HAS BEEN ASSIGNED PRC# 2021003570
THIS SCHEDULE MAY BE VIEWED ON-LINE AT WWW.LABOR.STATE.NY.US**

DAVIS-BACON WAGE DETERMINATION RATES

**CERTIFICATION OF PAYROLL PURSUANT TO FAIR LABOR STANDARDS ACT OF
THE LABOR LAW WILL BE REQUIRED**

CERTIFIED PAYROLL MUST BE SUBMITTED WITH PAYMENT REQUESTS

**FEDERAL PREVAILING WAGE RATES ARE AVAILABLE NY20210007 AND CAN BE
VIEWED online AT:**

<http://www.beta.SAM.gov>,

**Click on Search Wage Determinations, Enter
NY 20210007 in the search box, click on the latest
update.**

Be sure to check back for updates.

General Decision Number:

"General Decision Number: NY20210007 04/16/2021

Superseded General Decision Number: NY20200007

State: New York

Construction Types: Building, Heavy and Highway

Counties: Dutchess, Orange, Sullivan and Ulster Counties in New York.

BUILDING CONSTRUCTION PROJECTS FOR ALL COUNTIES EXCEPT SULLIVAN (does not include single family homes and apartment up to and including 4 stories), HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021
1	03/12/2021
2	04/02/2021
3	04/16/2021

ASBE0040-003 05/01/2020

SULLIVAN AND ULSTER COUNTIES

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER		
Duties limited to preparation wetting; stripping; removal; scrapping; vacuuming; bagging; and disposing of all insulation materials whether they contain asbestos or not from mechanical systems.....	\$ 36.36	22.76
Insulator/asbestos worker (includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems).....	\$ 36.36	22.76

* ASBE0091-002 06/01/2020		

DUTCHESS AND ORANGE COUNTIES

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER		
Duties limited to preparation, wetting, stripping, removal scrapping, vacuuming, bagging and disposing of all insulation materials; whether they contain asbestos or not from mechanical systems.....	\$ 43.12	42.35
Insulator/asbestos worker (Includes application of		

all insulating materials,
 protective coverings,
 coatings, and finishes to
 all types of mechanical
 systems).....\$ 43.12 42.35

 BOIL0005-001 01/01/2017

	Rates	Fringes
BOILERMAKER.....	\$ 55.23	33%+24.12+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Thanksgiving Day, Memorial Day, Independence Day, Labor Day and Good Friday, Friday after Thanksgiving, Christmas Eve Day and New Year's Eve

 BRNY0005-001 06/01/2019

	Rates	Fringes
BRICKLAYER (BUILDING CONSTRUCTION)		
DUTCHESS, ORANGE (Excluding the town of Tuxedo) and ULSTER COUNTIES Bricklayers, Cement Masons, Plasterers, Stone Masons.....	\$ 42.09	34.50
ORANGE COUNTY (Town of Tuxedo) Bricklayers, Cement Masons, Plasterers, Stone Masons.....	\$ 42.59	34.50
BRICKLAYER (HEAVY CONSTRUCTION)		
DUTCHESS, ORANGE (Excluding the town of Tuxedo) and ULSTER COUNTIES Bricklayers, Cement Masons, Plasterers, Stone Masons.....	\$ 41.31	33.94
ORANGE COUNTY (Town of Tuxedo) Bricklayers, Cement Masons, Plasterers, Stone Masons.....	\$ 42.59	34.50
BRICKLAYER (HIGHWAY CONSTRUCTION)		
DUTCHESS, ORANGE (Excluding the town of Tuxedo), SULLIVAN and ULSTER COUNTIES Bricklayers, Cement Masons, Plasterers, Stone Masons.....	\$ 42.59	34.50

 CARP0279-005 07/01/2019

	Rates	Fringes
Carpenters:		
BUILDING CONSTRUCTION Carpenters, Millwrights, Pile Drivers.....	\$ 38.09	29.08
HEAVY & HIGHWAY CONSTRUCTION Carpenters, Millwrights, Pile Drivers.....	\$ 38.09	29.08

 CARP0740-002 07/01/2020

DUTCHESS AND ORANGE COUNTIES

	Rates	Fringes
MILLWRIGHT.....	\$ 44.25	39.91

 CARP1556-005 07/01/2020

DUTCHESS AND ORANGE COUNTIES

	Rates	Fringes
Diver Tender.....	\$ 50.34	51.79
Diver.....	\$ 70.80	51.79
Dock Builder & Piledrivermen.....	\$ 55.93	51.79

 ELEC0363-001 04/01/2021

	Rates	Fringes
ELECTRICIAN		
DUTCHESS (Remaining Townships), ULSTER AND SULLIVAN COUNTIES.....	\$ 43.00	3%+33.67+a
ORANGE and DUTCHESS (Townships of Fishkill, East Fishkill and Beacon) COUNTIES.....	\$ 47.00	3%+33.67+a

FOOTNOTE:

a. Paid Holidays: New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving, Christmas Day

ELEC1249-002 05/04/2020

	Rates	Fringes
ELECTRICIAN (LINE CONSTRUCTION-LIGHTING AND TRAFFIC SIGNAL INCLUDING ANY AND ALL FIBER OPTIC CABLE NECESSARY FOR THE TRAFFIC SIGNAL SYSTEMS, AND TRAFFIC MONITORING SYSTEMS, ROAD WEATHER INFORMATION SYSTEMS)		
Flagman.....	\$ 28.49	6.75%+33.90
Groundman (Digging Machine Operator).....	\$ 42.73	6.75%+33.90
Groundman (Truck Driver)....	\$ 37.98	6.75%+33.90
Groundman Truck Driver (Tractor Trailer Unit).....	\$ 40.36	6.75%+33.90
Lineman and Technician.....	\$ 47.48	6.75%+33.90
Mechanic.....	\$ 37.98	6.75%+33.90

PAID HOLIDAYS:

a. Memorial Day, New Year's Day, President's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

ELEC1249-004 05/04/2020

	Rates	Fringes
ELECTRICIAN (Line Construction)		
Overhead and underground distribution and maintenance work and all overhead and underground transmission line work including any and all fiber optic ground wire, fiber optic shield wire or any other like product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities :		
Flagman.....	\$ 32.10	6.75%+33.90
Groundman digging machine operator.....	\$ 48.15	6.75%+33.90
Groundman truck driver (tractor trailer unit)....	\$ 45.48	6.75%+33.90
Groundman Truck driver....	\$ 42.80	6.75%+33.90
Lineman and Technician.....	\$ 53.50	6.75%+33.90
Mechanic.....	\$ 42.80	6.75%+33.90
Substation:		
Cable Splicer.....	\$ 58.85	6.75%+33.90
Flagman.....	\$ 32.10	6.75%+33.90
Ground man truck driver....	\$ 42.80	6.75%+33.90
Groundman digging machine operator.....	\$ 48.15	6.75%+33.90
Groundman truck driver (tractor trailer unit)....	\$ 45.48	6.75%+33.90
Lineman & Technician.....	\$ 53.50	6.75%+33.90
Mechanic.....	\$ 42.80	6.75%+33.90
Switching structures; railroad catenary installation and		

maintenance, third rail
type underground fluid or
gas filled transmission
conduit and cable
installations (including
any and all fiber optic
ground product by any
other name manufactured
for the dual purpose of
ground fault protection
and fiber optic
capabilities), pipetype
cable installation and
maintenance jobs or
projects, and maintenance
bonding of rails; Pipetype
cable installation

Cable Splicer.....	\$ 60.30	6.75%+33.90
Flagman.....	\$ 32.89	6.75%+33.90
Groundman Digging Machine Operator.....	\$ 49.34	6.75%+33.90
Groundman Truck Driver (tractor-trailer unit)....	\$ 46.60	6.75%+33.90
Groundman Truck Driver.....	\$ 43.86	6.75%+33.90
Lineman & Technician.....	\$ 54.82	6.75%+33.90
Mechanic.....	\$ 43.86	6.75%+33.90

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, Good Friday, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

ELEC1249-005 05/06/2019

SULLIVAN COUNTY

	Rates	Fringes
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ELECTRICIAN (LIGHTING AND
TRAFFIC SIGNAL LINEMAN
INCLUDING ANY AND ALL FIBER
OPTIC CABLE NECESSARY FOR THE
TRAFFIC SIGNAL SYSTEM,
TRAFFIC MONITORING SYSTEMS
AND ROAD WEATHER INFORMATION
SYSTEMS.)

Flagman.....	\$ 27.00	6.75%+24.15
Groundman (Digging Machine Operator).....	\$ 40.50	6.75%+24.15
Groundman (Truck Driver)....	\$ 36.00	6.75%+24.15
Groundman Truck Driver (tractor trailer unit).....	\$ 36.00	6.75%+24.15
Lineman & Technician.....	\$ 45.00	6.75%+24.15
Mechanic.....	\$ 36.00	6.75%+24.15

FOOTNOTE:

a. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, plus President's Day, Good Friday, Decoration Day, Election Day for the President of the United States and Election Day for the Governor of the State of New York, provided the employee works the day before or the day after the holiday.

ELEC1249-008 01/03/2021

	Rates	Fringes
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ELECTRICIAN (Line
Construction)

TELEPHONE, CATV FIBEROPTICS CABLE AND EQUIPMENT		
Cable splicer.....	\$ 34.78	3%+5.14
Groundman.....	\$ 17.50	3%+5.14
Installer Repairman- Teledata		
Lineman/Technician- Equipment Operator.....	\$ 33.01	3%+5.14
Tree Trimmer.....	\$ 27.36	3%+9.98

a. New Year's Day, President's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving, Christmas Day.

ELEV0138-001 01/01/2020

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 60.49	34.765+a+b

FOOTNOTE:

- a. Vacation: 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.
b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

ENGI0106-004 07/01/2018

NORTHERN PART OF DUTCHESS (To The Northern Boundary line of the City of Poughkeepsie)

	Rates	Fringes
Power Equipment Operator HEAVY & HIGHWAY		
GROUP 1.....	\$ 43.47	26.05+a
GROUP 2.....	\$ 42.56	26.05+a
GROUP 3.....	\$ 39.99	26.05+a
GROUP 4.....	\$ 47.47	26.05+a
GROUP 5.....	\$ 46.47	26.05+a
GROUP 6.....	\$ 45.47	26.05+a
GROUP 7.....	\$ 45.08	26.05+a

POWER EQUIPMENT OPERATORS HEAVY & HIGHWAY CLASSIFICATIONS

GROUP 1: Asphalt Curb Machine, Self Propelled, Slipform, Automated Concrete Spreader (CMI Type), Automatic Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Back Filling Machine, Belt Placer (CMI Type), Blacktop Plant (Automated), Boom truck , Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Curb Machine, Self Propelled, Slipform, Concrete Pump, Crane, Cherry Picker, Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type), Pile Driver, Truck Crane, Directional Drilling Machine, Dredge, Dual Drum Paver, Excavator (All Purpose Hydraulically Operated) (Gradall or Similar), Front End Loader (4 cu. yd. and Over), Head Tower (Sauerman or Equal), Hoist (Two or Three Drum), Holland Loader, Maintenance Engineer, Mine Hoist, Mucking Machine or Mole Pavement Breaker(SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P.) Quad 9, Quarry Master (or equivalent), Scraper, Fireman, Form Tamper, Grout Pump, Gunite Machine, Hammers (Hydraulic self-propelled), Hydra-Spiker, ride-on, Hydraulic Pump (jacking system), Hydro-Blaster (Water), Mulching Machine, Oiler, Parapet Concrete or Pavement, Shovel, Side Boom, Slip Form Paver, Tractor Drawn, BeltType Loader, Truck or Trailer Mounted Log , Chipper (Self Feeder), Tug Operator (Manned Rented Equipment Excluded), Tunnel Shovel

GROUP 2: Asphalt Paver, Backhoe (Tractor Mounted, Rubber Tired), Bituminous Recycler Machine, Bituminous Spreader and Mixer, Blacktop Plant (NonAutomated), Blast or Rotary Drill (Truck or Tractor Mounted), Boring Machine, Cage Hoist, Central Mix Plant (NonAutomated) and All Concrete Batching Plants, Cherry Picker (5 tons capacity and under), Concrete Paver (Over 16S), Crawler Drill, Self-contained, Crusher, Diesel Power Unit, Drill Rigs, Tractor Mounted, Front End Loader (Under 4 cu. yd.), Greaseman/Lubrication Engineer, HiPressure Boiler (15 lbs. and over), Hoist (One Drum), Hydro-Axe, Kolman Plant Loader and Similar Type Loaders, L.C.M. Work Boat Operator, Locomotive Mixer (for stabilized base selfpropelled), Monorail Machine, Plant Engineer, Profiler (105 H.P. and under), Grinder, Post Hole Digger and Post Driver, Power Broom (towed), Power Heaterman, Power Sweeper, Revinus Widener, Roller (Grade and Fill), Scarifier, ride-on, Shell Winder, Skid steer loader (Bobcat or similar), Span-Saw, ride-on, Steam Cleaner, Pug Mill, Pump Crete Ready Mix Concrete Plant Refrigeration Equipment (for soil stabilization) Road Widener, Roller (all above subgrade), Sea Mule, Self-contained Ride-on Rock Drill, Excluding Air-Track Type Drill, Skidder, Tractor with Dozer and/or Pusher, Trencher. Tugger Hoist, Vermeer saw (ride on, any size or type), Winch, Winch Cat

GROUP 3: A Frame Winch Hoist on Truck , Articulated Heavy Hauler, Aggregate Plant, Asphalt or Concrete Grooving, Machine (ride on), Ballast Regulator, Ride-on Boiler (used

in conjunction with production), Bituminous Heater, self-propelled, Boat (powered), Cement and Bin Operator, Compressors, Dust Collectors, Fork Lift, Generators, Pumps, Welding Machines, Light Plants, Heaters (hands-off equipment), Concrete Pavement Spreader and Finisher, Concrete Paver or Mixer (16S and under), Concrete Saw (self-propelled), Conveyor, Deck Hand, Directional Drill Machine Locator, Drill, (Core), Drill, (Well,) Farm Tractor with accessories, Fine Grade Machine, Tamper, ride-on, Tie Extractor, ride-on, Tie Handler, ride-on, Tie Insertter, ride-on, Tie Spacer, ride-on, Tire Repair, Track Liner, ride-on, Tractor, Tractor (with towed accessories), Vibratory Compactor, Vibro Tamp, Well Point

GROUP 4: Tower Cranes

GROUP 5: Cranes 50 tons and over

GROUP 6: Cranes 49 tons and below

GROUP 7: Master Mechanic

FOOTNOTES:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day

ENGI0106-008 07/01/2018

NORTHERN PART OF DUTCHESS (TO THE NORTHEN BOUNDARY LINE OF THE CITY OF POUGHKEEPSIE) BUILDING CONSTRUCTION

	Rates	Fringes
Power equipment operators:		
GROUP A(1).....	\$ 43.79	25.70+a
1.....	\$ 45.04	25.70+a
2.....	\$ 46.04	25.70+a
GROUP A.....	\$ 43.30	25.70+a
GROUP B.....	\$ 42.28	25.70+a
GROUP C.....	\$ 39.38	25.70+a

Hazardous work - Anytime Operating Engineers are involved with level C or above, \$2.50 per hour over regular rate.

FOOTNOTE:

a. Paid Holiday: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP A(1): Crane, hydraulic cranes, tower crane, locomotive crane, piledriver, cableway, derricks, whirlies, dragline, boom truck (over 5 tons)

GROUP A(1): Crane Premiums

- 1 over 150' :add \$1.00
- 2 over 200': add \$2.00

GROUP A: Shovel, All excavator (except tractor mounted rubber tired John Deere 510 or smaller), gradalls, power road grader, all CMI equipment, front-end rubber tire loader, tractor-mounted drill (quarry master), mucking machine, concrete central mix plant, concrete pump, Belcrete system, automated asphalt concrete plant and tractor road paver, boom truck (5 tons and under).

GROUP B: Backhoe, (tractor mounted rubber tired equivalent to John Deere 510 or less), bulldozer, pushcat, tractor, traxcavator, scraper, LeTourneau grader, form fine grader, road roller, blacktop roller, blacktop spreader, power brooms, sweepers, trenching machine, Barber Green loader, side booms, hydrohammer, concrete spreader, concrete finishing machine, one drum hoist, power hosting (single drum), hoist - two drum or more, three drum engine, power hoisting (two drum and over), two drum and swinging engine, three drum swinging engine, hod hoist, A-L frame winches, cord and well drillers (one drum), post hole digger, model CHB Vibro-Tamp or similar machine, batch bin and plant operator, dinky locomotive, skid steer loader, track excavator 5/8 cu. yd. or smaller.

GROUP C: Fork lift, high lift, lull, Oiler, fireman and heavy- duty greaser, boilers, and steam generators, pump, vibrator, motor mixer, air compressor, dust collector, welding machine, well point, mechanical heater, generators, temporary light plants, concrete pumps, electric

submersible pump 4"" and over, murphy type diesel generator, conveyor, elevators, concrete mixer and belcrete power pack (belcrete system), seeding, and mulching machines, pumps.

ENGI0137-001 03/06/2017

DUTCHESS COUNTY (POUGHKEEPSIE AND SOUTH THEREOF)

BUILDING CONSTRUCTION

	Rates	Fringes
Power Equipment Operator		
GROUP 1A.....	\$ 53.95	28.52+a
GROUP 1B.....	\$ 49.68	28.52+a
GROUP 2A.....	\$ 52.03	28.52+a
GROUP 3A.....	\$ 50.11	28.52+a
GROUP 3B.....	\$ 47.67	28.52+a
GROUP 4A.....	\$ 49.60	28.52+a
GROUP 4B.....	\$ 41.85	28.52+a
GROUP 5.....	\$ 45.17	28.52+a
GROUP 5A.....	\$ 56.63	28.52+a
GROUP 5B.....	\$ 42.83	28.52+a
GROUP 6.....	\$ 44.92	28.52+a

NOTES: Hazmat: 20% above regular rate
Pumping operation Premium .50

Crane Operators (100-149 ft) 2.00

Crane Operators (149 ft +) 3.00

Loader Operators (over 5 cu y) .50

Shovel Operators (over 4 cu yd)1.00

FOOTNOTE:

a. New Years Day, Memorial Day, Independence Day, Labor Day
Thanksgiving Day, Christmas Day, plus Lincoln's Birthday,
Washington's Birthday, Good Friday, Columbus Day, November
Election Day, Veteran's Day.

POWER EQUIPMENT OPERATORS CLASSIFICATION

GROUP 1-A: Carrier- trailer horse; concret-portable hoist; crane & hoist engineer-steel (concrete, material, super structure sub- structure); derrick (stone-steel); elevator & cage; hoist- single/double or triple drum; hoist-portable mobile unit; hoist engineer-concert (crane-derrick-mine hoist); hoist engineer- material; overhead crane; power house plant; telephies (cableway); whirly; maintenance engineer; Lull hiliift or similar; hydraulic crane 25 ton and over; cherry picker 25 tons and over; backhoe Oliver 88; fordson; dynahoe; dual purpose and similar machines; Barber Green Loader-euclid loader or similar type; conway or similar mucking macking machines; dragline; gradall; shovel; backhoe etc. (crawler or truck); front end loaders; hydraulic boom; jersey spreader; lift slab console; letournequ or tounapull (scrapers over 20 yds struck); mucking machines; pavement breaker (air ram); paver (concrete); road boring machine; road mix machines; ross carrier and similar machines; post hole digger; shovel (tunnels); side boom; spreader (asphalt); scoopmobile-tractor-shovel over 1 1/2 yds. trenching machines vermeer concrete saw trencher and similar; tractor type demolition equipment; winch truck (a frame); hydraulic crane over 10 ton up to 25 ton); cherry picker over 10 ton up to 25 ton)

GROUP 1-B: Compressor (steel erection); pulse meter and push button buzz box; elevator; mechanic (outside) all types; welder; scrapers 20 yds struck and under; machine pulling sheep's foot roller; vibratory rollers; roller 4 tons and over.

GROUP 2-A: Compactor self-propelled; grader; bulldoze D7 and similar tractors with a draw bar horsepower of 100 or over; bulldozer D6 and under; welder; scraper 20 yds struck and under; machine pulling sheep's foot roller; vibratory rollers.

GROUP 3-A: Asphalt plant; boiler (high pressure); concrete mixing plants; concrete pump; firemen; forklift; forklift (electric); joy drill or similar tractor drilling machine; loader - 1 1/2 yards and under; locomotive (all sizes); mixer concrete - 21E and over; portable asphalt plant; portable batch plant; portable crusher; quarry master; stone crusher; well drilling machine and well point system; cherry picker under 10 tons; hydraulic crane under 10 tons; concert buffy; one yard an up ride on dumper (benford or

similar).

GROUP 3-B: Compressor over 125 cu. feet; conveyor belt machine regardless of size; lighting unit (portable & generator); welding machine (steel erection and excavation); and compressor plant; stud machine; ladder hoist.

GROUP 4-A: Air tractor drill; batch plant; bending machine; concrete breaker; concrete spreader; curb cutter machine; farm tractor (all types); finishing machine-concrete; hepavac clean air machine (all similar types: removal of asbestos etc.); material hopper-sand-stone-cement; mixer-concrete-under 21E; mulching grass spreader; pump-gypsum, etc., pump-plaster-grout -fireproofing; shop mechanic (not employed on job site); roller under 4 ton; spreading and fine grading machine; steel cutting machine; syphon pump-air-steam; tar joint machine; turbo jet burner or similar equipment; vibrator (1 to 5); fine grading machine; roof hoist (tugger hoist); television cameras-water- sewer-gas-etc.

GROUP 4-B: Compressor to 125 feet; dust; dust collector; heater all types; pump; pump station (water and sewer); steam jenny; sweeper; chipper; mulcher.

GROUP 5: Motorized roller (walk behind)

GROUP 5-A: Master Mechanic

GROUP 5-B: Utility Man

GROUP 6: Warehouse Man

ENGI0137-007 03/06/2017

Poughkeepsie and South thereof

	Rates	Fringes
Power Equipment Operator (HEAVY & HIGHWAY)		
GROUP 1.....	\$ 58.54	28.15+a
GROUP 1-A.....	\$ 51.68	28.15+a
GROUP 1-B.....	\$ 54.42	28.15+a
GROUP 2-A.....	\$ 49.52	28.15+a
GROUP 2-B.....	\$ 51.05	28.15+a
GROUP 3.....	\$ 48.67	28.15+a
GROUP 4-A.....	\$ 44.29	28.15+a
GROUP 4-B.....	\$ 38.13	28.15+a
GROUP 5.....	\$ 54.69	28.15+a
GROUP 5-A-1.....	\$ 54.69	28.15+a
GROUP 5-A-2.....	\$ 66.22	28.15+a
GROUP 5-A-3.....	\$ 63.97	28.15+a
GROUP 5-A-4.....	\$ 60.03	28.15+a
GROUP 5-A-5.....	\$ 50.65	28.15+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Boom Truck; Cherry Picker; Clamshell; Crane,
(Crawler, Truck); Dragline; Rough Terrain Crane

GROUP 1-A: Auger; Auto Grader; Dynahoe and Dual purpose and similar machines; Boat Captain; Boring Machine (all types); Bull Dozer-all sizes; Central Mix Plant Operator; Chipper-all types; Close circuit t.v.; Compactor with Blade; Concrete Portable Hoist; C.M.I. or similar; Conway or similar mucking machines; Gradall, Shovel Backhoe, etc. Grader; Derrick, (Stone- Steel; Elevator & cage, materials or passengers; Front end loaders over 1 1/2 yds.; Hoist Single, Double, Triple Drum, Hoist Portable Mobile Unit; Hoist Engineer-Concrete (Crane-Derrick-Mine Hoist); Hoist Engineer-Material, Hydraulic Boom; Letourneau or Tournapull (Scrapers over 20 yds. struck); Log Skidder; Movable Concrete Barrier Transfer & Transport Vehicle; mucking machines; overhead crane; paver (concrete); pulsemeter; push button (buzz box) elevator; road mix machines; Robot Hammer (brock or similar), Ross carrier and similar machines; shovels (tunnels); side boom; Slip Form Machine; spreader (asphalt); scoopmobile-tractor-shovel over 1 1/2 yards; trenching machines; telephies- vermeer concrete saw trencher and/or similar; tractor-type demolition equipment, Whirly

GROUP 1-B: Road Paver, Asphalt

GROUP 2-A: Ballast Regulators; Compactor self-propelled; Cow Tracks; Fusion Machine; Rail Anchor Machines; Roller 4 ton and over; Scrapers - 20 yards struck; Switch Tampers; Vibratory roller, etc.

GROUP 2-B: Mechanic (outside) all types

GROUP 3-A: Air tractor drill; asphalt plant; batch plant; boiler (high pressure; concrete breaker; concrete pump concrete spreader; curb cutter machine; farm tractor (all types); finishing machine (concrete); fine grading machine; fireman; forklift; forklift (electric); joy drill or similar tractor drilling machine; loader - 1 1/2 yards and under; locomotive (all sizes), maintenance engineer; machine pulling sheeps foot roller; material hopper; mixer concrete - 21-E and over; mulching grass spreader; portable asphalt plant, portable batch plant, portable crusher; powerhouse plant; quarry master; roller under 4 ton; spreading and fine grading machine; steel cutting machine; stone crusher; sweeper; turbojet burner or similar; well drilling machine ; winch truck ""A"" frame. John Henry Drill or similar.

GROUP 4-A: Service men (fuel or grease truck).

GROUP 4-B: Oiler; Compressor - compressor plant; paint compressor-steel erection; conveyor belt machine; lighting unit (portable & generator); oiler; pumps - pump station-water-sewer- gypsum- plaster, etc.; roller-motorized (walk-behind); welding machine (steel erection excavation); well point system; bending machine; dust collector; mixer - concrete under 21-E; heater all types; steam jenny; syphon pump-air-steam; tar joint machine; vibrator (1 to 5); Compressor Truck Mounted (2-6)

GROUP 5: Oiler

GROUP 5-A-1: Master Mechanic

GROUP 5-A-2: Engineer - all tower cranes, all climbing cranes and all cranes of 100 ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged (except for pile rigs).

GROUP 5-A-3: Engineer-- Pile Driver

GROUP 5-A-4: Hoist Engineer- Steel -Sub Structure

GROUP 5-A-5: Jersey-spreader, pavement breaker (air ram); Post Hole Digger

NOTES:

Loader Operator (over 5 cu yds) .50
Shoval Operators (over 4 cu yd) 1.00
Hazmat premium over regular rate 20%

CRANES:

100 ft- 149 ft: receive \$2.00 more than Group 1 rate
149 ft and over receive \$3.00 more than Group 1 rate

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day; Lincoln's Birthday; Good Friday; Memorial Day; Independence Day; Labor Day; Veterans Day; Columbus Day; November Election Day; Thanksgiving Day; and Christmas Day

ENGI0825-007 01/01/2018

ORANGE, ULSTER AND SULLIVAN COUNTIES

	Rates	Fringes
Power Equipment Operator		
BUILDING, HEAVY & HIGHWAY		
GROUP 1.....	\$ 50.57	30.30
GROUP 2.....	\$ 48.98	30.30
GROUP 3.....	\$ 47.07	30.30
GROUP 4.....	\$ 45.44	30.30
GROUP 5.....	\$ 43.73	30.30
GROUP 6.....	\$ 52.39	30.30

NOTES:

Hazmat Premium 20%
Hydrographic Premium .50

POWER EQUIPMENT OPERATORS CLASSIFICATIONS (BLDG, HEAVY & HWY)

GROUP 1: Autograde-Pavement-Profiler (CMI and Similar Type); utograde-Pavement-Profiler (CMI and Similar Types);Autograde Slipform Paver (CMI and Similar Types); Backhoe; Central Power Plants (all types); Concrete Paving Machine (s-240 and Similar Types); Cranes (All Types, Including Overhead and Straddle Traveling Type); Cranes, Gantry; Derricks (Land, Floating or Chicago Boom Type);

Drillmaster/Quartmaster (Down the Hole Drill) Rotary Drill; Self-Propelled, Hydraulic Drill, Self-Powered Drill Draglines, Elevator Graders, Front End Loaders (5 yds. and over), Gradalls, Grader: Rago, Helicopters (Copilot), Helicopters, (Communication Engineer), Locomotive (large), Mucking Machines, Pavement and Concrete Breaker (Superhammer, Hoe Ram, Brokk 250 and Similar Types), Pile Driver (length of boom including length of leads shall determine premium rate applicable), Roadway Surface Grinder Scooper (loader and shovel), Shovels, Tree Chooper with Boom, Trench Machines, Tunnel Boring Machines.

GROUP 2: "A" Frame; Backhoe (Combination); Boom Attachment on Loaders (Rate based on size of bucket) not applicable to Pipehook) Boring and Drilling Machines, Brush Chopper, Shredder and Tree Shredder Tree Shearer, Cableways, Carry-alls, Concrete Pump, Concrete Pumping System, Pumpcrete and Similar Types, Conveyors, 125 ft and over; Drill Doctor (duties include dust collector, maintenance), Front End Loader (22 yds. but less than 2 yds.), Graders (Finish); Groove Cutting Machine (ride on type), Heater Planer; Hoists: (all type hoists, Shall Also Include Steam, Gas, Diesel, Electric, Air Hydraulic, Single and Double Drum, Concrete, Brick Shaft, Caisson, Snorkel Roof, and or any other similar type Hoisting Machines, Portable or Stationary, Except Chicago Boom Type). Long Boom Rate to Be Applied if Hoist is "outside material lower hoist"; Hydraulic Cranes-10tons and Under; Hydro-Axe; Hydro-Blaster; Jacket (Screw Air Hydraulic Power Operated Unit or Console Type: Not Hand Jack or Pile Load Test Type), Log Skidder; Pans, Pavers (all) Concrete; Plate and Frame Filter Press; Pumpcrete Machines; Squeeze Crete and Concrete Pumping (regardless of size); Scrapers; Sidebooms; Straddle Carrier, Ross and Similar Types; Vacuum Truck; Whip Hammer; Winch Trucks (Hoisting).

GROUP 3: Asphalt Curbing Machine, Asphalt Plant Engineer, Asphalt Spreader; Autograde Tube Finisher & Texturing Machine (CMI and Similar types) Autograde Curecrete Machine (CMI and Similar Types); Bar Bending Machines (power), Batchers, Batching Plant and Crusher on-site; Belt Conveyor Systems; Boom Type Skimmer Machines; Bridge Deck Finisher; Bulldozers (all); Car Dumpers (A:road); Chief of Party; Compressor and Blower Type Units (used) Independently or Mounted On Dual Purpose Trucks, On Job Site or In Conduction with Job Site, In Loading and Unloading of Concrete, Cement, Fly Ash, Instantcrete, or Similar Type Materials); Compressor 92 or 3 in Battery); Concrete Finishing Machines; Concrete Saws and Cutters (ride on type); Concrete Spreaders, Hetzel, Rexomatic and Similar types; Concrete Vibrators; Conveyors, Under 125 ft), Crushing Machines, Ditching Machine, Small (ditchwitch, Vermeer or Similar type); Dope Dots (mechanical with or without pump), dumpsters; Elevator; Fireman; Forklifts (economobile, lull, and similar types of equipment); Front End Loaders (1 yd. and over but less than 2 yds.); Generators (2 or 3 in Battery/ within 100 ft); Giraffe Grinders, Graders and Motor Patrols; Grout Pump; Gunnite Machines (excluding nozzle); Hammer Vibratory (in conduction with generators); Hoists (Roof, Tuggeraerial Platform Hoist and House Cars), Hoppers, Hoppers Doors (power operated); Hydro-Blaster (where required); Ladders (Motorized); Laddervator; Locomotive, Dinky type; Maintenance, Utility Man; Mechanics; Mixers (Excepting Paving Mixers); Motor Patrols and Graders; Pavement Breakers, Small, Self-Propelled ride on type (also maintains compressor or hydraulic unit); Pavement Breaker, Truck Mounted; Pipe Bending Machine (power); Pitch Pump; Plaster Pump (regardless of size); Post Hole Digger (post pounder and auger); Rod Bending Machines (power); Roller, Black Top; Scales, (power); Seaman Pulverizing Mixer; Shoulder Widener; Silos; Skimmer Machines (Boom Type); Steel Cutting Machine, Services and Maintains; Tamrock Drill; Tractors; Tug Captain; Vibrating Plants (used in conduction with unloading); welder and Repair Machines. Concrete cleaning/decontamination machine operator; Directional boring machine; Heavy equipment robotics operator; Master environmental maintenance operator; Ultra high pressure waterjet cutting tool system operator; maintenance operator; Vacuum blasting machine operator

GROUP 4: Brooms and Sweepers; Chippers; Compressors (single); Concrete Spreaders (small type); Conveyor Loaders (not including Elevator Graders); Engines, Large Diesel (1620 h.p.) and Staging Pump; Farm Tractors; Fertilizing Equipment (Operator and Maintenance of); Fine Grade Machine (small type); Form Line Graders (small type); Front End Loader (under 1 yd); Generator (single); Grease, Gas, Fuel and Oil Supply Trucks; Heaters (Nelson or Other Type Including Propane, Natural Gas or Flowtype Units); Lights, Portable Generating Light Plants; Mixers, Concrete Small;

Mulching Equipment (Operation and Maintenance of); Pumps (2 of Less Than 4 Inch Suction); Pumps 94 Inch Suction and Over Including Submersible Pumps); Pumps (Diesel Engine and Hydraulic); Immaterial of Power; Road Finishing Machines (Small Type); Rollers, Grade, Full Or Stone Base; Seeding Equipment (Operation and maintenance of); Sprinkler and Water Pump Trucks (Used on Job Site or in conduction with Job Site); Steam Jennies and Boilers, Irrespective of Use; Stone Spreader; Tamping Machines, Vibrating Ride On; Temporary Heating Plant (nelson or Other Type, Including Propane, Natural Gas or Flow Type Units); Water and Sprinkler Trucks (Used On Job Site In Conduction with Job Site); Welding Machines-Within 100 ft (Gas, and /or Electric Converters of any type, single, tow or three in a battery). welding system, multiple (rectifier transformer type) well point systems (including installation by bull gang and maintenance of); Off Road back dumps.

GROUP 5: Oiler

GROUP 6: Helicopter Pilot

a. PAID HOLIDAYS: New Years Day, Washington's Birthday Memorial Day, July 4th, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day, provided the employee works one day during the calendar week in which the holiday occurs.

ENGI0825-008 01/01/2018

ORANGE, ULSTER AND SULLIVAN COUNTIES

	Rates	Fringes
Power equipment operators:		
BUILDING CONSTRUCTION		
STEEL ERECTION		
GROUP 1.....	\$ 59.09	30.30
GROUP 2.....	\$ 57.43	30.30
GROUP 3.....	\$ 50.14	30.30
GROUP 4.....	\$ 47.48	30.30
GROUP 5.....	\$ 45.95	30.30
GROUP 6.....	\$ 44.19	30.30
GROUP 7.....	\$ 53.70	30.30
BUILDING CONSTRUCTION TANK		
ERECTION		
GROUP 1.....	\$ 58.81	30.30
GROUP 2.....	\$ 57.22	30.30
GROUP 3.....	\$ 53.70	30.30
GROUP 4.....	\$ 50.13	30.30
GROUP 5.....	\$ 44.92	30.30
OILOSTATIC MAINLINES AND		
TRANSPORTATION PIPE LINES		
GROUP 1.....	\$ 51.20	30.30
GROUP 2.....	\$ 49.55	30.30
GROUP 3.....	\$ 47.41	30.30
GROUP 4.....	\$ 45.91	30.30
GROUP 5.....	\$ 44.19	30.30
GROUP 6.....	\$ 53.13	30.30

NOTES:
Hydrographic Premium 50
Hazmat Premium 20%
Tunnel Premium .75

STEEL ERECTION CLASSIFICATIONS

GROUP 1: Cranes (All Cranes, Land or Floating with Booms Including Jib 140 ft and over, Above Ground); Derricks, Land, Floating or Chicago Boom Type with Booms including Jib 140 ft and over above ground).

GROUP 2: Cranes (All Cranes, Land or Floating with Booms Including Jib Less Than 140 ft Above Ground); Derricks, Land, Floating or Chicago Boom Type with Booms Including Jib Less Than 140 ft above Ground).

GROUP 3: ""A"" Frame, Cherry Pickers 10 tons and under, Hoists Shall Also Include Steam, Gas, Desel, Electric, Air Hydraulic, Single and Double Drum Concrete, Brick Shaft Caisson, or Any Other Similar Type Hoisting Machines, Portable or Stationary, Except Chicago Boom Type; Jacks: Screw Air Hydraulic Power Operated unit or Console Type (not hand Jack or Pile Load Test Type); Side Booms.

GROUP 4: Aerial Platform used as Hoist; Compressor: 2 or 3 in Battery; Elevators or House Cars; Conveyors and Tugger Hosits; Chief of Party; Firemanp; Forklift; Generators (2 or 3); Maintenance (Utility Man); Rod Bending Machine

(power); Welding Machines (Gas or Electric, 2 or 3 in Battery, Including Diesels); Captain: Power Boats: Tug Master: Power Boats.

GROUP 5: Compressor, Single; Welding Machine, Single, Gas, Diesel, and Electric Converters of any Type: Welding System Multiple (Rectifier Transformer Type); Generator, Single.

GROUP 6: Oiler

GROUP 7: Helicopter Pilot .

FOOTNOTE: a. PAID HOLIDAYS: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day, provided the employee works one day in the calendar week during which the holiday occurs.

For BUILDING CONSTRUCTION TANK ERECTION CLASSIFICATIONS

NOTES: Tunnel Premium	.75
Hazmat Premium	20%
Hydrographic Premium	.50

TANK ERECTION CLASSIFICATIONS

GROUP 1: Operating Engineers on all Cranes, Derricks, ets with Booms Including Jib 140 ft or More Above Ground.

GROUP 2: Operating Engineer on all Equipment, Including Cranes, Derricks, ets with Booms Including Jib, Less Than 140 ft above the ground.

GROUP 3: Helicopter Pilot Engineer.

GROUP 4: Air Compressors, Welding Machines and Generators are Covered and are Defined as Cover: Gas, Diesel, or Electric Driven Equipment and Sources of Power from a Permanent Plant: ie: Staem, Compressed Air, Hydraulic or Other Power, For The Operating of any Machine or Automatic Tools, Used In The Erection, Alteration, Repair and Dismantling of Tanks and Any and All ""Dual Purpose"" Trucks Used On The Construction Job Site, or in the Loading and Unloading of Materials, at the Construction Job Sited or in Conjunction with the Job Site.

GROUP 5: Oiler

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day provided the Employee works one day in the calendar week during which the holiday occurs

For OILOSTATIC MAINLINES AND TRANSPORTATION PIPE LINE CLASSIFICATIONS

NOTES:	
Hydrographic Premium	.50
Hazmat Premium	20%
Tunnel Premium	.75

OILSTATIC MAINLINES AND TRANSPORTATION PIPE LINES CLASSIFICATIONS

GROUP 1: Backhoe; Cranes (all types); Draglines, Front End Loaders (5yds. and over), Gradalls, Helicopters (co-pilot), Helicopters (Communication Engineer); Scooper (Loader and Shovel) Koehring; Trench Machines.

GROUP 2: ""A"" Frame; Backhoe (Combination Hoe Loader); Boring and Drilling Machines; Ditching Machines, Small, Ditchwitch, Vermeer or Similar type; Forklifts; Front End Loaders 92 yds. and over but less than 5 yds.); Graders, Finish (fine); Hydraulic Cranes 10 tons and under (over 10 tons) Cranes Rate Applies); Side Booms: Winch Trucks (Hoisting).

GROUP 3: Backfiller; Brooms and Sweepers; Bulldozers; Compressor (2 or 3 in battery); Chief of Party; Front End Loaders (under 2 yds); Generators; Giraffe Grinders; Graders and Motor Patrols; Machnic; Pipe Bending Machine (power);Tractors; Water and Sprinkler Trucks used on Job Site or in Conduction with Job Site); Welder and Repair Mechanic; Captain (power boats); Tug Master (power boats).

GROUP 4: Compressor (single); Dope Pots (Mechanical with or without Pump); Dust Collectors; Pumps (4 inch suction and over); Pumps (2 of less than 4 inch suction); Pumps, Diesel Engine and Hydraulic (immaterial of power); Welding Machines, Gas or Electric Converters of any type- 2 or 3 in Battery Multiple Welders; Well Point Systems (including installation and Maintenance); Fram Tractors.

GROUP 5: Oiler, grease, gas, fuel and oil supply trucks; Tire repair and maintenance

GROUP 6: Helicopter Pilot

FOOTNOTE:

a. Paid Holidays: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day and Christmas Day provided the Employee works one day in calendar week during which the holidays occurs.

IRON0417-001 07/01/2020

	Rates	Fringes
IRONWORKER.....	\$ 40.48	46.45+a

a) Paid Holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Day after Thanksgiving (unpaid), Christmas Day.

* LAB0017-002 06/01/2019

	Rates	Fringes
LABORER		
DUTCHESS COUNTY (Asbestos, lead, toxic and hazardous waste abatement and any other environmental related work): (BUILDING CONSTRUCTION)		
GROUP 1.....	\$ 35.95	27.15
GROUP 2.....	\$ 37.75	27.15
DUTCHESS COUNTY (Asbestos, lead, toxic and hazardous waste abatement and any other environmental related work): (HEAVY & HIGHWAY:)		
GROUP 2.....	\$ 37.90	27.15+a
GROUP 3.....	\$ 42.15	27.15+a
ORANGE AND ULSTER COUNTIES (BUILDING CONSTRUCTION:)		
GROUP 1.....	\$ 35.95	27.15
GROUP 2.....	\$ 37.75	27.15
GROUP 3.....	\$ 40.50	27.15
ORANGE, ULSTER, AND SULLIVAN COUNTIES (HEAVY & HIGHWAY)		
GROUP 1.....	\$ 33.15	27.15+a
GROUP 2.....	\$ 37.90	27.15+a
GROUP 3.....	\$ 42.15	27.15+a
GROUP 4.....	\$ 46.75	27.15+a
TUNNEL, SHAFT & CAISSON WORK		
GROUP 1.....	\$ 48.05	29.50+a

LABORERS BUILDING CLASSIFICATIONS

GROUP 1: Custodial work, flag person, portable generator tender, portable pump tender, pitman and dumpman, firewatch, temporary heat tender, temporary light tender, traffic control, tool room tender; Artificial turf, air chipping hammer acoustic pump and mixer, carpenter tender, concrete, concrete curb and sidewalk form setter, concrete form stripping, concrete sealing, concrete curing, concrete finisher, concrete vibrator, compressor, clean up after trades, dismantling demolition, excavation, fireproofing, foundation and building piping, pump and mixer, gunite, general clean up, grade checker, grading and backfilling, hoists, hod carrier, landscaping, mason tender, multi building trades tender, jackhammer, pavement breaker, poured gypsum roof work, power tampers, power walk behind roller, pressure blasting, power mixer, scaffolding, snow removal, signal person, sandblasting, styrofoam and similar installation, radio control equipment including but not limited to radio control tampers and rollers, radio control

excavator, all erecting and dismantling of scaffold for masonry regardless of height, walking and riding power buggies, temporary weather protection, wrecking, waterproofing, stone and tile tenders, radio controlled hammers and breakers, unloading of trucks, air track, assembling and placing gabion baskets, asphalt, blaster, bob cat type machine for demo and clean up, chain link fence, chain saw, chipping hammer, concrete conveyor belt, saw, core drill, corrugated pipe, construction specialist, cleaning machine, concrete form setter, conduit layer, cutting torch, discharge pipe, drill chuck tender, duct bank layer, explosive handler, hydraulic splitter, granite or stone curbing, handler, joy and jib drill, Ingersoll Rand heavy duty crawler master type HCMZ drill machines or equivalent, laser level, nonmetallic pipe layer, metallic pipe layer, LeRoi hydraulic drill or similar, mega mixer, power fork lift, prestressed and precast concrete, power brush cutter, pumpcrete machine, retaining walls, rip rap, retention and toxic and hazardous waste liners, setting of block, setting of block, setting of brick, setting of stone, sound barriers, transit under laborers jurisdiction, tow behind concrete or grout pump, traffic and pedestrian stripping, surface planner, manufactured curb, walk behind surface planner, wagon drill, welding; * asbestos abatement work, lead abatement work, toxic and hazardous waste related work; when protective equipment and clothing are not required.

GROUP 2: Forklift for masonry purposes

GROUP 3: Asbestos Abatement work, toxic and hazardous abatement, lead abatement work, environmental work.

BUILDING CLASSIFICATIONS

GROUP 1: Asbestos abatement work, lead abatement work, toxic and hazardous waste related work; when protective equipment and clothing are not required.

GROUP 2: Asbestos abatement work, toxic and hazardous abatement, lead abatement work, environmental work.

LABORERS HEAVY AND HIGHWAY CLASSIFICATIONS

GROUP 1: Flagperson, gateperson

GROUP 2: General laborers, chuck tender, handling and distributing drinking water, distributing all tools and supplies of laborers, nipper, powder carrier, magazine tender, warehouse laborers, concrete man, vibrator man, mason tender, mortar man, spraying, brushing and covering of concrete for curing and preservative purposes, traffic striping, scaffold builder, concrete curb and sidewalk from setter; permanent traffic striping and reflective devices, placing and maintenance of all flares, cones, lights, signs, barricades, traffic patterns, and all temporary reflective type materials for traffic control, custodial work, traffic directors, temporary heat or light tenders, tool room, dewatering pump men, pitman, dumpmen, snow removal and firewatch, asphalt man, joint setter, signal person, pipelayer, pipelining and relining, wellpoints, conduit and duct layer, wire puller rip rap and dry stone layer, steel rod carrier, core drill, rock splitter, Hilti gun air or electric, jackhammer, bush hammer, pavement breaker, chipping hammer, wagon drill, air track, jib rig, joy drill, gunite and sand blasting, coal passer and other machine operators, power tool operator, sprayer and nozzle man on mulching and seeding machine, all guard rail and fence, all seeding and sod laying, all landscape work, grade checker, all bridge work, walk behind self-propelled power saw, grinder, groover or similar type machine, walk behind tamper and roller of all types, salvage, stripping, wrecking and dismantling laborer (including barman, cutting torch and burner man), sheeting and shoring coming under laborers jurisdiction, bit grinder, operator of form pin puller and drivers, sandblasting, joint and jet sealer, filling and wiring baskets for gabion walls, permanent sign man, median barrier, sta-wall or similar type product, chain saw operator, railroad track laborer, waterproofer, pre-stressed and pre-cast concrete brick, block and stone pavers, power tools used to perform work usually done by laborers, power buggy and pumpcrete operator, fireproof, plaster and acoustic pump, asbestos, toxic, bio-remediation, phyto-remediation, lead or hazardous materials abatement when protective clothing and equipment is not required, power brush cutter, retention liners, artificial turf, retaining walls, walk behind surface planer, welding related to laborers work, remote controlled equipment normally operated by laborers, all technician work

including but not limited to stitching, seaming, heat welding, fireproof sprayer, mortar mixer, concrete finisher, form setter for concrete curbs and flatwork. Gunite nozzle man, stone cutters, granite stone layer, manhole, catch basin or inlet installing, lase men. Ground man on milling machine.

GROUP 3: Ingersoll Rand eavy duty crawler master type HCMZ any drill using 4" or larger bit, asbestos, toxic, bio-remediation, phyto-remediation, lead or hazardous material abatement when protective clothing and equipment is required, all working foremen including grade, pipe, concrete, clearing, blacktop, drill, paving and blaster etc., Hydraulic drill or similar, forklift for masonry only, Blaster and asphalt screedman.

GROUP 4: Asbestos, toxic, lead or hazardous material abatement foreman.

HEAVY & HIGHWAY CLASSIFICATIONS

GROUP 1: Asbestos, toxic, bio-remediation, phyto-remediation, lead or hazardous material abatement; when protective equipment and clothing are not required.

GROUP 2: Asbestos toxic, bio-remediation, phyto-remediation, lead or hazardous material abatement when protective clothing and equipment is required.

FOOTNOTE:

PAID HOLIDAYS: New Years Day, Presidents's Day, Memorial Day, Independence Day, Labor Day, Election Day, Veterans Day, Thanksgiving Day, Christmas Day

TUNNEL, SHAFT & CASSION CLASSIFICATIONS

GROUP 1: Laborer, Pit and Dumpman, Chuck Tender, Brakeman and Powder; Miner and all mavhine men, Safety Miner, all shaft work, casson work, drilling, blow pipe, all air tools, tugger scaling, nipper gunniting srom pot to nozzle, bit grinder, singal man (top and bottom), shift steward, concrete man, shield driven tunnel, mixed face and soft ground liner plate tunnel in free air.

LAB00235-003 05/01/2016

DUTCHESS COUNTY

	Rates	Fringes
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Laborers:

BUILDING CONSTRUCTION

GROUP 1.....	\$ 33.30	26.25
GROUP 2.....	\$ 33.30	26.25
GROUP 3.....	\$ 33.30	26.25

LABORERS CLASSIFICATIONS (BUILDING)

GROUP 1: Mason tenders, carpenter tenders, laborer stripping and cleaning forms, laborer grading and digging ditches, sweepers, cleaners.

GROUP 2: Hod carriers, plasterers' tenders, scaffold builders (padlock and self-supporting scaffold 14 ft. or under all runways, mortar mixers) machine and hand, concrete mixers by machine under 21e, vibrators, form setters, asphalt rakers, handling reinforcement rods, drillers, jackhammer, operator, signalman, gunniting, motorbugs, water pump 2" or under barco machine, wreckers, paving breakers, power saw operators, other machine operators.

GROUP 3: Blasters, Laser beam operator.

LAB00235-005 05/01/2018

DUTCHESS COUNTY

	Rates	Fringes
--	-------	---------

Laborers:

HEAVY & HIGHWAY

GROUP 1.....	\$ 24.40	29.75+a
GROUP 2.....	\$ 28.16	29.75+a
GROUP 3.....	\$ 29.16	29.75+a

LABORERS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Flagperson, placing and maintenance of all flares, cones, light, signs, barricades, traffic control, custodial work, traffic directors, temporary heat or light tenders, tool rooms.

GROUP 2: General Laborers, Dumpman, Pitman, Concrete Man, Signal Man, Pipelayer, Rip Rap, Dry Stone Layer, Jackhammer, Powderman, Highscalers, Power Buggy Operator, Steel Rod Carrier, Vibratory Operator, Other Machine Operator, Wrecking, Vibrator Operator-Compactor, Gunite and Sand Blasting, Water Pump 2"" or under, Nipper, Chucker, Asphalt Workers.

GROUP 3: Asphalt Raker, Asphlat Screeman, Drillers (all), Laser Beam Operator, Form Setter/Aligners, Blasters.

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Lincoln's Birthday, Good Friday, Washington's Birthday, November Election Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Thanksgiving Day and Christmas Day and Veteran's Day.

PAIN0009-004 05/01/2020

DUTCHESS, ORANGE, SULLIVAN and ULSTER COUNTIES

	Rates	Fringes
GLAZIER.....	\$ 46.55	44.77

PAIN0155-003 05/01/2018

	Rates	Fringes
Painters:		
Drywall Finishers.....	\$ 32.99	22.76
Lead Abatement Work.....	\$ 32.99	22.76
Painter/Paperhanger.....	\$ 32.99	22.76
Spray Rate.....	\$ 33.99	22.76

PAIN0806-008 10/01/2020

DUTCHESS, ORANGE, SULLIVAN AND ULSTER COUNTIES

	Rates	Fringes
PAINTER		
Structural steel and Bridge.	\$ 51.50	49.63

PLUM0021-005 05/01/2018

ZONE 2

DUTCHESS COUNTY AND THE REMAINDER OF ULSTER COUNTY

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 50.84	34.52

PLUM0373-002 05/01/2019

ORANGE COUNTY Towns of Lakeville, Four Corners, Sterling Forest, Tuxedo Park, Southfields, Arden, Newburgh Junction, Greenwood Lake, Monroe, Harriman, Woodbury Falls, Woodbury, Woodbury Station, Central Valley, and the Palisades Interstate Park and Bear Mountain Park

	Rates	Fringes
Plumber; Steamfitter.....	\$ 46.92	39.72
REFRIGERATION MECHANIC.....	\$ 23.04	11.88

PLUM0373-003 05/01/2019

SULLIVAN COUNTY (Townships of Lumberland, Forestburgh, Highland, Tusten, Mamakating, Fallsburgh, Thompson, Bethel, Cochection, Delaware, Freemont, Callicoon, Liberty, Monticello, Neversink and Rockland); ORANGE COUNTY (Remaining Townships) and ULSTER COUNTY (Towns of Shawangurk, Wawarsing, Plattekill, Marlboro and Ellenville up to Napanoch Prison)

	Rates	Fringes
Plumber; Steamfitter.....	\$ 46.92	39.72

ROOF0008-002 07/01/2019

	Rates	Fringes
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ROOFER.....\$ 43.50 33.87

SFNY0669-002 01/02/2020

Rates Fringes

SPRINKLER FITTER.....\$ 45.52 25.95

SHEE0038-001 07/01/2020

Rates Fringes

Sheet metal worker.....\$ 46.92 42.55

TEAM0445-001 05/01/2019

Rates Fringes

Truck drivers:

GROUP 1.....	\$ 33.25	35.55+a
GROUP 1A.....	\$ 34.39	35.55+a
GROUP 2.....	\$ 32.69	35.55+a
GROUP 3.....	\$ 32.47	35.55+a
GROUP 4.....	\$ 32.36	35.55+a
GROUP 5.....	\$ 32.24	35.55+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Labor Day, President's Day, Presidential Election Day, Veterans Day, Decoration Day, Independence Day, Thanksgiving Day and Christmas Day provided the employee works two days in any calendar week during which the holidays occurs.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Drivers on Letourneau tractors, double barrel euclids, Athey wagons and similar equipment (except when hooked to scrapers), I-beam and pole trailers, drivers of road oil distributors, tire trucks and tractors and trailers with 5 axles and over, Articulated Back Dumps and Articulated Water Trucks.

GROUP 1A: Drivers on detachable Gooseneck Low bed Trailers rated over 35 tons.

GROUP 2: Drivers on all equipment 25 yards and over, up to and including 30 yard bodies and cable dump trailers and powder and dynamite trucks.

GROUP 3: Drivers on all equipment up to and including 24 yard bodies, mixer trucks, dump crete trucks and similar types of equipment, fuel trucks, batch trucks and all other tractor trailers.

GROUP 4: Drivers on tri axles, ten-wheelers, grease trucks and tillermen.

GROUP 5: Drivers on pick-up trucks used for materials & parts, drivers on escort man over-the-road and drivers on straight trucks.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the

Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

EFC Clauses and Requirements



Program Requirements and Bid Packet for Contracts Funded with the NYS Clean Water State Revolving Fund or Drinking Water State Revolving Fund

Recipient to Identify Contract Type:

☐ **Construction**

☐ **Treatment Works and Drinking Water Projects**

☐ **Non-Treatment Works**

☐ **Non-Construction**

Effective October 1, 2020

New York State Environmental Facilities Corporation
625 Broadway, Albany, NY 12207-2997
P: (518) 402-6924 F: (518) 402-7456
www.efc.ny.gov

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PART 1: HOW TO USE THIS DOCUMENT

The New York State Environmental Facilities Corporation (“EFC”) implements the New York State Revolving Fund (“SRF”) for both Clean Water and Drinking Water projects.

This Program Requirements and Bid Packet for Contracts document contains (1) a brief description of New York State and federal program requirements for Contracts and Subcontracts funded in whole or part by the New York State Clean Water and Drinking Water SRFs, (2) required language for such Contracts and Subcontracts to satisfy the SRF program requirements, including required forms, and (3) guidance materials to assist entities in complying with these requirements.

PROGRAM REQUIREMENTS

The following requirements apply projects funded with the NYS Clean Water State Revolving Fund or Drinking Water State Revolving Fund:

- Participation of Minority- and Women-Owned Business Enterprises (“MWBE”) and Equal Employment Opportunities (“EEO”) pursuant to New York State Executive Law, Article 15-A and New York Code of Rules and Regulations, Title 5 (5 NYCRR) Parts 140-145 (Regulations of the Commissioner of Economic Development);
- Equal Employment Opportunities pursuant to Titles VI and VII of the Civil Rights Act of 1964, 40 CFR Part 7, and 41 CFR Part 60-1 Subpart A;
- Affirmative Action requirements pursuant to 41 CFR Part 60-4;
- Non-discrimination requirements pursuant to Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972;
- Encouragement of participation of Service-Disabled Veteran-Owned Business Enterprises (“SDVOB”) in accordance with New York State Executive Law, Article 17-B and 9 NYCRR Part 252;
- American Iron and Steel (“AIS”) pursuant to P.L. 113-76, Consolidated Appropriates Act, 2014; WRRDA Section 608 of the Federal Water Pollution Control Act, as revised;
- Davis Bacon Related Acts (“DBRA”) consisting of the following: The Davis Bacon Act; Copeland Act (40 U.S.C. § 3145); Reorganization Plan No. 14; Department of Labor 29 CFR Parts 1, 3, and 5; Contract Work Hours and Safety Standards Act;
- Applicable State and/or local prevailing wage requirements;
- Requirements regarding suspension and debarment pursuant to 2 CFR Part 180, 2 CFR Part 1532, 29 CFR § 5.12, Executive Order 11246, State Labor Law § 220-b, and State Executive Law § 316; and,
- Restrictions on Lobbying pursuant to 40 CFR Part 34.

EFC or its authorized representatives, and other governmental entities as applicable, reserve the right to conduct occasional site inspections to monitor compliance with SRF program requirements.

This document is not intended to be inclusive of all applicable legal requirements and there may be other legal requirements that need to be included in a particular Contract or Subcontract that are not set forth here. Accordingly, EFC recommends that Recipients, Contractors, Subcontractors, and any other involved entities consult their legal counsel for advice on compliance with all applicable laws, including but not limited to local laws. This document is not intended to be legal advice.

Refer to the EFC website at www.efc.ny.gov for the latest version of the bid packet to ensure that the most recent forms and contract language are being used.

REQUIRED CONTRACT LANGUAGE

Part 2 of this document is the Required Contract Language. All of the language in Part 2 must be inserted into all Contracts and Subcontracts funded in whole or in part with SRF funds, in order for SRF Recipients, Contractors, and Subcontractors to comply with the above-listed SRF program requirements.

GUIDANCE MATERIALS

Part 3 of this document sets forth Guidance Materials intended to assist SRF Recipients, Contractors, and Subcontractors in complying with the foregoing SRF program requirements, as applicable.

The Guidance Materials are for informational purposes only and are not intended to be used as contractual language. Please do not incorporate the Guidance Materials into any Contracts or Subcontracts.

COMMONLY USED TERMS

The following commonly used terms are defined herein as follows:

“Contract” means an agreement between a Recipient and a Contractor.

“Contractor” means all bidders, prime contractors, Service Providers, and consultants as hereinafter defined, unless specifically referred to otherwise.

“Service Provider” means any individual or business enterprise that provides one or more of the following: legal, engineering, financial advisory, technical, or other professional services, supplies, commodities, equipment, materials, or travel.

“Subcontract” means an agreement between a Contractor and a Subcontractor.

“Subcontractor” means any individual or business enterprise that has an agreement, purchase order, or any other contractual arrangement with a Contractor.

“Recipient” means the party, other than EFC, to a grant agreement or a project finance agreement with EFC through which funds for the payment of amounts due thereunder are being paid in whole or in part.

“State” means the State of New York.

“Treatment Works” is defined in Clean Water Act (CWA) Section 212.

“Nonpoint Source Projects” and **“Green Infrastructure Projects”** are defined in CWA Section 319.

“Estuary Management Program Project” is defined in CWA Section 320.

PART 2: REQUIRED CONTRACT LANGUAGE

Recipient to Identify Contract Type:

☐ **Construction**

- ☐ **Treatment Works and Drinking Water Projects**
- ☐ **Non-Treatment Works**

☐ **Non-Construction**

SECTION 1 REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

For purposes of this section:

“Non-Construction” shall mean Contracts for labor, services (including, but not limited to, legal, financial, and other professional services), supplies, equipment, materials, or any combination of the foregoing.

“Contracts Meeting Article 15-A Thresholds” shall mean Contracts or Subcontracts meeting the thresholds under New York State Executive Law Article 15-A as follows:

- (a) Non-Construction Contracts greater than \$25,000;
- (b) Non-Construction Contracts, that are initially under \$25,000 but subsequent change orders or contract amendments increase the Contract value to above \$25,000;
- (c) Construction Contracts greater than \$100,000; and,
- (d) Construction Contracts that are initially under \$100,000 but subsequent change orders or contract amendments increase the Contract value to above \$100,000.

The Equal Employment Opportunities requirements of this section apply to all Contracts and Subcontracts, with the exception of:

- (1) the requirements under Title VII of the Civil Rights Act of 1964 and 41 CFR Part 60-1 Subpart A which apply only to construction Contracts and Subcontracts;
- (2) the Federal Affirmative Action Regulations requirements which apply only to construction Contracts and Subcontracts greater than \$10,000.

The Minority- and Women- Owned Business Enterprises (“MWBE”) participation requirements of this section apply to the Contracts Meeting Article 15-A Thresholds.

Disregard this section if it does not apply to this Contract or Subcontract.

I. General Provisions

- A. Contractors and Subcontractors are required to comply with the following provisions:
1. New York State Executive Law Article 15-A and 5 NYCRR Parts 140-145 ("MWBE Regulations") for all State Contracts as defined therein, with a value (1) in excess of \$25,000 for labor, services (including, but not limited to, legal, financial, and other professional services), supplies, equipment, materials, or any combination of the foregoing, or (2) in excess of \$100,000 for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon.
 2. Title VI of the Civil Rights Act of 1964 and 40 CFR Part 7 ("Title VI") for any program or activity receiving federal financial assistance, as those terms are defined therein.
 3. Title VII of the Civil Rights Act of 1964 and 41 CFR Part 60-1 Subpart A ("Title VII") for construction Contracts related to any government programs providing federal financial assistance, as those terms are defined therein.
 4. 41 CFR Part 60-4 ("Federal Affirmative Action Regulations") for federal or federally assisted construction Contracts in excess of \$10,000, as those terms are defined therein.
 5. Section 504 of the Rehabilitation Act of 1973 ("Section 504") for any program or activity receiving federal financial assistance, as those terms are defined therein.
 6. The Age Discrimination Act of 1975 ("Age Discrimination Act") for any program or activity receiving federal financial assistance, as those terms are defined therein.
 7. Section 13 of the Federal Water Pollution Control Act ("Clean Water Act") Amendments of 1972 ("Section 13") for any program or activity receiving federal financial assistance under the Clean Water Act, as those terms are defined therein.
- B. Failure to comply with all of the requirements herein may result in a finding by the Recipient that the Contractor is non-responsive, non-responsible, and/or has breached the Contract, leading to the withholding of funds or such other actions, liquidated damages pursuant to subsection III(F) of this section, or enforcement proceedings as allowed by the Contract.
- C. If any terms or provisions herein conflict with Executive Law Article 15-A, the MWBE Regulations, Title VI, Title VII, or Federal Affirmative Action Regulations, such law and regulations shall supersede these requirements.
- D. Upon request from the Recipient's Minority Business Officer ("MBO") and/or EFC, Contractor will provide complete responses to inquiries and all MWBE and EEO records available within a reasonable time. For purposes of this section, MBO means the duly authorized representative of the SRF Recipient for MWBE and EEO purposes.

II. Equal Employment Opportunities (EEO)

Applicable to all Contracts and Subcontracts unless otherwise noted

- A. Each Contractor and Subcontractor performing work on the Contract shall undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, EEO shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation.
- B. The Contractor shall comply with the provisions of the Human Rights Law (Executive Law Article 15), Title VI, Title VII, the Federal Affirmative Action Regulations, Section 504, Age Discrimination Act, Section 13, and all other State and Federal statutory and constitutional non-discrimination provisions. The Contractor and Subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

- C. Contractors and Subcontractors shall have instituted grievance procedures to assure the prompt and fair resolution of complaints when a violation of Title VI of the Civil Rights Act of 1964 or Title 40 CFR Part 7 is alleged.
- D. Pursuant to 40 CFR § 7.95, the Contractor shall display a copy of the EEO notice at the project site in a visible location. The notice shall accommodate individuals with impaired vision or hearing and should be provided in languages other than English where appropriate. The notice must also identify the employee responsible for its EEO compliance. A copy of the EEO notice ("EEO Poster") can be found at:
<https://www.dol.gov/ofccp/regs/compliance/posters/pdf/eeopost.pdf> .

The Contractor will include the provisions of Subdivisions II(A) and II(C) in every Subcontract in such a manner that the requirements of these subdivisions will be binding upon each Subcontractor as to work in connection with the Contract.

Applicable to all construction Contracts

- E. The Contractor and Subcontractor will comply with the requirements of 41 CFR § 60-1.4(b) and (c), and such provisions are hereby incorporated by reference. These provisions require, in part, that the Contractor and Subcontractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor and Subcontractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

Applicable to construction Contracts greater than \$10,000

- F. The Contractor and Subcontractor will comply with the Affirmative Action Regulations and such provisions are hereby incorporated by reference. These provisions require, in part, that the Contractor and Subcontractor place affirmative action goals on Contracts and Subcontracts, as established by the United States Department of Labor. Affirmative action goals for minorities and women by geographic region can be found here:
<https://www.dol.gov/sites/dolgov/files/ofccp/ParticipationGoals.pdf> .

G. Required EEO Forms

Pursuant to 41 CFR Section 60-1.7 for federally assisted construction Contracts, Contractor and Subcontractor will annually file an EEO-1 Report with the Joint Reporting Committee for the Office of Federal Contract Compliance Programs (OFCCP) and the Equal Employment Opportunity Commission (EEOC) according to the instructions provided at <https://www.eeoc.gov/employers/eo-1-survey/eo-1-instruction-booklet> , if Contractor or Subcontractor:

1. Is not exempt from compliance pursuant to 41 CFR § 60-1.5;
2. Has 50 or more employees;
3. Is a prime Contractor or first tier Subcontractor; or Subcontractor below the first tier which performs construction work at the site of construction; and
4. Has a Contract, Subcontract, or purchase order amounting to \$50,000 or more.

III. Business Participation Opportunities for MWBEs

Applicable to Contracts Meeting Article 15-A Thresholds

A. Contract Goals

1. For purposes of this Contract, EFC establishes the following goals for New York State certified MWBE participation based on the current availability of qualified MBEs and WBEs.

Program	MWBE Contract Goal*
CWSRF, DWSRF, & Green Innovation Grant Program	20%
NYS Water Infrastructure Improvement Act Grants (also receiving EFC loan)	Clean Water project 23% Drinking Water project 26%
NYS Intermunicipal Grants (also receiving EFC loan)	Clean Water project 24% Drinking Water project 24%

*May be any combination of MBE and/or WBE participation

2. For purposes of providing meaningful participation by MWBEs on the Contract and achieving the MWBE Contract Goals established in Section III-A hereof, the Contractor should reference the directory of New York State Certified MWBEs found at the following internet address: <https://ny.newnycontracts.com>.
3. The Contractor understands that only sums paid to MWBEs for the performance of a commercially useful function, as that term is defined in 5 NYCRR § 140.1, may be applied towards achievement of applicable MWBE participation goals.
 - a. For construction and construction-related services Contracts or Subcontracts, the portion of the Contract or Subcontract with an MWBE serving as a supplier, and so designated in ESD's Directory, that shall be deemed to represent the commercially useful function performed by the MWBE shall be 60% of the total value of the Contract or Subcontract. The portion of a Contract or Subcontract with an MWBE serving as a broker, as denoted by NAICS code 425120, that shall be deemed to represent the commercially useful function performed by the MWBE shall be the monetary value for fees, or the markup percentage, charged by the MWBE.
 - b. For non-construction Contracts or Subcontracts, the portion of a Contract or Subcontract with an MWBE serving as a broker that shall be deemed to represent the commercially useful function performed by the MWBE shall be 25% of the total value of the contract
4. Where MWBE Contract Goals have been established herein, pursuant to 5 NYCRR § 142.8, the Contractor must document "good faith efforts" to provide meaningful participation by MWBEs as Subcontractors or suppliers in the performance of the Contract.
5. In accordance with Section 316-a of Article 15-A and 5 NYCRR § 142.13, the Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the MWBE participation goals set forth in the Contract, such a finding constitutes a breach of Contract and the Contractor shall be liable to the Recipient for liquidated or other appropriate damages, as set forth herein.

B. MWBE Utilization Plan

1. The Contractor represents and warrants that Contractor has submitted an MWBE Utilization Plan to the Recipient prior to the execution of this Contract.
2. The Contractor agrees to use such MWBE Utilization Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section III-A of this section.

3. The Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, the Recipient shall be entitled to any remedy provided herein, including but not limited to, a finding that the Contractor is not responsive.
4. Contractor must report any changes to the Utilization Plan after Contract award and during the term of the Contract to the Recipient's MBO. Contractor shall indicate the changes to the MBO in the next Monthly MWBE Contractor Compliance Report after the changes occurred. At EFC's discretion, an updated MWBE Utilization Plan form and good faith effort documentation may be required to be submitted. When a Utilization Plan is revised due to execution of a change order, the change order should be submitted to the MBO with the Monthly MWBE Contractor Compliance Report or revised Utilization Plan.
5. The Contractor shall submit copies of all fully executed Subcontracts, agreements, and purchase orders that are referred to in the MWBE Utilization Plan to the MBO within 30 days of their execution.

C. Requests for Waiver

1. If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit a Request for Waiver to the Recipient documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request is complete, the Recipient shall forward the request to EFC for evaluation, and EFC will issue a written notice of acceptance or denial within twenty (20) days of receipt.
2. If the Recipient, upon review of the MWBE Utilization Plan and updated Quarterly MWBE Contractor Compliance Reports determines that the Contractor is failing or refusing to comply with the MWBE Contract Goals and no waiver has been issued in regards to such non-compliance, the Recipient may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

D. Monthly MWBE Contractor Compliance Report ("Monthly MWBE Report")

The Contractor agrees to submit a report to the Recipient by the third business day following the end of each month over the term of this Contract documenting the payments made and the progress towards achievement of the MWBE goals of the Contract. The Monthly MWBE Report must be supplemented with proof of payment by the Contractor to its Subcontractors (e.g., copies of both sides of a cancelled check) and proof that Subcontractors have been paid within 30 days of receipt of payment from the Recipient. The final Monthly MWBE Report must reflect all Utilization Plan revisions and change orders.

E. Liquidated Damages - MWBE Participation

In accordance with Section 316-a of Article 15-A and 5 NYCRR §142.13, if it has been determined by the Recipient or EFC that the Contractor has willfully and intentionally failed to comply with the MWBE participation goals, the Contractor shall be obligated to pay to Recipient liquidated damages or other appropriate damages, as specified herein and as determined by the Recipient or EFC.

Liquidated damages shall be calculated as an amount not to exceed the difference between:

1. All sums identified for payment to MWBEs had the Contractor achieved the approved MWBE participation goals; and,
2. All sums actually paid to MWBEs for work performed or materials supplied under this Contract.

The Recipient and EFC reserve the right to impose a lesser amount of liquidated damages than the amount calculated above based on the circumstances surrounding the Contractor's non-compliance.

In the event a determination has been made by the Recipient or EFC which requires the payment of damages identified herein and such identified sums have not been withheld, Contractor shall pay such damages to the Recipient within sixty (60) days after they are assessed unless prior to the expiration of such sixtieth day, the Contractor has filed a complaint with the Empire State Development Corporation – Division of Minority and Women’s Business Development (“ESD”) pursuant to Subdivision 8 of Section 313 of the Executive Law in which event the damages shall be payable if the Director of ESD renders a decision in favor of the Recipient.

SECTION 2 PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED SERVICE-DISABLED VETERAN-OWNED BUSINESSES

New York State Executive Law Article 17-B and 9 NYCRR Part 252 provide for more meaningful participation in public procurement by certified Service-Disabled Veteran-Owned Businesses (“SDVOBs”), thereby further integrating such businesses into New York State’s economy. EFC recognizes the need to promote the employment of service-disabled veterans and to ensure that certified service-disabled veteran-owned businesses have opportunities for maximum feasible participation in the performance of EFC Contracts.

In recognition of the service and sacrifices made by service-disabled veterans and in recognition of their economic activity in doing business in New York State, Contractors are strongly encouraged and expected to consider SDVOBs in the fulfillment of the requirements of the Contract. Such participation may be as Subcontractors or suppliers, as protégés, or in other partnering or supporting roles.

Contractor is encouraged to make good faith efforts to promote and assist in the participation of SDVOBs on the Contract for the provision of services and materials. The directory of New York State Certified SDVOBs can be viewed at: <http://ogs.ny.gov/Core/SDVOBA.asp>.

Contractor is encouraged to contact the Office of General Services’ Division of Service-Disabled Veteran’s Business Development at 518-474-2015 or VeteransDevelopment@ogs.ny.gov to discuss methods of maximizing participation by SDVOBs on the Contract.

SECTION 3 AMERICAN IRON AND STEEL (AIS) REQUIREMENT

The requirements of this section apply to (1) all construction Contracts and Subcontracts for DWSRF projects and CWSRF treatment works projects and (2) all Contracts for the purchase of iron and steel products for a DWSRF project or CWSRF treatment works project. Disregard this section if it does not apply to this Contract or Subcontract.

The Contractor acknowledges to and for the benefit of the Recipient of the Clean Water State Revolving Fund (“CWSRF”) or the Drinking Water State Revolving Fund (“DWSRF”) financial assistance that the Contractor understands the goods and services under this Agreement are being funded with monies made available by the New York State Environmental Facilities Corporation (“EFC”) through the CWSRF or the DWSRF and that such funding is subject to certain statutory restrictions requiring that certain iron and steel products used in the project be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor pursuant to this Agreement.

The Contractor hereby represents and warrants that:

- (a) the Contractor has reviewed and understands the American Iron and Steel Requirement,
- (b) all of the iron and steel products covered by the American Iron and Steel Requirement used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and
- (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Recipient.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Recipient to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Recipient resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the EFC or any damages owed to the EFC by the Recipient). While the Contractor has no direct contractual privity with the EFC, as a lender to the Recipient for the funding of this project, the Recipient and the Contractor agree that the EFC is a third-party beneficiary and neither this paragraph, nor any other provision of this Agreement necessary to give this paragraph force or effect, shall be amended or waived without the prior written consent of the EFC.

SECTION 4 DAVIS-BACON (DB) PREVAILING WAGE REQUIREMENTS

The requirements of this section apply to all construction Contracts and Subcontracts greater than \$2,000 for either DWSRF projects or CWSRF treatment works projects. Disregard this section if it does not apply to this Contract or Subcontract.

For Contracts in Excess of \$2,000:

1. Minimum Wages

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. The Davis-Bacon poster (WH-1321) can be found at <https://www.dol.gov/whd/regs/compliance/posters/davis.htm> . Wage determinations may be obtained from the US Department of Labor's website, <http://www.beta.sam.gov> .

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the Contract shall be classified in conformance with the wage determination. The contracting officer shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

1. The work to be performed by the classification requested is not performed by a classification in the wage determination;
2. The classification is utilized in the area by the construction industry; and,
3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (1) (ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program *provided* that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding. The Recipient shall upon its own action or upon written request of the EPA Award Official or an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the Contract, the Recipient may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR § 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B)

of the Davis–Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly for each week in which any Contract work is performed a copy of all payrolls to the Recipient. Such documentation shall be available on request of EFC or EPA. As to each payroll copy received, the Recipient shall provide written confirmation in a form satisfactory to EFC indicating whether or not the project is in compliance with the requirements of 29 CFR § 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR § 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at <https://www.dol.gov/agencies/whd/government-contracts/construction/forms> or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all Subcontractors. Contractors and Subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Recipient, for transmission to EFC, EPA if requested by EPA, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a Subcontractor to provide addresses and social security numbers to the prime Contractor for its own records, without weekly submission to the Recipient (or the applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a “Statement of Compliance,” signed by the Contractor or Subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the “Statement of Compliance” required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The Contractor or Subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Recipient, EFC, EPA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the

required records or to make them available, the Recipient, EFC, or EPA may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR § 5.12.

4. Apprentices and trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

5. Compliance with Copeland Act Requirements. The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.

6. Subcontracts. The Contractor or Subcontractor shall insert in any Subcontracts the clauses contained in 29 CFR § 5.5(a)(1) through (10) and such other clauses as the Recipient may by appropriate instructions require, and also a clause requiring the Subcontractors to include these clauses in any lower tier Subcontracts. The prime Contractor shall be responsible for the compliance by any Subcontractor or lower tier subcontractor with all the Contract clauses in 29 CFR § 5.5.

7. Contract Termination: Debarment. A breach of the contract clauses in 29 CFR § 5.5 may be grounds for termination of the Contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR § 5.12.

8. Compliance with Davis–Bacon and Related Act requirements. All rulings and interpretations of the Davis–Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.

9. Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and the Recipient, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

(i) By entering into this Contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government Contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001.

For Contracts in Excess of \$100,000:

1. Overtime requirements. No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any Subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$25 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

3. Withholding for unpaid wages and liquidated damages. The Recipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or Subcontractor under any such Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

4. Subcontracts. The Contractor or Subcontractor shall insert in any Subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the Subcontractors to include these clauses in any lower tier Subcontracts. The prime Contractor shall be responsible for compliance by any Subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

5. In any Contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR § 5.1, the Contractor or Subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the Contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the records to be maintained under this paragraph shall be made available by the Contractor or Subcontractor for inspection, copying, or transcription by authorized representatives of the Recipient and the Department of Labor, and the Contractor or Subcontractor will permit such representatives to interview employees during working hours on the job.

SECTION 5 REQUIREMENTS REGARDING SUSPENSION AND DEBARMENT

The requirements of this section apply to all Contracts and Subcontracts.

Contractor and any Subcontractors shall comply with, Subpart C of 2 CFR Part 180 as implemented and supplemented by 2 CFR Part 1532. The Contractor is not a debarred or suspended party under 2 CFR Part 180 or 2 CFR Part 1532, or 29 CFR § 5.12. Neither the Contractor nor any of its Subcontractors have contracted with, or will contract with, any debarred or suspended party under the foregoing regulations.

The Contractor and any Subcontractor have not been debarred from or deemed ineligible for Government Contracts or federally assisted construction Contracts pursuant to Executive Order 11246.

The Contractor and any Subcontractors have not been deemed ineligible to submit a bid on or be awarded a public contract or subcontract pursuant to Article 8 of the State Labor Law, specifically Labor Law § 220-b. In addition, neither the Contractor nor any Subcontractors have contracted with, or will contract with, any party that has been deemed ineligible to submit a bid on or be awarded a public contract or subcontract under Labor Law § 220-b.

In addition, the Contractor and any Subcontractors have not been deemed ineligible to submit a bid and have not contracted with and will not contract with any party that has been deemed ineligible to submit a bid under Executive Law § 316.

SECTION 6 RESTRICTIONS ON LOBBYING

The requirements of this section apply to all Contracts and Subcontracts greater than \$100,000. Disregard this section if it does not apply to this Contract or Subcontract.

The Contractor and any Subcontractor executing a Contract or Subcontract in excess of \$100,000 agree to provide to the Recipient an executed Certification Regarding Lobbying pursuant to 40 CFR Part 34 ("Lobbying Certification") in the form attached hereto as Attachment 9, consistent with the prescribed form provided in Appendix A to 40 CFR Part 34.

PART 3: GUIDANCE MATERIALS

APPLICABILITY OF PROGRAM REQUIREMENTS

This table contains a breakdown of the applicable program requirements based on contract type and its value. For further details pertaining to each requirement, refer to the section identified in the heading. The relevant section number is the same in both Part 2 and Part 3 of this document.

Type of Contract	MWBE Section 1	EEO¹ Section 1	Title VII Section 1	AIS Section 3	Davis Bacon Section 4	FAAR² Section 1	Suspension & Debarment Section 6	Restrictions on Lobbying Section 7
Construction: Treatment Works & Drinking Water Projects								
All		X	X	X			X	
If greater than:								
\$2,000		X	X	X	X		X	
\$10,000		X	X	X	X	X	X	
\$100,000	X	X	X	X	X	X	X	X
Construction: Non-Treatment Works								
All		X	X				X	
If greater than:								
\$10,000		X	X			X	X	
\$100,000	X	X	X			X	X	X
Non-Construction								
All		X		X				
If greater than:								
\$25,000	X	X		X				
\$100,000	X	X		X				X

¹ For purposes of this table, "EEO" includes the following: EEO requirements under 40 CFR Part 33, Title VI, Section 504, Age Discrimination Act, and Section 13.

² For purposes of this table, "FAAR" means the Federal Affirmative Action Regulations.

SECTION 1 GUIDANCE FOR THE REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR FEDERAL DISADVANTAGED BUSINESS ENTERPRISES AND NEW YORK STATE CERTIFIED MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

I. Summary of EEO and MWBE forms

A. Forms to be Submitted Prior to Contract Execution

Applicable to Contracts Meeting Article 15-A Thresholds

1. **MWBE Utilization Plan**

To be submitted by the Contractor to the MBO after the bid opening, but in no case more than ten (10) business days after the Contractor receives notice from the Recipient that the Contractor has submitted a low bid. For Contracts that are not bid, it is to be submitted prior to the Contract execution date. This form is attached hereto as Attachment 4. See Required Contract Language, Section 1(III)(B).

B. Forms to be Submitted During the Term of the Contract

Applicable to Contracts Meeting Article 15-A Thresholds

1. **Request for Partial or Total MWBE Waiver**

If applicable, to be submitted by the Contractor to the MBO at any time during the term of the Contract, but prior to the submission of a request for final payment on the Contract. This form is attached hereto as Attachment 5. See Required Contract Language, Section 1(III)(C).

2. **Monthly MWBE Contractor Compliance Report ("Monthly MWBE Report")**

To be submitted by the Contractor to the MBO by the third business day following the end of each month over the term of the Contract. This form is attached hereto as Attachment 3. See Required Contract Language, Section 1(III)(D).

Applicable to all construction Contracts

3. **EEO-1 Report**

To be submitted by the Contractor and Subcontractor, as applicable, annually during the term of the Contract or Subcontract. A sample EEO-1 Report can be found here:

https://www.eeoc.gov/sites/default/files/migrated_files/employers/eeo1survey/eeo1-2-2.pdf

Instructions for how to submit the EEO-1 Report online can be found here:

<https://www.eeoc.gov/employers/eeo-1-survey/eeo-1-instruction-booklet> . See Section 1(II)(D), Required Contract Language.

II. Equal Employment Opportunities (EEO)

A. EEO Poster

Applicable to all construction Contracts

Attachment 1, *EEO Poster*, is the notice provided by the United States Department of Labor, with a place added to identify the employee responsible for EEO compliance, as required by 40 CFR § 7.95.

B. EEO Goals

Applicable to construction Contracts greater than \$10,000

Pursuant to 41 CFR Part 60-4, the United States Department of Labor has established EEO goals for the employment of minorities and women. For federal and federally assisted construction Contractors, goals for minorities and females are established as a percentage participation rate. These goals are applicable to all of a Contractor's construction work sites (whether or not these sites are also the result of a federal Contract or are federally assisted). The goals are applicable

to each nonexempt Contractor's total onsite construction workforce, regardless of whether or not part of that workforce is performing work on a federal, federally assisted or non-federally related project Contract or Subcontract. Contractors should apply to each work site the goal for the geographical area that each particular work site is located in. These goals, and further information, are available at: <https://www.dol.gov/sites/dolgov/files/ofccp/ParticipationGoals.pdf>.

III. Business Participation Opportunities for MWBEs

Applicable to Contracts Meeting Article 15-A Thresholds

A. Contract Goals

The goals provided herein (Required Contract Language, Section 1(III)(A)) are effective as of October 1, 2020. MWBE participation goals for a contract will be based on the goals in place at the time of the execution date of each respective contract, unless otherwise specified.

Please contact EFC if you have any questions about the applicable MWBE participation goals for your contract.

B. Good Faith Efforts

The Contractor must make good faith efforts to develop an adequate MWBE Utilization Plan and must continue such good faith efforts to meet applicable MWBE participation goals. The Contractor shall maintain documentation of good faith efforts to solicit participation of MWBE firms for SRF-funded projects. If a Contractor is unable to meet contract MWBE participation goals, and submits a Request for Waiver, documentation of such good faith efforts must accompany the request. See Required Contract Language, Section 1(III)(C).

Contractor should also continue good faith efforts to seek opportunities for MWBE participation during the life of the contract even if proposed goals have been achieved.

Examples of documentation of good faith efforts are set forth below:

- Information on the scope of work related to the contract, such as a copy of the schedule of values from the bid submission, and specific steps taken to reasonably structure the scope of work to break out tasks or equipment needs for the purpose of providing opportunities for subcontracting with, or obtaining supplies or services from, MBEs or WBEs.
- Printed screenshots of the directory of Certified Minority- and Women- Owned Business Enterprises ("MWBE directory") on ESD's website for certified MWBEs that provide the services or equipment necessary for the contract. Contact the MBO for assistance in performing a proper search including identifying a sufficient number of solicitations to show that good faith effort was made.
- Copies of timely solicitations and documentation (e.g., faxes and emails) that the Contractor offered relevant plans, specifications, or other related materials to MBE and WBE firms on ESD's MWBE directory to participate in the work, with the responses.
- A log prepared by the Contractor in a sortable spreadsheet documenting the Contractor's solicitation of MBEs and WBEs for participation as Subcontractors or suppliers pursuant to a contract. The log should consist of the list of MBE and WBE firms solicited, their contact information, the type of work they were solicited to perform (or equipment to provide), how the solicitation was made (fax, phone, email) and the contact information, the contacts name and the outcome. If a bid was received, the bid price should also be included in the log. See a sample log format below:

Date	M/WBE Type	Company	Scope of work	Contact Name	Phone/ Email	Solicitation Format	MWBE Response	Negotiation Required?	Selected? If not, Explain

If no response was received to an initial solicitation, at least one follow-up solicitation should be made in a different format than the first, e.g. fax followed by phone call. Any winning bids received from non-MWBE firms for the same areas MWBEs were solicited should also be tracked on the log.

- Copies of any advertisements of sufficient duration to effectively seek participation of certified MBE and WBEs timely published in appropriate general circulation, trade and MWBE oriented publications, together with listing and dates of publication of such advertisements. EFC recommends the use of the NYS Contract Reporter that is free to all Contractors - <https://www.nyscr.ny.gov> .
- Documents demonstrating that insufficient MBEs or WBEs are reasonably available to perform the work.
- A written demonstration that the Contractor offered to make up any inability to meet the project MWBE participation goals in other Contracts and/or agreements performed by the Contractor on another SRF funded project.
- The date of pre-bid, pre-award, or other meetings scheduled by the Recipient, if any, and the contact information of any MBEs and WBEs who attended and are capable of performing work on the project.
- Any other information or documentation that demonstrates the Contractor conducted good faith efforts to provide opportunities for MWBE participation in their work. For instance, Prime Contractors and MBOs should develop a list of MWBE firms that have expressed interest in working on SRF-funded projects.

EFC reserves the right to request additional information and/or documentation to support the adequacy of the MWBE Utilization Plan and/or waiver request.

C. Review of the MWBE Utilization Plan

The MBO will evaluate a completed MWBE Utilization Plan. If the MBO finds the Utilization Plan sufficient, it will be forwarded to EFC for review. If the MBO finds the Utilization Plan insufficient, the MBO will work with the Contractor to address deficiencies before submitting to EFC for review. A written notice of acceptance or deficiency will be issued by EFC within 20 business days of receipt of the Utilization Plan. Upon receipt of a notice of deficiency from either the MBO or EFC, the Contractor shall respond with a written remedy to such notice within seven (7) business days of receipt.

D. Eligibility for MWBE Participation Credit

1. To receive MWBE participation credit, Contractors or Subcontractors performing work that have been identified in an approved MWBE Utilization Plan must be certified as an MBE or WBE by ESD.
 - a. A Contractor, who is a certified MBE or WBE, will be credited for up to 100% of the category of their certification. However, good faith efforts to seek participation in the other category are also required.
2. Prime Contractors may also include second or lower tier Subcontractors (Subcontractors hired by Subcontractors) on their MWBE Utilization Plan.
3. Credit for MWBE participation shall be granted only for MWBE firms performing a commercially useful business function according to custom and practice in the industry. An MWBE does not perform a commercially useful function if its role adds no substantive value and is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of participation.
 - a. "Commercially useful functions" normally include:

- i. Providing technical assistance to a purchaser prior to a purchase, during installation, and after the supplies or equipment are placed in service;
 - ii. Manufacturing or being the first tier below the manufacturer of supplies or equipment;
 - iii. Providing functions other than merely accepting and referring requests for supplies or equipment to another party for direct shipment to a Contractor; or,
 - iv. Being responsible for ordering, negotiating price, and determining quality and quantity of materials and supplies.
- b. For construction Contracts or Subcontracts, the following rules apply when calculating MWBE utilization:
 - i. The portion of a Contract or Subcontract with an MWBE serving as a manufacturer that shall be deemed to represent the commercially useful function performed by the MWBE shall be 100% of the total value of the Contract or Subcontract.
 - ii. the portion of a Contract or Subcontract with an MWBE serving as a supplier (as denoted by a NAICS code beginning with 423 or 424, or a NIGP code that does not begin with the number 9), and so designated in ESD's Directory, that shall be deemed to represent the commercially useful function performed by the MWBE shall be 60% of the total value of the Contract or Subcontract.
 - iii. the portion of a Contract or Subcontract with an MWBE serving as a broker (as denoted by NAICS code 425120) that shall be deemed to represent the commercially useful function performed by the MWBE shall be the monetary value for fees, or the markup percentage, charged by the MWBE.
- c. For non-construction Contracts or Subcontracts, the following rules apply when calculating MWBE utilization:
 - i. the portion of a Contract or Subcontract with an MWBE serving as a broker that shall be deemed to represent the commercially useful function performed by the MWBE shall be 25% of the total value of the contract. Any firms that are listed as brokers or manufacturers' representatives (NAICS code 425120) and not specifically as suppliers fall in this category.
- d. No credit will be granted for MWBEs that do not perform a commercially useful function.

E. Requests for Waiver

1. If the Contractor's application of good faith efforts does not result in the utilization of MWBE firms to achieve the aforementioned goals or a specialty equipment/service waiver is requested, the Contractor may request a full or partial waiver of MWBE participation goals by completing a Request for Waiver form, attaching appropriate documentation of good faith efforts, and submitting same to the MBO. See also Required Contract Language, Section 1(III)(C). Even if an MWBE waiver is granted, EEO information must still be submitted.
2. The MBO and EFC will review each waiver request based on the good faith effort criteria presented above and the documentation submitted with the waiver request. EFC will not issue any automatic waivers from MWBE responsibilities.
3. Specialty Equipment/Service Exclusion: A specialty equipment/service exclusion may be granted in cases where:
 - a. equipment is made by only one non-MWBE manufacturer,
 - b. the technical specifications call for equipment that is not available through an MWBE supplier;
 - c. the equipment is constructed on site by specially trained non-MWBE labor;
 - d. the service is not available through an MWBE (such as work done by National Grid);
 - e. the service is proprietary in nature (such as use of certain computer software necessary for control systems); or,

- f. the service cannot be subcontracted (such as litigation services).

If the contract includes specialty equipment or services, and documentation is submitted demonstrating that there are no MWBE firms capable of completing this portion of the contract, the specialty amount of the contract may be deducted from the total contract amount to determine the MWBE Eligible Amount and the goals will be applied to the MWBE Eligible Amount. This determination is made at the discretion of the MBO and EFC.

Example:

$$\begin{array}{rcl} \$200,000 & - & \$50,000 \\ \text{(Contract)} & \text{(Specialty equipment/service)} & \\ \hline & & = \$150,000 \\ & & \text{(MWBE Eligible Amount)} \end{array}$$

The MWBE goal is applied to the MWBE Eligible Amount.

A request for this specialty equipment/service deduction can be completed by filling out a Request for Waiver form and submitting it to the MBO. The request must include a copy of the page from the contract where the equipment/ service is described, an ESD search result for the manufacturer or manufacturer's representative, and documentation of the cost of each item. For construction Contracts, the schedule of values or bid tabulation sheet should also be submitted. Additional documentation may be requested by the MBO or EFC.

IV. Subcontractor's Responsibilities

Subcontractors should:

1. Maintain their MWBE certifications and notify the Contractor and MBO of any change in their certification status.
2. Notify the Contractor of any MWBE Subcontractors they hire so they may be included on the Contractor's Utilization Plan.
3. Respond promptly to solicitation requests by completing and submitting bid information in a timely manner.
4. Maintain business records that should include, but not be limited to, Contracts/agreements, records of receipts, correspondence, purchase orders, and canceled checks.
5. Ensure that a required EEO Policy Statement and applicable MWBE requirements are included in each subcontract.
6. Notify the MBO and EFC when contract problems arise, such as non-payment for services or when the Subcontractor is not employed as described in the MWBE Utilization Plan.

V. Protests/Complaints

Contractors or Subcontractors who have any concerns, issues, or complaints regarding the implementation of the SRF MWBE & EEO Program or wish to protest should do so in writing to the MBO and EFC. The MBO, in consultation with EFC, will review the circumstances described in the submission, investigate to develop additional information, if warranted, and determine whether action is required. If the Contractor or Subcontractor believes the issue has not been resolved to their satisfaction, they may appeal in writing to EFC for consideration.

VI. Waste, Fraud and Abuse

Subcontractors, Contractors, or Recipients who know of or suspect any instances of waste, fraud, or abuse within the MWBE & EEO Program should notify the project MBO and EFC immediately. Additionally, suspected fraud activity should be reported to the USEPA – Office of Inspector General Hotline at (888) 546-8740, the New York State Office of Inspector General at (800) 367-4448, or the ESD Compliance Office at (212) 803-3266.

SECTION 2 GUIDANCE FOR NEW YORK STATE CERTIFIED SERVICE-DISABLED VETERAN-OWNED BUSINESS ENTERPRISES (“SDVOB”) PARTICIPATION OPPORTUNITIES

Contractor may contact the Office of General Services’ Division of Service-Disabled Veteran’s Business Development at 518-474-2015 or VeteransDevelopment@ogs.ny.gov to discuss methods of maximizing participation by SDVOBs on the Contract. The directory of New York State Certified SDVOBs can be viewed at: <http://ogs.ny.gov/Core/SDVOBA.asp> .

Please contact EFC if you have any questions about utilizing SDVOBs on the Contract.

SECTION 3 GUIDANCE FOR AMERICAN IRON AND STEEL (“AIS”) REQUIREMENT

Since 2014, if a Recipient uses CWSRF or DWSRF financial assistance to fund all or a part of the construction, alteration, maintenance or repair a public water system or treatment works, the Recipient must use iron and steel products that are produced in the United States for the whole project.

The AIS requirement does not apply to:

1. a project for which engineering plans and specifications were submitted for review by the responsible State agency before January 17, 2014 and approved by that agency before April 15, 2014; or
2. a project funded by a financial assistance agreement with EFC that was signed before January 17, 2014.

The term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, construction materials. For one of the listed products to be considered subject to the AIS requirement, it must be made of greater than 50% iron and steel, measured by material cost (with the exception of reinforced precast concrete products).

The term “produced in the United States” means that all manufacturing processes of the iron or steel, including application of coatings, take place in the United States, with the exception of metallurgical processes involving refinement of steel additives. All manufacturing processes includes processes such as melting, refining, forming, rolling, drawing, finishing, fabricating and coating. Further, if a domestic iron and steel product is taken out of the US for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement and the material(s), if any, being applied as a coating are similarly not covered. Non-iron or steel components of an iron and steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-iron and steel components do not have to be of domestic origin.

The EPA may waive the AIS requirement for a treatment works project if:

1. applying the requirement would be inconsistent with the public interest;
2. iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
3. inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

A request for a waiver to use foreign iron or steel products must include adequate information for EPA’s evaluation of the request, including:

1. A description of the foreign and domestic iron, steel, and/or manufactured goods;
2. Unit of measure;
3. Quantity;

4. Cost;
5. Time of delivery or availability;
6. Location of the project;
7. Name and address of the proposed supplier; and,
8. A detailed justification for use of foreign iron or steel products.

Requests for AIS waivers are to be submitted to EFC. Upon review, EFC will submit AIS waiver requests to EPA. When EPA receives a request for a waiver, EPA will publish the request and any accompanying material on EPA's official public Internet site, allowing informal public input on the request for at least 15 days before granting or denying the waiver request.

Additionally, EPA has the authority to issue waivers that are national in scope. National waivers may be for specific products or in the public's interest. These waivers can be found at EPA's website at:

<https://www.epa.gov/cwsrf/american-iron-and-steel-requirement-approved-national-waivers-0>.

The "De Minimis Waiver" is noteworthy. The waiver permits the use of iron and steel products when they occur in de minimis incidental components of DWSRF or CWSRF projects, as long as:

1. the funds used for the de minimis incidental components cumulatively comprise no more than 5% of the total cost of the materials used in a project; and,
2. the cost of an individual item does not exceed 1% of the total cost of the materials used in the project.

Items covered by the de minimis waiver are:

1. essential, but incidental to the construction;
2. incorporated into the physical structure of the project; and,
3. often low-cost and bought in bulk.

Examples of "de minimis" items include: washers, screws, nuts, bolts, fasteners, miscellaneous wire, corner bead, ancillary tubing, etc.

Examples of items that are NOT incidental and therefore are not considered "de minimis" include: process fittings, tees, elbows, flanges, brackets, valves, sewer or water pipes for distribution, treatment or storage tanks, large structural support systems, etc.

To use the de minimis waiver, Contractors should prepare a record in spreadsheet form that tracks the cost of all materials incorporated into the project. This spreadsheet can be either project specific or contract specific. If it is contract specific, a material tracking record for each construction contract should be prepared and items that are subject to the AIS de minimis waiver should be highlighted. There should be a clear calculation available to indicate that the cost of the de minimis iron and steel items is 5% or less of the total cost of all materials.

Additional information, guidance and Questions and Answers about the State Revolving Fund American Iron and Steel (AIS) requirement can be found at EPA's website: <https://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement>.

SECTION 4 GUIDANCE FOR APPLICABLE LABOR STANDARDS

I. Davis-Bacon Act

The Davis-Bacon Act requires Contractors and Subcontractors performing construction, alteration and repair work under Contracts in excess of \$2,000 funded from SRF monies, to pay their laborers and mechanics not less than the prevailing wage and fringe benefits for the geographic location.

For purposes of this section, "State Recipient" means EFC.

A. Requirements for Recipients.

This guidance describes how Recipients assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under the Water Resources Reform and

Development Act of 2014 (WRRDA) with respect to State Recipients and Recipients. Recipients with questions about when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring should contact the State Recipient. Recipients can also obtain guidance from DOL's web site at <http://www.dol.gov/whd>.

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements. Under the Water Resources Reform and Development Act of 2014 (WRRDA), DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund. If a Recipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the Recipient must discuss the situation with the State Recipient before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Recipients must obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting Contracts (solicitation) for activities subject to DB. These wage determinations must be incorporated into solicitations and any subsequent Contracts. Prime Contracts must contain a provision requiring that Subcontractors follow the wage determination incorporated into the prime Contract.

(i) While the solicitation remains open, the Recipient must monitor <https://beta.sam.gov> weekly to ensure that the wage determination contained in the solicitation remains current. Recipients must amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the Recipient may request a finding from the State Recipient that there is not a reasonable time to notify interested Contractors of the modification of the wage determination. The State Recipient will provide a report of its findings to the Recipient.

(ii) If the Recipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersessions DOL makes to the wage determination contained in the solicitation shall be effective unless the State Recipient, at the request of the Recipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The Recipient shall monitor <https://beta.sam.gov> on a weekly basis if it does not award the Contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the Recipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing Contractor (ordering instrument) rather than by publishing a solicitation, the Recipient must insert the appropriate DOL wage determination from <https://beta.sam.gov> into the ordering instrument.

(c) Recipients must review all Subcontracts subject to DB entered into by prime Contractors to verify that the prime Contractor has required its Subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a Recipient's Contract after the award of a Contract or the issuance of an ordering instrument if DOL determines that the Recipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the Contract or ordering instrument. If this occurs, the Recipient must either terminate the Contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the Contract or ordering instrument by change order. The Recipient's Contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

B. Additional requirements for Recipients that are not governmental entities

Recipients that are not governmental entities must submit their proposed DB wage determinations to the State Recipient for approval prior to including the wage determinations in

any solicitation, Contract or issuing task orders, work assignments, or similar instruments to existing Contractors, as well as ordering instruments unless subsequently directed otherwise by the State Recipient award official as identified below.

Recipients must obtain proposed wage determinations for specific localities at <https://beta.sam.gov> . After the Recipient obtains its proposed wage determination, it must submit the wage determination to the State Recipient award official at: Timothy Burns, P.E., Director, Engineering and Program Management, New York State Environmental Facilities Corporation, at 518-402-7396 or at the following email address: Timothy.Burns@efc.ny.gov.

C. Compliance Verification

(a) The Recipient must periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that Contractors or Subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The Recipient must use Standard Form 1445 or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The Recipient must establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by Contractors or Subcontractors and the duration of the Contract or Subcontract. Recipients must increase the frequency of the interviews if the initial interviews or other information indicates that there is a risk that the Contractor or Subcontractor is not complying with DB. Recipients must immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews must be conducted in confidence.

(c) The Recipient must periodically conduct spot checks of a representative sample of weekly payroll data to verify that Contractors or Subcontractors are paying the appropriate wage rates. The Recipient must establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by Contractors or Subcontractors and the duration of the Contract or Subcontract. At a minimum, the Recipient must spot check payroll data within two weeks of each Contractor or Subcontractor's submission of its initial payroll data and two weeks prior to the completion date the Contract or Subcontract. Recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the Contractor or Subcontractor is not complying with DB. In addition, during the examinations the Recipient must verify evidence of fringe benefit plans and payments thereunder by Contractors and Subcontractors who claim credit for fringe benefit contributions.

(d) The Recipient must periodically review Contractors' and Subcontractors' use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that Contractors and Subcontractors are not using disproportionate numbers of laborers, trainees and apprentices. These reviews must be conducted in accordance with the schedules for spot checks and interviews described in Item (b) and (c) immediately above.

(e) Upon the request of EFC, the Recipient must provide EFC with a written certification indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies from Contractors/Subcontractors for the specified week.

(f) Recipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <https://beta.sam.gov> .

II. Responsibilities of Contractors and Subcontractors

After execution of any SRF eligible Contracts, the Contractor and Subcontractor have the following responsibilities:

1. Post Davis Bacon Wage Poster and applicable federal, state, and local wages in a visible area at the construction site. This poster may be found on the EFC website under the

- Resource Library. (Refer to the attached required forms)
2. Make your employees available for wage interviews if necessary. Wage interviews must be conducted confidentially and using Labor Standard Interview Form (SF-1445). (Refer to the attached required forms)
 3. Use federal payroll form WH-347 and complete the certifications on the back. If another form is being used, inform the Recipient and obtain a determination that the form is equivalent to the federal form. (Refer to the attached required forms)
 4. Pay the higher of applicable prevailing federal, state, or local wages, including benefits (fringe & holidays), to each trade and overtime not less than one and one-half times the basic rate of pay for hours in excess of forty hours on Contracts in excess of \$100,000. The wage rates apply to Subcontractor trades as well.
 5. Maintain proof of apprentice and trainee ratios for both Contractor and Subcontractor and certifications onsite.
 6. Pay wages to your employees and your Subcontractors on a weekly basis. Ensure that your Subcontractors are paying their employees weekly.
 7. Ensure that the Subcontracts contain the Davis Bacon contract language, the applicable federal, state, or local wage determinations and equal employment opportunity language. This language is provided in the Part 2: Required Contract Language. Federal wage determinations are available at <https://beta.sam.gov>.
 8. Provide payroll forms and apprentice and trainee certifications to the Recipient for their records.
 9. Report potential waste, fraud and abuse violations to the EPA Davis Bacon Contact and DOL Wages and Hours District Office found on their website. <https://beta.sam.gov>. Any violations in payroll reporting or unpaid wages are subject to a daily monetary penalty.

SECTION 5 GUIDANCE FOR STATE AND/OR LOCAL PREVAILING WAGE REQUIREMENTS

Contractors and Subcontractors working under a public works contract are subject to labor standards under State Labor Law, including but not limited to prevailing wage requirements, and may be subject to additional labor requirements under applicable local laws. When preparing the bid for an SRF project, the Contractor, and any Subcontractors, must use the higher of the applicable prevailing federal, State, or local wage rates paid to each trade.

SECTION 6 GUIDANCE FOR REQUIREMENTS REGARDING SUSPENSION AND DEBARMENT

A list of debarred and suspended contractors, pursuant to 2 CFR Parts 180 and 1532, 29 CFR § 5.12, and Executive Order 11246 is available on the US Department of Labor's website at <https://www.sam.gov/portal/public/SAM>.

A list of contractors and subcontractors deemed ineligible to submit a bid on or be awarded a public contract or subcontract, pursuant to Article 8 of the State Labor Law, is available on the New York State Department of Labor's website at <http://labor.ny.gov/workerprotection/publicwork/PDFs/debarred.pdf>

A list of contractors deemed ineligible to submit a bid is maintained by Empire State Development's Division of Minority and Women's Business Development.

SECTION 7 GUIDANCE FOR RESTRICTIONS ON LOBBYING

Each Contractor and any Subcontractor that has a Contract or Subcontract exceeding \$100,000 shall provide to the Recipient a completed Certification Regarding Lobbying pursuant to 40 CFR Part 34 ("Lobbying Certification") in the form attached hereto as Attachment 9 consistent with the prescribed form provided in Appendix A to 40 CFR Part 34. The form provides a certification that the Contractor or Subcontractor will not expend appropriated federal funds to pay any person for influencing or attempting to influence an officer or employee of any agency, Member of Congress, officer or employee of Congress or any employee of any Member of Congress in accordance with the provisions of 40 CFR Part 34, and to maintain such certification for their own records.

SECTION 8 SUMMARY OF CONTRACTOR REQUIREMENTS FOR SRF-FUNDED PROJECTS

Forms can be found as attachments to this document or online at www.efc.ny.gov

Forms should be submitted electronically via email or through EFC's [dropbox](#)

To be submitted with this bid:

- ☐ Lobbying Certification
- ☐ AIS Contractor's Certification

**Refer to Part 3
Guidance Section**
Section 7
Section 3

To be submitted prior to or upon Contract award:

- ☐ Executed Contracts, Subcontracts, agreements, and purchase orders
- ☐ MWBE Utilization Plan and/or Waiver Request

Section 1

Tasks for construction start:

- ☐ Ensure that all Subcontracts contain Part 2: Required Contract Language
- ☐ Post EEO Poster
- ☐ Pay the higher of prevailing federal, state, or local wages including benefits
- ☐ Post Davis Bacon Wage Poster AND Wage Rates
- ☐ Use Federal Payroll Form (WH-347)
- ☐ Obtain apprentice and trainee certifications
- ☐ Obtain AIS Manufacturer's Certifications for all iron & steel products

Section 1

Section 4

Section 4

Section 4

Section 4

Section 3

Ongoing documentation & tasks:

- ☐ Submit EEO-1 Report, online
- ☐ Submit Monthly MWBE Reports to MBO
- ☐ Maintain weekly certified payrolls for all Prime & Subcontractors
- ☐ Maintain proof of payments for MWBE Subcontractors
- ☐ Maintain AIS Manufacturer's Certifications

Section 1

Section 1

Section 4

Section 1

Section 3

ATTACHMENTS (Required Forms)

Attachment 1 – Monthly MWBE Contractor Compliance Report

New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
("Monthly MWBE-SDVOB Report")

Instructions:

- Contractors are to complete the report in Word version and email to the Recipient's Minority Business Officer ("MBO") on a monthly basis.
- If you require additional pages, you may find them on EFC's website at www.efc.ny.gov.
- All** MWBE Subcontractors for this contract **MUST** be listed on the form regardless of whether they were paid this month.
- Please save Report as "*MReport – (Project No). – (Municipality) – (Firm Name) – (Date)*" and send the Word version of this document.
- Proofs of payment in the amounts shown below must be transmitted to the MBO with the report.

Municipality:		County:		Contract ID:		Month:	Year:	
Project No.:		GIGP/EPG No:		Registration No. (NYC only):				
Prime Contractor/Service Provider:				Award Date:		Start Date:		
Date all MWBE / SDVOB subs paid in full:								
Signature of Contractor: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief. Date:								
Last Month's Contract Amt: \$ Revised Contract Amt: \$ Change Order Amt: \$	MWBE Eligible Amt: \$ (Goals are applied to this amount and includes eligible change orders, amendments & waivers)		EFC MWBE Goals		Total Paid to Prime Total Paid this Month: \$ Total Paid to Date: \$			
			MBE: % MBE Amt: \$ WBE: % WBE Amt: \$ Total: % Total Amt: \$					
	SDVOB Eligible Amount \$		EFC SDVOB Goals					
			SDVOB 6 % SDVOB Amt: \$					
NYS Certified MWBE / SDVOB Contractor & Subcontractor		Please Specify Any Revisions this Month.		Subcontractor Total Amount		Payments this Month	Previous Payments	Total Payments Made to Date
				Original	Revised			
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker ___% ☐ Supplier ☐ N/A		☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED						
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker ___% ☐ Supplier ☐ N/A		☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED						

New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
("Monthly MWBE-SDVOB Report")

NYS Certified M/WBE / SDVOB Contractor & Subcontractor	Please Specify Any Revisions this Month.	Subcontractor Contract Amount		Payments this Month	Previous Payments	Total Payments Made to Date
		Original	Revised			
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					

New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
("Monthly MWBE-SDVOB Report")

NYS Certified M/WBE / SDVOB Contractor & Subcontractor	Please Specify Any Revisions this Month.	Subcontractor Total Amount		Payments this Month	Previous Payments	Total Payments Made to Date
		Original	Revised			
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Choose all that apply:</u> ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: <u>MWBE Only - Select Only One:</u> ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					

New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
("Monthly MWBE-SDVOB Report")

NYS Certified M/WBE / SDVOB Contractor & Subcontractor	Please Specify Any Revisions this Month.	Subcontractor Total Amount		Payments this Month	Previous Payments	Total Payments Made to Date
		Original	Revised			
Name: Fed. Employer ID#: Choose all that apply: ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: MWBE Only - Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Choose all that apply: ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: MWBE Only - Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Choose all that apply: ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: MWBE Only - Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Choose all that apply: ☐ MBE ☐ WBE ☐ SDVOB ☐ DSDVBD Control #: MWBE Only - Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Additional Pages can be found at www.efc.ny.gov TOTAL						
Please explain any revisions and note the scope of work that new subcontractors will be providing. Please note that change orders over \$25K may require that good faith efforts be made to obtain additional participation:						

Attachment 2 – MWBE Utilization Plan

**NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan**

Instructions for Contractors & Service Providers:

Contractors and Service Providers must complete Sections 2 and 3. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format to the Recipient's designated Minority Business Officer (MBO) no later than the date of contract execution.** Incomplete forms will be found deficient. If more than 10 subcontractors are used, additional pages for Section 3 can be found on EFC's website.

If the prime contract is being performed by the parties to a Joint Venture, Teaming Agreement, or Mentor-Protégé Agreement that includes a certified MWBE, please contact EFC for assistance.

MWBE firms must be certified by the NYS Empire State Development Corporation (ESD) in order to be counted towards satisfaction of MWBE participation goals. The utilization of certified MWBEs for non-commercially useful functions may not be counted towards utilization of certified MWBEs in the Utilization Plan. Please note whether a firm is serving as a broker or supplier on the contract. A broker is denoted by NAICS code 425120 and is designated as a broker in ESD's MWBE Directory. A supplier is denoted by a NAICS code beginning with 423 or 424, or a NIGP code that does not begin with the number 9, and is designated as a supplier in ESD's MWBE Directory. If a firm is serving as a broker, please additionally provide the percentage of the broker's commission on the contract.

See the Bid Packet at www.efc.ny.gov or consult your designated MBO for further guidance.

Instructions for Minority Business Officers (MBO):

The MBO must complete Section 1. The MBO may designate an Authorized Representative to complete and submit quarterly payment reports on its behalf, and, if so designated, the MBO's Authorized Representative must also complete Section 1. The Authorized Representative may only submit quarterly payment reports on behalf of the MBO and may not submit any other required forms or reports for the MBO. The MBO must complete Section 1 even if designating an Authorized Representative. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format via e-mail to your EFC MWBE Representative.**

The subject heading of the e-mail to the EFC MWBE Representative should follow the format "UP, Project Number, Contractor." EFC will review the Utilization Plan and notify the MBO via e-mail of its acceptance or denial.

**NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan**

SECTION 1: MUNICIPAL INFORMATION			
Recipient/Municipality:		County:	
Project No.:	GIGP/EPG No.:	Contract ID:	Registration No. (NYC only):
Minority Business Officer:		Email:	Phone #:
Address of MBO:			
Electronic Signature of MBO: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.			Date:
Complete if applicable:			
Authorized Representative:		Title:	
Authorized Rep. Company:		Email:	Phone #:
Electronic Signature of Authorized Rep.: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.			Date:

SECTION 2: PRIME CONTRACTOR / SERVICE PROVIDER INFORMATION				
Firm Name:			Contract Type: ☐ Construction ☐ Other Services	
Prime Firm is Certified as: ☐ MBE ☐ WBE ☐ N/A ☐ Other: Please repeat information in the Utilization Plan below (Section 3). If dual certified, you must select either MBE or WBE.				
Address:		Phone #:	Fed. Employer ID #:	
Description of Work:				
Award Date:	Start Date:	Completion Date:	MWBE GOAL Total	PROPOSED MWBE Participation
Total Contract Amount: \$ MWBE Eligible Contract Amount: \$ (MWBE Goals are applied to this amount and includes all change orders, amendments, & waivers)			MBE: % \$ WBE: % \$ Total: % \$	MBE: % \$ WBE: % \$ Total: % \$

**NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan**

SECTION 3: MWBE SUBCONTRACTOR INFORMATION				
This Submittal is:	☐ The First/Original Utilization Plan ☐ Revised Utilization Plan #:			
NYS Certified M/WBE Subcontractor Info		Contract Amount:		For EFC Use:
		MBE (\$)	WBE (\$)	
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	Completion Date:			
Full Contract Amount: \$				

**NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan**

SECTION 3: M/WBE SUBCONTRACTOR INFORMATION continued				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	Completion Date:			
Full Contract Amount: \$				
SIGNATURE				
Electronic Signature of Contractor: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and that all MWBE subcontractors will perform a commercially useful function. Name (Please Type):				Date:

Attachment 3 – MWBE Waiver Request

**New York State Environmental Facilities Corporation
Minority & Women Owned Business Enterprise (MWBE) Waiver Request Form**

Instructions for Contractors & Service Providers:

Contractors and Service Providers must complete Sections 2, 3, and 4. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format to the Recipient's designated Minority Business Officer (MBO).** Incomplete forms will be found deficient.

See the Bid Packet at www.efc.ny.gov or consult your designated MBO for further guidance.

Instructions for Minority Business Officers (MBO):

The MBO must complete Section 1. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format via e-mail to your EFC MWBE Representative.** The subject heading of the e-mail to the EFC MWBE Representative should follow the format "Waiver Request, Project Number, Contractor." EFC will review and notify the MBO via e-mail of its acceptance or denial.

If a partial MWBE waiver is requested, an MWBE Utilization Plan must also be submitted for the amount of proposed MWBE participation.

SECTION 1: MUNICIPAL INFORMATION				
Recipient/Municipality:			County:	
Project No.:	GIGP/EPG No.:	Contract ID:	Registration No. (NYC only):	
Minority Business Officer (MBO):		Email:	Phone #:	
Address of MBO:				
Signature of MBO: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.				Date:

SECTION 2: PRIME CONTRACTOR / SERVICE PROVIDER INFORMATION				
Firm Name:			Contract Type: ☐ Construction ☐ Other Services	
Prime Firm is Certified as: ☐ MBE ☐ WBE ☐ N/A ☐ Other:				
Address:		Phone #:	Fed. Employer ID #:	
Contact Information of Firm Representative Authorized to Discuss Waiver Request:				
Name:	Title:	Phone #:	E-mail:	
Description of Work:			EFC MWBE GOAL Total	
Award Date:	Start Date:	Completion Date:	MBE:	% \$
Total Contract Amount: \$ MWBE Eligible Contract Amount: \$ (MWBE Goals are applied to this amount and includes all change orders, amendments, & waivers)			WBE:	% \$
			Total:	% \$

**New York State Environmental Facilities Corporation
Minority & Women Owned Business Enterprise (MWBE) Waiver Request Form**

SECTION 3: TYPE OF MWBE WAIVER REQUESTED

1. ☐ **Full Waiver** (No MWBE participation)
2. ☐ **Partial Waiver** (Less than the MWBE goals; indicate below the proposed MWBE participation)

PROPOSED MWBE Participation

MBE: % \$

WBE: % \$

Total: % \$

3. ☐ **Specialty Equipment/Services Exclusion** (Must be of SIGNIFICANT cost - list of equipment and cost must be attached in addition to the supporting documentation outlined below)

SECTION 4: SUPPORTING DOCUMENTATION

To be considered, the Request for Waiver Form must be accompanied by the documentation requested in items 1 – 9, as listed below. If a Specialty Equipment Exclusion is requested, it must be accompanied by the documentation requested in items 1 - 13. If a Specialty Services Exclusion is requested, it must be accompanied by the items requested in items 1 – 9 and item 14. Copies of the following information and all relevant supporting documentation must be submitted along with the request. Please contact EFC for assistance, including sample documentation.

1. A letter of explanation setting forth your basis for requesting a partial or total waiver and detailing the good faith efforts that were made.
2. Copies of advertisements in any general circulation, trade association, and minority- and women-oriented publications in which you solicited MWBEs for the purposes of complying with your participation goals, with the dates of publication.
3. Screenshots of search results (by business description or commodity code) from Empire State Development Corporation's (ESD) MWBE Directory of all certified MWBEs that were solicited for purposes of complying with your MWBE participation goals.
4. Copies of faxes, letters, or e-mails sent to MWBE firms to solicit participation and their responses.
5. A log of solicitation results, consisting of the list of MWBE firms solicited for the contract and the outcome of the solicitations. The log should be broken out into separate areas for each task that is solicited (e.g., trucking, materials, electricians) and clearly provide a rationale for firms included on the completed Utilization Plan as well as for those not chosen. The log should show: that each MWBE firm was contacted twice by two different methods (e.g., fax and phone); who was spoken to; what was said; and the final outcome of the solicitation.
6. A description of any contract documents, plans, or specifications made available to MWBEs for purposes of soliciting their bids and the date and manner in which these documents were made available. Specifically, include information on the scope of work in the contract and a breakout of tasks or equipment, such as

**New York State Environmental Facilities Corporation
Minority & Women Owned Business Enterprise (MWBE) Waiver Request Form**

a schedule of values for a construction contract or a proposal or excerpt from a professional services agreement.

7. Documentation of any negotiations between you, the Contractor, and the MWBEs undertaken for purposes of complying with your MWBE participation goals.
8. Any other information you deem relevant which may help us in evaluating your request for a waiver. Examples may include sign-in sheets from any pre-bid meetings where MWBE firms were invited, attendance at MWBE forums, etc.
9. EFC and the MBO reserve the right to request additional information and/or documentation.

Additional Documentation for Requests for Specialty Equipment Exclusions:

10. Copies of the appropriate pages of the technical specification related to the equipment showing the choices for manufacturers or other information that limits the choice of vendor.
11. Letter, e-mail or screenshot of website from the manufacturer listing their distributors in NYS and the locations.
12. Screenshots of ESD's MWBE Directory searches for the manufacturer and distributor showing that they are not found in the Directory.
13. An invoice or executed purchase order showing the value of the equipment.

Additional Documentation for Requests for Specialty Service Exclusions:

14. A letter of explanation containing information about the scope of work and why no MWBE firms could be subcontracted to provide that service.

Note: Unless a Total Waiver has been granted, Firms will be required to submit all reports and documents pursuant to the provisions set forth in the procurement and/or contract, as deemed appropriate by EFC, to determine MWBE compliance. In cases where EFC accepts a full or partial waiver of MWBE participation goals, the waiver request will be posted to EFC's website.

SIGNATURE

Electronic Signature of Contractor:

☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge.

Name: (Please Type):

Date:

Attachment 4 – Lobbying Certification



Environmental Facilities Corporation

**New York State Environmental Facilities Corporation
CERTIFICATION REGARDING LOBBYING
FOR
CONTRACTS, GRANTS, LOANS, AND
COOPERATIVE AGREEMENTS
40 CFR Part 34**

SRF Project No.: _____

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Signature: _____

Name: _____

Title: _____

Company Name: _____

Date: _____

Contract ID: _____

Attachment 5 – AIS Contractor’s Certification



Environmental Facilities Corporation

AIS CONTRACTOR CERTIFICATION
FOR CONSTRUCTION CONTRACTS PAID FOR WITH FUNDS FROM
THE NYS CLEAN WATER STATE REVOLVING FUND OR
THE NYS DRINKING WATER STATE REVOLVING FUND VIA THE
NYS ENVIRONMENTAL FACILITIES CORPORATION

Project Title: _____

Contractor's Name: _____

Contract ID: _____

SRF Project #: _____

SRF Recipient Name: _____

I certify that the iron and steel products that will be permanently incorporated into the public water system or wastewater treatment works project under this construction contract will have been produced in the United States, in accordance with the requirements of the US Environmental Protection Agency. I will also develop and maintain at the project location the necessary documentation to demonstrate that the iron and steel products incorporated into the project were produced in the United States, and make such documentation available to The NYS Environmental Facilities Corporation or their authorized representatives, upon request.

Signature: _____

Name (print): _____

Title: _____

Date: _____

Attachment 6 – AIS Manufacturer’s Certification

1. The following information is provided as a manufacturer's sample letter of **step** certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxx

2. Xxx

3. Xxx

Such process took place at the following location: _____

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

[Signed by company representative]

2. The following information is provided as a manufacturer's sample letter of certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxx

2. Xxx

3. Xxx

Such process took place at the following location: _____

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

[Signed by company representative]

Attachment 7 – Federal Payroll Form (WH-347)

PAYROLL
(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)



Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

Rev. Dec. 2008

OMB No.: 1235-0008
Expires: 02/28/2018

NAME OF CONTRACTOR				OR SUBCONTRACTOR				ADDRESS															
PAYROLL NO.				FOR WEEK ENDING				PROJECT AND LOCATION										PROJECT OR CONTRACT NO.					
(1)		(2)	(3)	(4) DAY AND DATE								(5)	(6)	(7)	(8) DEDUCTIONS					(9)			
NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER		NO. OF WITHHOLDING EXEMPTIONS	WORK CLASSIFICATION	OT.	ST.	HOURS WORKED EACH DAY								TOTAL HOURS	RATE OF PAY	GROSS AMOUNT EARNED	FICA	WITH- HOLDING TAX			OTHER	TOTAL DEDUCTIONS	NET WAGES PAID FOR WEEK
				O	S																		
				O	S																		
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

Date _____

I, _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by _____ on the _____
(Contractor or Subcontractor)
_____ ; that during the payroll period commencing on the _____
(Building or Work)
_____ day of _____, _____, and ending the _____ day of _____, _____,
all persons employed on said project have been paid the full weekly wages earned, that no rebates have
been or will be made either directly or indirectly to or on behalf of said
_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly
from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part
3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948,
63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are
correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the
applicable wage rates contained in any wage determination incorporated into the contract; that the classifications
set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship
program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and
Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered
with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:
(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ — in addition to the basic hourly wage rates paid to each laborer or mechanic listed in
the above referenced payroll, payments of fringe benefits as listed in the contract
have been or will be made to appropriate programs for the benefit of such employees,
except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ — Each laborer or mechanic listed in the above referenced payroll has been paid,
as indicated on the payroll, an amount not less than the sum of the applicable
basic hourly wage rate plus the amount of the required fringe benefits as listed
in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

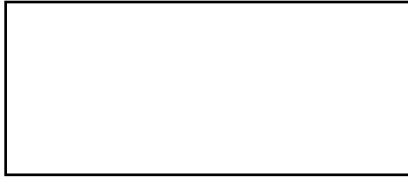
REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR
SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE
31 OF THE UNITED STATES CODE.

Attachment 8 – EEO Poster

Employee Contact
For EEO Compliance:



Equal Employment Opportunity is **THE LAW**

Private Employers, State and Local Governments, Educational Institutions, Employment Agencies and Labor Organizations

Applicants to and employees of most private employers, state and local governments, educational institutions, employment agencies and labor organizations are protected under Federal law from discrimination on the following bases:

RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN

Title VII of the Civil Rights Act of 1964, as amended, protects applicants and employees from discrimination in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment, on the basis of race, color, religion, sex (including pregnancy), or national origin. Religious discrimination includes failing to reasonably accommodate an employee's religious practices where the accommodation does not impose undue hardship.

DISABILITY

Title I and Title V of the Americans with Disabilities Act of 1990, as amended, protect qualified individuals from discrimination on the basis of disability in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. Disability discrimination includes not making reasonable accommodation to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or employee, barring undue hardship.

AGE

The Age Discrimination in Employment Act of 1967, as amended, protects applicants and employees 40 years of age or older from discrimination based on age in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment.

SEX (WAGES)

In addition to sex discrimination prohibited by Title VII of the Civil Rights Act, as amended, the Equal Pay Act of 1963, as amended, prohibits sex discrimination in the payment of wages to women and men performing substantially equal work, in jobs that require equal skill, effort, and responsibility, under similar working conditions, in the same establishment.

GENETICS

Title II of the Genetic Information Nondiscrimination Act of 2008 protects applicants and employees from discrimination based on genetic information in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. GINA also restricts employers' acquisition of genetic information and strictly limits disclosure of genetic information. Genetic information includes information about genetic tests of applicants, employees, or their family members; the manifestation of diseases or disorders in family members (family medical history); and requests for or receipt of genetic services by applicants, employees, or their family members.

RETALIATION

All of these Federal laws prohibit covered entities from retaliating against a person who files a charge of discrimination, participates in a discrimination proceeding, or otherwise opposes an unlawful employment practice.

WHAT TO DO IF YOU BELIEVE DISCRIMINATION HAS OCCURRED

There are strict time limits for filing charges of employment discrimination. To preserve the ability of EEOC to act on your behalf and to protect your right to file a private lawsuit, should you ultimately need to, you should contact EEOC promptly when discrimination is suspected:

The U.S. Equal Employment Opportunity Commission (EEOC), 1-800-669-4000 (toll-free) or 1-800-669-6820 (toll-free TTY number for individuals with hearing impairments). EEOC field office information is available at www.eeoc.gov or in most telephone directories in the U.S. Government or Federal Government section. Additional information about EEOC, including information about charge filing, is available at www.eeoc.gov.

Employers Holding Federal Contracts or Subcontracts

Applicants to and employees of companies with a Federal government contract or subcontract are protected under Federal law from discrimination on the following bases:

RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN

Executive Order 11246, as amended, prohibits job discrimination on the basis of race, color, religion, sex or national origin, and requires affirmative action to ensure equality of opportunity in all aspects of employment.

INDIVIDUALS WITH DISABILITIES

Section 503 of the Rehabilitation Act of 1973, as amended, protects qualified individuals from discrimination on the basis of disability in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. Disability discrimination includes not making reasonable accommodation to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or employee, barring undue hardship. Section 503 also requires that Federal contractors take affirmative action to employ and advance in employment qualified individuals with disabilities at all levels of employment, including the executive level.

DISABLED, RECENTLY SEPARATED, OTHER PROTECTED, AND ARMED FORCES SERVICE MEDAL VETERANS

The Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, 38 U.S.C. 4212, prohibits job discrimination and requires affirmative action to employ and advance in employment disabled veterans, recently separated veterans (within

three years of discharge or release from active duty), other protected veterans (veterans who served during a war or in a campaign or expedition for which a campaign badge has been authorized), and Armed Forces service medal veterans (veterans who, while on active duty, participated in a U.S. military operation for which an Armed Forces service medal was awarded).

RETALIATION

Retaliation is prohibited against a person who files a complaint of discrimination, participates in an OFCCP proceeding, or otherwise opposes discrimination under these Federal laws.

Any person who believes a contractor has violated its nondiscrimination or affirmative action obligations under the authorities above should contact immediately:

The Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, 200 Constitution Avenue, N.W., Washington, D.C. 20210, 1-800-397-6251 (toll-free) or (202) 693-1337 (TTY). OFCCP may also be contacted by e-mail at OFCCP-Public@dol.gov, or by calling an OFCCP regional or district office, listed in most telephone directories under U.S. Government, Department of Labor.

Programs or Activities Receiving Federal Financial Assistance

RACE, COLOR, NATIONAL ORIGIN, SEX

In addition to the protections of Title VII of the Civil Rights Act of 1964, as amended, Title VI of the Civil Rights Act of 1964, as amended, prohibits discrimination on the basis of race, color or national origin in programs or activities receiving Federal financial assistance. Employment discrimination is covered by Title VI if the primary objective of the financial assistance is provision of employment, or where employment discrimination causes or may cause discrimination in providing services under such programs. Title IX of the Education Amendments of 1972 prohibits employment discrimination on the basis of sex in educational programs or activities which receive Federal financial assistance.

INDIVIDUALS WITH DISABILITIES

Section 504 of the Rehabilitation Act of 1973, as amended, prohibits employment discrimination on the basis of disability in any program or activity which receives Federal financial assistance. Discrimination is prohibited in all aspects of employment against persons with disabilities who, with or without reasonable accommodation, can perform the essential functions of the job.

If you believe you have been discriminated against in a program of any institution which receives Federal financial assistance, you should immediately contact the Federal agency providing such assistance.

**TECHNICAL SPECIFICATIONS
AND DRAWINGS**

PROJECT MANUAL

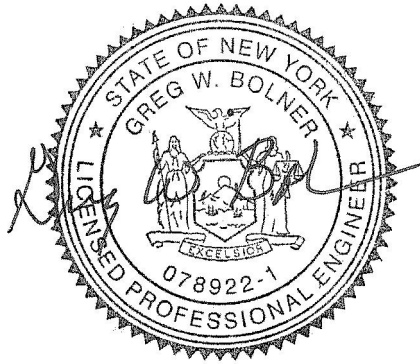
CITY OF POUGHKEEPSIE ENGINEERING DEPARTMENT

WATER POLLUTION CONTROL PLANT SECONDARY CLARIFIER IMPROVEMENTS

CITY OF POUGHKEEPSIE, NEW YORK

CLARK PATTERSON LEE PROJECT NO.: 12422.06

DOCUMENT DATE: NOVEMBER 1, 2020



DESIGN PROFESSIONAL'S CERTIFICATION

The undersigned certifies that, to the best of his or her knowledge, information and belief, that the "Design conforms to all applicable provisions of the Building Code of New York State, Energy Conservation Construction Code of New York State", and that the "Work will involve known or suspected ACBM, and will be done in accordance with Industrial Code Rule #56.

ARCHITECT/ENGINEER

CLARK PATTERSON LEE
50 FRONT STREET, SUITE 202
NEWBURGH, NEW YORK 12550
(845) 567-6700 - PH
(845) 567-9614 - FAX

OWNER

CITY OF POUGHKEEPSIE
ENGINEERING DEPARTMENT
62 CIVIC CENTER PLAZA, 2ND FLOOR
POUGHKEEPSIE, NEW YORK 12601
(845) 451-4074 - PH



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260000	GENERAL PROVISIONS FOR ELECTRICAL WORK
260519	LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
260526	GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
260529	HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
260533	RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS
260544	SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING
260553	IDENTIFICATION FOR ELECTRICAL SYSTEMS
262816	ENCLOSED SWITCHES AND CIRCUIT BREAKERS

DIVISION 40 – PROCESS

400523	PROCESS VALVES
400529	HANGERS AND SUPPORTS FOR PROCESS PIPING AND EQUIPMENT
402300	WATER AND WASTEWATER PROCESS PIPING

DIVISION 46 –WASTEWATER EQUIPMENT

464331	CIRCULAR SECONDARY CLARIFIER EQUIPMENT
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END OF SECTION 000110

SECTION 000115 – LIST OF DRAWINGS

GENERAL:

G-001 COVER SHEET

PROCESS:

PR-000 SECONDARY CLARIFIERS IMPROVEMENTS KEY PLAN

PR-100 SECONDARY CLARIFIERS IMPROVEMENTS DEMOLITION PLAN AND SECTION

PR-101 SECONDARY CLARIFIERS IMPROVEMENTS CONCRETE REHABILITATION PLAN

PR-200 SECONDARY CLARIFIERS IMPROVEMENTS NEW WORK PLAN AND SECTION

PR-700 SECONDARY CLARIFIERS IMPROVEMENTS MISCELLANEOUS PLANS AND DETAILS

PR-701 SECONDARY CLARIFIERS IMPROVEMENTS SCUM BAFFLE PLANS AND DETAILS

ELECTRICAL:

E-000 ELECTRICAL LEGEND AND ABBREVIATION SHEET

E-102 SECONDARY CLARIFIERS ELECTRICAL DEMOLITION PLAN

E-202 SECONDARY CLARIFIERS ELECTRICAL NEW WORK PLANS

END OF SECTION 000115

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Work restrictions.
5. Coordination with occupants
6. Specification and drawing conventions.

B. Related Sections:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.2 PROJECT INFORMATION

A. Project Identification:

City of Poughkeepsie Engineering Department
Water Pollution Control Plant
Water Pollution Control Plant Improvements

B. Project Location:

Water Pollution Control Plant
Administration Building
173 Kittridge Street
Poughkeepsie, NY 12601

C. Owner:

City of Poughkeepsie
62 Civic Center Plaza, 2nd Floor
Poughkeepsie, NY 12601

1. Owner's Representative: Greg Bolner, PE, City Engineer

D. Architect: Clark Patterson Lee, 50 Front Street, Suite 202, Newburgh, NY 12550

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of the Project is defined by the Contract Documents and consists of the following:

1. The Project includes the improvements of process equipment at the water pollution control plan.

Type of Contract:

2. Project will be constructed under a single prime contract.

1.4 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.5 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:30 a.m. to 3:30 p.m., Monday through Friday, except as otherwise indicated.
 - 1. Weekend Hours: Work may occur at any times, as approved.
 - 2. Hours for Utility Shutdowns: Only on weekends, holidays and as approved.
 - 3. Hours for Noisy Activity: For core drilling, powder-activated fasteners, and other disruptive activities, 3:30 p.m. to 11:00 p.m. or as otherwise approved.
 - 4. Special Events: The Owner will provide dates and times of special events that will restrict construction operations.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Architect not less than two days in advance of proposed utility interruptions.
 - 2. Obtain Architect's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Architect not less than two days in advance of proposed disruptive operations.
 - 2. Obtain Architect's written permission before proceeding with disruptive operations.
- E. Nonsmoking Building: Smoking is not permitted within the building.

1.6 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify the Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
 3. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
 4. Drawing Coordination: Requirements for materials and products identified on the Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:
- B. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
1. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 011000

SECTION 011216 - CONSTRUCTION SEQUENCING

PART 1 - GENERAL

1.1 CONTRACTOR'S RESPONSIBILITY

- A. The Contractor shall insure that all construction activities are performed as described in this section.
- B. Modification to the schedule as described in this Section shall be submitted to the Owner's Representative in writing prior to commencing the work. No work on any submitted revisions shall be performed without written approval from the Engineer.

1.2 RELATED SECTIONS

- A. Division 1, Section "Summary of Multiple Contracts" for a description of each contract.
- B. Division 1, Section "Project Management and Coordination" for a description of coordination requirements.

1.3 FACILITY OPERATIONS

- A. Perform work continuously during critical connections and changeovers, defined as that work which may negatively impact the facility's ability to treat wastewater. The Owner will try to accommodate the Contractor in regard to the timing of critical connections and changeovers. However, the Owner reserves the right to restrict the times that connections and changeovers can occur so that the operation of the system is least affected. The Contractor shall adhere to any schedule restrictions at no additional compensation from the Owner.
- B. Do not close lines, open or close valves, or perform work which will affect the operation of the existing facility, except as authorized by the Contract Documents and after the Owner has had 72 hours advanced notice. Operation of valves and electrical disconnects shall be only be done under the observation of the Owner's representative.
- C. The Contractor shall install bypass facilities, flow shut-off procedures and temporary connections needed to keep the facility online for the duration that is needed.
- D. Maintain safe paths for facility operators to perform their necessary tasks throughout construction.
- E. Contractor shall utilize lockout/tagout equipment on all electrical components that are to be removed or relocated, when needed, to minimize the risk of accidents and/or damage.
- F. It is expected that temporary relocation of existing utilities will be needed
 - 1. Perform such work in a manner that minimizes downtime of the utility.
 - 2. Perform relocations using new materials that match existing materials if at all possible. The Contractor shall be responsible to install suitable couplings to join dissimilar materials.

1.4 ACCEPTANCE

- A. The Owner shall determine acceptability of construction actions that possess potential treatment plant impacts.
- B. Acceptance shall be based on factors such as:
 - 1. Impact with regard to providing wastewater treatment
 - 2. Operator safety
 - 3. Interference with necessary plant operation and maintenance.

1.5 SHUTDOWNS

- A. Shutdowns of the existing facility or portions of the existing facility shall be requested in writing to the Owner. The request shall be submitted at least 72 hours in advance and will be reviewed for impacts and possible alternatives prior to acceptance.
- B. Unless otherwise noted in this Section, shutdowns shall commence only after approval of the Owner and shall only be approved for short durations, not to exceed 4 hours, during off peak treatment periods. Critical connections and change overs will most likely be restricted to periods of least flow, i.e., 11 PM to 5 AM.

1.6 FACILITY ENVIRONMENT

- A. The Contractor shall maintain a safe working environment for plant personnel to perform necessary tasks. The Owner shall be responsible for hard hats, vests, and other personal protective gear only for Owner's facility operations personnel.
- B. The Owner shall notify the Contractor of any unsafe conditions whenever noted. The Contractor shall immediately address the Owner's comments and correct any unsafe conditions.

PART 2 - PRELIMINARY CONSTRUCTION SEQUENCE

- A. The sequence described in this part is intended as a general guide so as not to excessively limit means and methods, while at the same time allowing for the existing facility to maximize its ability to remain operational and meet SPDES permit requirements. The Contractor shall be responsible for submitting a proposed construction schedule to the Owner's Representative for approval prior to performing work.
- B. Electrical work shall be completed in accordance with this sequence to prevent damage to work completed by the General Contractor or to provide for system startup, whichever occurs first. Coordination of the work shall be performed in accordance with Division 1, Section "Summary of Multiple Contracts".
- C. The Contractor shall provide submittals giving priority to the critical components, including treatment components and pumps, and shall prioritize obtaining shop drawing approval for critical components in order to acquire any components requiring a long lead time for delivery.
- D. The preliminary sequence is as follows:
 - 1. Prior to the Shop Drawing Submittal of the new Secondary Clarifiers equipment, each Secondary Clarifier will be allowed to be drained and dewatered by the General Contractor for one day in order obtain access for measurements. One clarifier will always be in full working order.
 - 2. Secondary clarifier replacement and concrete rehabilitation shall occur on one clarifier at a time, keeping the other clarifier in full service. The allowable downtime for each clarifier replacement shall be 30 days.
 - 3. Other work not specifically mentioned including miscellaneous electrical work can be performed within logical sequence of work

PART 3 - EXECUTION (NOT USED)

END OF SECTION 011216

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.
- B. Related Sections include the following:
 - 1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
 - 2. Section 014000 "Quality Requirements" for field testing by an independent testing agency.
 - 3. Division 01 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
 - 4. Division 03 Section "Concrete Rehabilitation" for procedures for measurement and payment for authorized epoxy crack injection.
 - 5. Division 03 Section "Concrete Rehabilitation" for procedures for measurement and payment for authorized concrete repair.
 - 6. Division 03 Section "Concrete Rehabilitation" for procedures for measurement and payment for concrete expansion joint repair.

1.3 DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price.
- C. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- D. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- E. List of Unit Prices: A list of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF GENERAL CONTRACT UNIT PRICES

A. Unit Price G1 – Epoxy Crack Injection:

1. Description: Epoxy crack injection according to Division 3 Section “Concrete Rehabilitation”.
2. Unit of Measurement: Linear feet of crack injected, measured after preparation.

B. Unit Price G2 – Concrete Repair:

1. Description: Concrete repair according to Division 3 Section “Concrete Rehabilitation”.
2. Unit of Measurement: Cubic foot of concrete repaired, measured after preparation.

C. Unit Price G3 – Concrete Expansion Joint Repair:

1. Description: Concrete expansion joint repair according to Division 3 Section “Concrete Rehabilitation”.
2. Unit of Measurement: Linear feet of joint repaired, measured after preparation.

END OF SECTION 012200

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections:
 - 1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.2 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on the Information Bulletin bound in the Project Forms Section of Project Manual.

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 10 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times,

and activity relationship. Use available total float before requesting an extension of the Contract Time.

6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.4 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: Refer to Division 01 Section "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- B. Unit Price Adjustment: Refer to Division 01 Section "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit price work.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714.
- B. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- C. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections:
 - 1. Division 01 Section "Allowances" for procedural requirements governing the handling and processing of allowances.
 - 2. Division 01 Section "Unit Prices" for administrative requirements governing the use of unit prices.
 - 3. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 4. Division 01 Section "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.
 - 5. Division 01 Section "Submittal Procedures" for administrative requirements governing the preparation and submittal of the submittal schedule.

1.2 SCHEDULE OF VALUES

- A. Coordination: Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - 1. Application for Payment forms with continuation sheets.
 - 2. Submittal schedule.
 - 3. Submit the schedule of values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the schedule of values.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

- 1) Labor.
 - 2) Materials.
 - 3) Equipment.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts where appropriate.
4. The following line items must be included on the continuation sheet.
 - a. Project Bonds and Insurances
 - b. Mobilization
 - c. Shop Drawings
 - d. Project Meetings
 - e. Temporary Heat (where applicable)
 - f. Progress Cleaning
 - g. Punch List
 - h. Final Cleaning
 - i. Close Out documents and Warranties
5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
6. Submit draft of AIA Document G703 Continuation Sheets.
7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: Submit Application for Payment to Architect by the 25th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
 1. Submit draft copy of Application for Payment five days prior to due date for review by Architect. (Work to be projected out to the end of the pay period).
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. The OWNER shall retain five percent (5%) of the amount due on each Application for both the work completed and materials stored. The OWNER reserves the right to retain a greater percentage in the event the CONTRACTOR fails to make satisfactory progress or in the event there is other specific cause for greater withholding.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
- F. Provide copies of payrolls (including subcontractors) that are signed and notarized, documenting compliance with prevailing wage requirements.
1. Per NYS Workman's Compensation Board copies of all payroll records for all out of state contractors shall be retained on the worksite for inspection is required by the New York State Dept. of Labor.
- G. Transmittal: Submit four signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- I. Initial Application for Payment: Administrative actions and submittals that must precede submittal of first Application for Payment include the following:
1. List of Substitutions
 2. Contract or Notice to Proceed.
 3. Performance and Payment bonds.
 4. Liability, Auto, and Umbrella Insurance

5. Worker Compensation certificates
- J. Initial Application for Payment: Administrative actions and submittals that must coincide with submittal of first Application for Payment include the following:
1. Schedule of values.
 2. List of subcontractors
 3. Contractors Safety Program
 4. Contractor's construction schedule (preliminary if not final).
 5. Submittal schedule (preliminary if not final).
- a. First Payment **WILL NOT** be processed without a Submittal Schedule.
6. Emergency Contacts List
 7. Certified Payroll
 8. Schedule of unit prices.
 9. List of Contractor's staff assignments.
 10. List of Contractor's principal consultants.
 11. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 12. Report of preconstruction conference.
- K. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Administrative actions and submittals that shall precede or coincide with this application include:
 - a. Occupancy permits and similar approvals
 - b. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion
 - c. Record Drawings and Specifications
 - d. Operations and Maintenance Manuals
 - e. Maintenance Instructions and Training
 - f. Start-up performance reports
 - g. Test/adjust/balance records
 - h. Warranties (guarantees) and maintenance agreements
 - i. Final cleaning
 - j. Change-over information related to Owner's occupancy, use, operation and maintenance
 - k. Application for reduction of retainage and consent of surety
 - l. Advice on shifting insurance coverages
 2. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 3. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- L. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Ensure that incomplete Work is not accepted and will be completed without undue delay.

2. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
3. Evidence of completion of Project closeout requirements.
4. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
5. Updated final statement, accounting for final changes to the Contract Sum.
6. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
7. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
8. AIA Document G707, "Consent of Surety to Final Payment."
9. Evidence that claims have been settled.
10. Final liquidated damages settlement statement.
11. Removal of temporary facilities and services
12. Removal of surplus materials, rubbish, and similar elements

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General project coordination procedures.
 - 2. Administrative and supervisory personnel.
 - 3. Coordination drawings.
 - 4. Requests for Information (RFIs).
 - 5. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Sections:
 - 1. Division 01 Section "Multiple Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
 - 2. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
 - 3. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 4. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.2 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information from each other during construction.

1.3 INFORMATIONAL SUBMITTALS

- A. Subcontract list is required by AIA Document A201 to be submitted as soon as practical prior to award of the Contract. Coordinate with submittal requirements for subcontract list in Procurement Requirements and Contracting Requirements if any.
- B. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use form provided in specification section 006000 of the Project Manual. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- C. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names,

addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, on Project Web site, and by each temporary telephone. Keep list current at all times.

1.4 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f. Indicate required installation sequences.
 - g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
 2. Plenum Space: Indicate sub-framing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
 3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire protection, fire alarm, and electrical equipment.
 4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door

- floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical Work: Show the following:
 - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
 7. Electrical Work: Show the following:
 - a. Runs of vertical and horizontal conduit 1-1/4 inch diameter and larger.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire alarm locations.
 - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
 8. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility. If the Architect determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Architect will so inform the Contractor, who shall make changes as directed and resubmit.
 9. Coordination Drawing Prints: Prepare coordination drawing prints in accordance with requirements of Division 01 Section "Submittal Procedures."

1.6 KEY PERSONNEL

- A. Key Personnel Names: Within 5 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 1. Do not submit an RFI if information is readily available in the contract documents. Verify by contacting and questioning the Architect prior to submitting an RFI.
 2. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 3. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Form provided in specification section 006000 of the Project Manual.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

1.8 PROJECT WEB SITE

- A. Use Architect's Project Web site for purposes of hosting and managing project communication and documentation until Final Completion. Project Web site shall include the following functions:
1. Project directory.
 2. Project correspondence.
 3. Meeting minutes.
 4. Contract modifications forms and logs.
 5. RFI forms and logs.
 6. Task and issue management.
 7. Photo documentation.
 8. Schedule and calendar management.
 9. Submittals forms and logs.
 10. Payment application forms.
 11. Drawing and specification document hosting, viewing, and updating.
 12. Online document collaboration.
 13. Reminder and tracking functions.
 14. Archiving functions.

1.9 PROJECT MEETINGS

- A. General: Architect will schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner within five days of the meeting.
- B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
1. Conduct the conference to review responsibilities and personnel assignments.
 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Procedures for processing field decisions and Change Orders.

- g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of record documents.
 - m. Use of the premises and existing building.
 - n. Work restrictions.
 - o. Working hours.
 - p. Owner's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.
 - r. Procedures for moisture and mold control.
 - s. Procedures for disruptions and shutdowns.
 - t. Construction waste management and recycling.
 - u. Parking availability.
 - v. Office, work, and storage areas.
 - w. Equipment deliveries and priorities.
 - x. First aid.
 - y. Security.
 - z. Progress cleaning.
 - 4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written recommendations.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.

- r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
 - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Architect will conduct progress meetings at weekly regular intervals.
- 1. Coordinate dates of meetings with preparation of payment requests.
 - 2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Status of documentation.
 - 5) Deliveries.
 - 6) Off-site fabrication.
 - 7) Access.
 - 8) Site utilization.
 - 9) Temporary facilities and controls.
 - 10) Progress cleaning.
 - 11) Quality and work standards.
 - 12) Status of correction of deficient items.

- 13) Field observations.
 - 14) Status of RFIs.
 - 15) Status of proposal requests.
 - 16) Pending changes.
 - 17) Status of Change Orders.
 - 18) Documentation of information for payment requests.
 4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- E. Project Closeout Conference: Architect will conduct a Project closeout conference, at a time convenient to Owner and Architect, but no later than 60 days prior to the scheduled date of Substantial Completion.
 1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - b. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - c. Preparation of Contractor's punch list.
 - d. Responsibility for removing temporary facilities and controls.
 - e. Requirements for preparing operations and maintenance data.
 - f. Requirements for the Submittal of written warranties.
 - g. Requirements for demonstration and training.
 - h. Requirements for submission of record documents, record specifications and record submittals.
 - i. Owner's partial occupancy requirements.
 - j. Coordination of separate contracts for owner related work prior to occupancy.
 - k. Installation of Owner's furniture, fixtures, and equipment.
 - l. Responsibility and schedule for final cleaning
 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
1. Start-up construction schedule.
 2. Contractor's construction schedule.
 3. Daily construction reports.
 4. Material location reports.
 5. Field condition reports.
 6. Special reports.
- B. Related Sections:
1. Division 00 Section "Preliminary Schedules" for anticipated construction schedule provided for Bidding Proposals.
 2. Division 01 Section "Multiple Contract Summary" for preparing a combined Contractor's Construction Schedule.
 3. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
 4. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 2. Predecessor Activity: An activity that precedes another activity in the network.
 3. Successor Activity: An activity that follows another activity in the network.

1.3 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
1. PDF electronic file
- B. Start-up construction schedule.
- C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
- D. Daily Construction Reports: Submit at monthly intervals.
- E. Field Condition Reports: Submit at time of discovery of differing conditions.
- F. Special Reports: Submit at time of unusual event.

1.4 QUALITY ASSURANCE

- A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
1. Review software limitations and content and format for reports.
 2. Verify availability of qualified personnel needed to develop and update schedule.
 3. Discuss constraints, including work stages and interim milestones.
 4. Review delivery dates for Owner-furnished products.
 5. Review schedule for work of Owner's separate contracts.
 6. Review time required for review of submittals and resubmittals.
 7. Review requirements for tests and inspections by independent testing and inspecting agencies.
 8. Review time required for completion and startup procedures.
 9. Review and finalize list of construction activities to be included in schedule.
 10. Review submittal requirements and procedures.
 11. Review procedures for updating schedule.

1.5 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
1. Secure time commitments for performing critical elements of the Work from entities involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of final completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
 4. Startup and Testing Time: Include not less than 15 days for startup and testing.

5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
 6. Punch List and Final Completion: Include not more than 30 days for punch list and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
 5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
 6. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
 7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Mockups.
 - e. Fabrication.
 - f. Sample testing.
 - g. Deliveries.
 - h. Installation.
 - i. Tests and inspections.
 - j. Adjusting.
 - k. Curing.
 - l. Startup and placement into final use and operation.
 8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Structural completion.
 - b. Permanent space enclosure.

- c. Completion of mechanical installation.
 - d. Completion of electrical installation.
 - e. Substantial Completion.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
- E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.
 - 1. See Division 01 "Payment Procedures" for cost reporting and payment procedures.
- F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
 - 1. Unresolved issues.
 - 2. Unanswered RFIs.
 - 3. Rejected or unreturned submittals.
 - 4. Notations on returned submittals.
- G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

2.2 START-UP CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit start-up horizontal bar-chart-type construction schedule within seven days of date established for the Notice to Proceed.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.3 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 - 1. List of subcontractors at Project site.
 - 2. List of separate contractors at Project site.
 - 3. Approximate count of personnel at Project site.
 - 4. Equipment at Project site.
 - 5. Material deliveries.
 - 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 - 7. Accidents.
 - 8. Meetings and significant decisions.
 - 9. Unusual events (refer to special reports).
 - 10. Stoppages, delays, shortages, and losses.
 - 11. Meter readings and similar recordings.
 - 12. Emergency procedures.

13. Orders and requests of authorities having jurisdiction.
 14. Change Orders received and implemented.
 15. Construction Change Directives received and implemented.
 16. Services connected and disconnected.
 17. Equipment or system tests and startups.
 18. Partial completions and occupancies.
 19. Substantial Completions authorized.
- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.4 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. This specification describes the procedures for submission of submittals and shop drawings using Newforma Info Exchange.
 - 1. The Contractor will be required to use the Newforma Info Exchange for the transfer of Submittals, Shop Drawings and RFI's. There will be no exceptions to this requirement. The contractor will be given a login and password free of charge. For more information follow the procedure below.
 - a. Information and instructions for use are available for review by the contractor by contacting CPL. The Contractor is to provide an email address for the file to be sent. A PDF file will be emailed to the requesting contractor.
- C. Related Requirements:
 - 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
 - 2. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
 - 3. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
 - 4. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
 - 5. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
 - 6. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 7. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 8. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.3 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.4 SUBMITTAL GENERAL ADMINISTRATIVE REQUIREMENTS

- A. The Contractor shall prepare a Submittal Log containing the information required to be submitted under the Submittal article from each respective Specification Section. With each item listed the Contractor shall provide anticipated dates for submission to the Architect. The Architect will review and accept or request that corrections be made for subsequent acceptance. This acceptance will constitute an approval for the submittal, shop drawings and sample submissions to commence. **No Submittals or Shop Drawings will be reviewed by the Architect until an approved Submittal Schedule is in place.**
- B. The contractor shall prepare expected submittals in Newforma that correspond to all submittals listed on the submittal schedule at the time of submission of the submittal log. These expected submittals are to follow the naming conventions laid out in section “1.5 submittal schedule” and “1.6 submittal identification”
- C. The Contractor is responsible for all costs for creating electronic files for the submittal process. The Architect will not provide this service.
 - 1. The Submittal Cover Sheet located in Specification Section 006000 Project Forms shall be used for all Submittals.
 - a. An electronic form of the submittal cover is available from the Architect.
 - 2. The Submittal Cover sheet when scanned to a .PDF shall be the first page viewed in the individual file.
 - a. Each product submitted within a specification section shall have a Submittal Cover sheet attached. Combined submittals with one cover page will not be accepted
 - b. Each Submittal Cover sheet shall be filled in completely. **Files that are sent with the Submittal Cover Sheet missing or not filled in correctly will not be reviewed.** The Architect will send a notice that the submittal is missing information. If the Contractor fails to correct or provide the proper submittal within 15 days, notice will be provided, and the submittal will be REJECTED.

3. The Contractor(s) will be provided with a link to upload files to the **Newforma Info Exchange**. The site address and a “log in” will be provided to the Contractor(s) free of charge.
 4. A read only Record Submittal Log and RFI Log will be available from the Newforma Info Exchange for the Contractors reference in checking the status of the submittals and shop drawings.
- D. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittals of different types of submittals from related section for parts of the work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received. Delays associated with the above are the not the Architects responsibility and rests solely with the Contractor.
- E. Architect's Digital Data Files: For Projects where Project Building Information Modeling Protocol is NOT executed.
1. The Architect will provide digital PDF's of Contract Drawings for the purpose of producing project record drawings for a Handling Fee of \$150 per drawing file.
 - a. Contract documents are graphic representations of approximate locations of materials. Therefore, information contained within these files should not be assumed to be accurate and users of the Files accept full responsibility for verifying the accuracy and completeness of the Files with field conditions and the contract documents.
 2. Document Transfer Agreement - For Projects where Architect's work files are not a deliverable: The Contractor shall execute an Electronic Document Transfer Agreement for all electronic transfers of files, other than PDFs. The contractor must provide acknowledgement, accept the information regarding drawings, ownership and Limitations of Liability. Agreement is found with Project Forms.
 - a. The following plot files will by furnished for each appropriate discipline:
 - 1) Floor plans.
 - 2) Reflected ceiling plans.
- F. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required

for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

- a. Submit a preliminary if not final Submittal Schedule for approval a minimum of 15 days after award of contract. **Failure to submit a submittal schedule within the required time frame will result in the refusal by the Architect to review any submittals. Delays associated with failure to receive the Submittal Schedule are the not the Architects responsibly and rest solely with the Contractor.**

G. The information is required to be submitted under the Submittal article from each respective Specification Section. With each item listed the Contractor shall provide anticipated dates for submission to the Architect. The Architect will review and accept or request that corrections be made for subsequent acceptance. This acceptance will constitute a review for the submittal, shop drawings and sample submissions may commence. **No Submittals or Shop Drawings will be reviewed by the Architect until an approved Submittal Schedule is in place.**

1. The Submittal Schedule shall be coordinated with the overall Project Schedule to ensure that submittals are submitted and reviewed so as not to delay the Project Schedule.
2. The Architect will not be responsible for ensuring that all required Shop Drawings, Product Data, Samples or similar submittals that are required to be submitted and reviewed under the Contract Documents are submitted by the Contractor. Submissions of Shop Drawings, Product Data, Samples or similar submittals are the Contractor's sole responsibility. Delays associated with the contractor's failure to provide the required submittals are the Contractors responsibility.
3. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
4. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 30 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
5. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.
6. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal Category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Architect's final release or approval.

1.5 SUBMITTAL IDENTIFICATION

- A. Submittal Cover Sheet: Attach one cover sheet for each product, shop drawing or sample. **DO NOT** combine submittals together with one cover sheet for multiple items. They will not be reviewed.

- B. Submittal Information: Include the following information in each submittal. Use the submittal cover form found in specification section 060000 Project Forms. An electronic form can be sent to the contractor upon request
1. Contractor, Address, Phone/fax and or Email
 2. Contractors Submittal Number.
 3. Architects Project Number.
 4. Project Name (if not filled in by the Architect)
 5. Type of submittal being sent (select box)
 6. Product Identification including the following: Provide one submittal cover sheet for each product within a specification section
 - a. Specification Section Number
 - b. Contract Drawing Number
 - c. Product Name
 - d. Specification Reference: Part/Paragraph
 - e. Detail Reference
 - f. Manufacturer
 7. Contractors Approval: The contractor must acknowledge that they have reviewed the submittal for conformance with the Contract Documents and must sign and date the approval.
 8. Deviation from the Contract Documents: Where the submittal may not meet all of the requirements of the specified item. The contractor must indicate how the submitted item differs from the specified item.
 9. Contractor Comments: Any additional comments by the contractor should be indicated in this space. (Provide an attachment sheet for any other information required that will not fit on the cover sheet.)
- C. Deviations and Additional Information: On each individual submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information, revisions, line by line comparison and other information requested by Architect. Indicate by highlighting on each submittal or noting on attached separate sheet. Identify options requiring selection by Architect.
- D. File Naming (for uploading): Each submittal or shop drawing file uploaded to the project on the **Newforma Info Exchange**, shall have in the file name, the specification section number followed by the submittal number, the submittal abbreviation and the specification section name. For re-submissions an R1 would be added following submittal number. The file name must include the following information:

Example:

081416 001 PD Flush Wood Doors

Specification Section Submittal no. Submittal Abbr. Specification Name

File to read: 081416-001 PD - Flush Wood Doors

Re-submission File to Read: 081416-001-R1-Flush Wood Doors

Submittal Abbreviations required to be used in the file name on submittals are as follows:

CD	Coordination Drawings
CERT	Certification(s)
CLC	Calculations
DD	Design Data
EJ	Engineer's Judgement
LEED	LEED or PD/LEED
O&M	Operations and Maintenance Manuals
PD	Product Data
PHOTO	Photo
QD	Qualification Data
RPT	Report
SAMP	Sample
SCH	Schedule
SEL	Make A Selection
SD	Shop Drawing(s)
STDY	Study
TR	Test Results
WAR	Warranty

- E. When uploading submittals or RFI's to the Newforma Info Exchange, complete the online transmittal. The information required is derived from the contractor's submittal cover sheet or RFI. Instructions using the Newforma Info Exchange are available from CPL. These instructions can be emailed to the contractor.

1.6 SUBMITTAL DATA AND TESTING REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment. Each product within a specification section shall have a separate submittal cover.
1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable. Send full submittals for each product. **Partial submittals will not be reviewed until all required submittal information is received. The architect will not be responsible for project delays due to the contractor's failure to submit the required submittal information in a complete package.**
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.

- d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.
- B. Shop Drawings: Prepare project-specific information for each shop drawing. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data [unless submittal based on Architect's digital data drawing files is otherwise permitted].
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Description any conflicts with other trades.
 - h. Seal and signature of professional engineer if specified.
- C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.
 - 1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package. If samples are delivered with product data, only the samples will be reviewed. The Product Data must be uploaded to the Newforma Info Exchange. A duplicate submittal cover sheet is to be uploaded to the Newforma Info exchange as a record of sample delivery.
 - a. The Product Data is to be loaded concurrent with the delivery of samples. Samples may be delivered/given to the Architect. In the remarks column of the transmittal place "given to the Architect"
 - 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.

- e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 - g. In addition to all hard copy and physical samples submitted, duplicate digital submittal is to be produced for review, record and tracking purposes through Newforma Info Exchange. Include same information as above as well as a high resolution, color, digital image of all samples with labeled information clearly visible for each physical sample.
- 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
- 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- D. Information requirements for each submittal: Where submittal is requiring Schedules, Product Data, Qualification Data, Design Data, Certificates and Tests use the following protocol.
 - 1. Schedules: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

2. Product Data. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 - a. Manufacturer and product name, and model number if applicable.
 - b. Number and name of room or space.
 - c. Location within room or space.
3. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
4. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
5. Certificates:
 - a. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 - b. Insert definition of Contractor certificates here if required by individual Specification Sections. See the Evaluations.
 - c. Installer Certificates: Submit written statements on manufacturer's letterhead, certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 - d. Manufacturer Certificates: Submit written statements on manufacturer's letterhead, certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 - e. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.
 - f. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.
 - g. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.
 - h. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 - i. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 - j. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
 - k. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
6. Test and Research Reports:
 - a. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of

- compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
- b. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
 - c. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
 - d. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
 - e. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
 - f. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1) Name of evaluation organization.
 - 2) Date of evaluation.
 - 3) Time period when report is in effect.
 - 4) Product and manufacturers' names.
 - 5) Description of product.
 - 6) Test procedures and results.
 - 7) Limitations of use.
- E. Submit the following submittals: Within 15 days of contract award.
- 1. Submittal Schedule including dates of anticipated review and approval.
 - a. **No submittals will be reviewed without an approved Submittal Schedule in place.**
 - 2. Subcontractor List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - a. Name, address, telephone number and email address of entities performing subcontract or supplying products.
 - b. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
 - 4. Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- F. Submit with in the first 30 days after Contract Award

1. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014329 "Special Inspections."
 2. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
 3. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- G. Submit Field Test Reports during construction within 15 days of the testing date and as follows:
1. Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- H. Submit a minimum 30 days prior to Project Closeout:
1. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
 2. Maintenance Data: Comply with requirements specified in Division 01 Section 017823 "Operation and Maintenance Data."

1.7 SUBMITTAL PROCESSING

- A. Processing Time: Allow time for submittal review, including time for re-submittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.
- B. The architect will not be responsible for project delays due to the contractor's failure to submit the required submittal information in time to allow for review based on the stipulated review time and to meet the project schedule.
- C. Initial Review: Allow 15 Calendar days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
- D. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
- E. Re-submittal Review: Allow 10 Calendar days for review of each re-submittal.
- F. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 Calendar days for initial review of each submittal.
- G. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 Calendar days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
- H. Where submittal are required to be approved that are part of an assembly or for items such as finishes where color selections are required. The submittal will be retained until all of the information related to these systems and color selections is provided and accepted.

- I. Products with multiple submittals may be held until all necessary information has been submitted for architect to make a complete review. Submittals dependent on coordinating information from related or dependent products; or products with critical interface with other products may be held until all information is submitted for architect to make a complete review and coordinate all required information. (example door frames will not be reviewed without door hardware)
- J. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with reviewed notation from Architect's action stamp.
- K. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

1.8 SUBMITTAL PROCEDURES

- A. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- B. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- C. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- D. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- E. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- F. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- G. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- H. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- I. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
 2. Date of evaluation.
 3. Time period when report is in effect.
 4. Product and manufacturers' names.
 5. Description of product.
 6. Test procedures and results.
 7. Limitations of use.
- J. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."
- K. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- L. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- M. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- N. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- O. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

1.9 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Contractors Approval: Provide Contractor's approval signature and date on the Submittal Cover sheet certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1.10 ARCHITECT'S ACTION

- A. Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will respond to each submittal indicating one of the following actions required:
1. **No Exceptions Taken:** Architect takes no exception to the submittal. This part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 2. **Furnish as Corrected:** No exceptions taken except what is identified by the Architect. The part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents;

final acceptance will depend on that compliance. Furnish any additional related information as requested.

3. **Revise and Re-Submit:** Revise the submittal based on the Architects comments and resubmit the submittal. Do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked “Revise and Resubmit” to be used at the Project Site, or elsewhere where Work is in progress.
 4. **Rejected:** The submittal is rejected. See Architects comments on why submittal was rejected.
 - a. Submittal has not been reviewed by the Contractor and so noted.
 - b. Submittal has been prepared without due regard for information called for or logically implied by the Contract Documents.
 - c. Information is not sufficiently complete or accurate to verify that work represented is in accordance with the Contract Documents.
 - d. Do not permit submittals marked “Rejected” to be used at the Project Site, or elsewhere where Work is in progress.
 5. **No Action Taken:** The submittal is not required and will not be reviewed.
- B. Submittals by Newforma Info Exchange: Architect will indicate, on Newforma Info Exchange, the appropriate action.
- C. Informational Submittals: Architect will review each submittal and will not return it or will return it if it does not comply with requirements. The Architects action will be noted in the Newforma Info Exchange.
- D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect. The Architects action will be noted in the Newforma Info Exchange and noted as a **partial review** until a full submittal can be received.
- E. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for re-submittal without review.
- F. Submittals not required by the Contract Documents will not be reviewed and will receive no action.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections:
 - 1. Division 01 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
 - 2. Division 01 Section "Code-Required Special Inspections and Procedures" for tests and inspections ordered by the Owner.
 - 3. Divisions 02 through 49 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.
- I. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 ACTION SUBMITTALS

- A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
 - 1. Indicate manufacturer and model number of individual components.
 - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.5 INFORMATIONAL SUBMITTALS

- A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of technical representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 4. Statement whether conditions, products, and installation will affect warranty.
 5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.

- b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, mockups; do not reuse products on Project.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.8 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
 6. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 6. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
 2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Architect.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 KEY DEFINITIONS

General: Basic Contract definitions are included in the Conditions of the Contract.

"Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

"Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

"Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

"Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

"Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

"Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

"Provide": Furnish and install, complete and ready for the intended use.

"Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 DEFINITIONS

Approved Agency: An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved according to the requirements established in this Section and as required by the Code Official having jurisdiction over this project.

Architect: Other terms including "Architect/Engineer" and "Engineer" have the same meaning as "Architect".

Company Field Adviser: An employee of the Company which lists and markets the primary components of the system under the name who is certified in writing by the Company to be technically qualified in design, installation, and servicing of the required products or an employee of an organization certified by the foregoing Company to be technically qualified in design, installation, and servicing of the required products. Personnel involved solely in sales do not qualify.

Concealed Location: A location that cannot be accessed without damaging permanent parts of the building structure or finish surface. Spaces above, below or behind readily removable panels or doors shall not be considered as concealed.

Concealed Piping: Piping that is located in a concealed location. (See "concealed location".)

Connect: A term contraction and unless otherwise specifically noted is to mean “ The labor and materials necessary to join or attach equipment, materials or systems to perform the functions intended”.

Drain: Any pipe that carries wastewater or water-borne wastes in a building drainage system.

Drainage Fittings: Type of fitting or fittings utilized in the drainage system. Drainage fittings are similar to cast-iron fittings, except that instead of having a bell and spigot, drainage fittings are recessed and tapped to eliminate ridges on the inside of the installed pipe.

Drainage System: Piping within a public or private premise that conveys sewage, rainwater or other liquid wastes to a point of disposal. A drainage system does not include the mains of a public sewer system or a private or public sewage treatment or disposal plant.

1. **Building Gravity:** A drainage system that drains by gravity into the building sewer.
2. **Sanitary:** A drainage system that carries sewage and excludes storm, surface and ground water.
3. **Storm:** A drainage system that carries rainwater, surface water, condensate, cooling water or similar liquid wastes.

Duct: A tube or conduit utilized for conveying air. The air passages of self-contained systems are not to be construed as air ducts.

Duct System: A continuous passageway for the transmission of air that, in addition to ducts, includes duct fittings, dampers, plenums, fans and accessory air-handling equipment and appliances.

Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

Headroom: Minimum clearance between the floor and the underside of the point of lowest installed mechanical construction above. In case of stairways and walkways, the minimum clearance between the step or surface of the walkway and the lowest installed mechanical construction above the stairway or the walkway.

Include: When used in any form other than “inclusive”, is non-limiting and is not intended to mean “all-inclusive.”

Indicated: Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

Inspection Certificate: Identification applied on a product by an approved agency containing the name of the manufacturer, the function and performance characteristics, and the name and identification of an approved agency that indicates that the product or material has been inspected and evaluated by an approved agency.

Installer: An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.

4. **Trades:** Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
5. **Assigning Specialists:** Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in

those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.

6. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

Label: An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of an approved agency and that indicates that the representative sample of the product or material has been tested and evaluated by an approved agency.

Location:

7. **Damp Location:** Partially protected locations under canopies, marquees, roofed open porches and like locations, and interior locations subject to moderate degrees of moisture, such as some basements, some barns and some cold-storage warehouses.
8. **Dry Location:** A location not normally subject to dampness or wetness. A location classified as dry may be temporarily subject to dampness or wetness, as in the case of a building under construction.
9. **Wet Location:** Installations underground or in concrete slabs or masonry in direct contact with the earth and locations subject to saturation with water or other liquids, such as vehicle-washing areas, and locations exposed to weather and unprotected.

Manufacturer's Designation: Identification applied on a product by the manufacturer indicating that a product or material complies with a specified standard or set of rules (see also "Inspection Certificate," "Label" and "Mark").

Mark: An identification applied on a product by the manufacturer indicating the name of the manufacturer and the function of a product or material (see also "Inspection Certificate," "Label" and "Manufacturer's Designation").

Mechanical: Other terms including "HVAC", "Plumbing", "Sprinkler", "Laboratory Equipment", "Food Service Equipment", "Laundry Equipment", and "Refrigeration" have the same meaning as "Mechanical".

Owner: City of Poughkeepsie, 62 Civic Center Plaza, 2nd Floor, Poughkeepsie, NY 12601

Piping: This term includes pipe, tube and appurtenant fittings, flanges, valves, traps, hangers and supports.

Piping, Concealed: Piping built into construction and not accessible without removal of construction Work such as masonry, plaster or other finish material, and piping installed in floors, furred spaces, suspended ceilings, non-walk-in tunnels, conduits, and behind removable panels and cabinet doors.

Piping, Distribution: Domestic water supply piping, starting with a connection to service piping, and continuing throughout the building to point of connection to equipment and fixture supply piping.

Piping, Exposed: Piping directly accessible by normal accesses without removal of any construction Work or material.

Piping, Service: Underground domestic water supply piping with a connection to a water main or supply as noted, and continuing to and into a building and terminating with the exposed fitting inside the building.

Piping, Tunnel: Piping installed in walk-in or non-walk-in tunnels or conduits up to first shut-off valve inside building.

Plumbing System: Includes the water supply and distribution pipes; plumbing fixtures and traps; water-treating or water-using equipment; soil, waste and vent pipes; and sanitary and storm sewers and building drains, in addition to their respective connections, devices and appurtenances within a structure or premises.

Product: As used includes materials, systems and equipment.

Registered Design Professional: An individual who is a registered architect (RA) in accordance with Article 147 of the New York State Education Law or a licensed professional engineer (PE) in accordance with Article 145 of the New York State Education Law.

Space, Finished: A space which has a finishing material applied to walls or ceilings, such as paint, plaster, ceramic tile, enamel glazing, face brick, vinyl wall covering, etc. to provide a finished appearance or which will have such finishes applied under a related Contract.

Space, Unfinished: A space which does not meet the definition of a finished space.

Special Inspection: Inspection as herein required of the materials, installation, fabrication, erection, or placement of components and connections requiring special expertise to ensure compliance with approved construction documents and referenced standards.

Steam-Heating Boiler: A boiler operated at pressures not exceeding **15 psi** for steam.

Supplier: Any person or organization who supplies materials or equipment for the work, including that fabricated to a special design.

Utility: Any gas, steam, water, sanitary sewer, storm sewer, electrical or other such service.

Water Supply System: The water service pipe, water distribution pipes, and the necessary connecting pipes, fittings, control valves and all appurtenances in or adjacent to the structure or premises.

1. Chilled: Water-cooled by refrigeration.
2. Cold: Water with at temperature between 33 degrees F and 80 degrees F and which is neither cooled nor heated mechanically.
3. Domestic: Water for use in buildings, except water used in connection with space heating and space cooling.
4. High Temperature: Water with a supply water temperature above 350 degrees.
5. Hot: Water at a temperature greater than or equal to 110°F.

1.3 INDUSTRY STANDARDS

Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

1. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within

reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

2. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

AA	Aluminum Association, Inc. (The)
AABC	Associated Air Balance Council
AAALAC	Association for Assessment and Accreditation of Laboratory Animal Care
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	ACI International (American Concrete Institute)
ACPA	American Concrete Pipe Association
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AHA	American Hardboard Association (part of CPA)
AI	Asphalt Institute
AIA	American Institute of Architects (The)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALSC	American Lumber Standard Committee, Incorporated
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.

APA	Architectural Precast Association
APA	APA - The Engineered Wood Association
ARI	Air-Conditioning & Refrigeration Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	ASME International
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International
AWCMA	American Window Covering Manufacturers Association (WCSC)
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
CBM	Certified Ballast Manufacturers
CCC	Carpet Cushion Council
CDA	Copper Development Association
CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CPA	Composite Panel Association
CRI	Carpet & Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute
CSI	Cast Stone Institute

CSI	Construction Specifications Institute (The)
CTI	Cooling Technology Institute
DHI	Door and Hardware Institute
EIA	Electronic Industries Alliance
EIMA	EIFS Industry Members Association
EJCDC	Engineers Joint Contract Documents Committee
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association
FM Approvals	Factory Mutual Approvals
FSA	Fluid Sealing Association
GA	Gypsum Association
GANA	Glass Association of North America
GSI	Geosynthetic Institute
HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association
HPVA	Hardwood Plywood & Veneer Association
ICEA	Insulated Cable Engineers Association, Inc
ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
IESNA	Illuminating Engineering Society of North America
IEST	Institute of Environmental Sciences and Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.

IPCEA	Insulated Power Cable Engineer Associates
ISO	International Organization for Standardization
ISSFA	International Solid Surface Fabricators Association
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LEED	Leadership in Energy and Environmental Design
MBMA	Metal Building Manufacturers Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association, Inc.
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International
NADCA	National Air Duct Cleaners Association
NAIMA	North American Insulation Manufacturers Association
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association
NETA	National Electrical Testing Association

NFHS	National Federation of State High School Associations
NFPA	National Fire Protection Association
NFRC	National Fenestration Rating Council
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NOFMA	NOFMA: The Wood Flooring Manufacturers Association
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NWWDA	National Wood Window and Door Association (WDMA)
PCI	Precast/Prestressed Concrete Institute
PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute
SAE	SAE International
SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers
SGCC	Safety Glazing Certification Council

SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWRI	Sealant, Waterproofing, & Restoration Institute
TCA	Tile Council of America, Inc.

1.5 FEDERAL GOVERNMENT AGENCIES:

Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CE	Army Corps of Engineers
CPSC	Consumer Product Safety Commission
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FDA	Food and Drug Administration

GSA	General Services Administration
HUD	Department of Housing and Urban Development
NIST	National Institute of Standards and Technology
OSHA	Occupational Safety & Health Administration
PHS	Office of Public Health and Science
SD	State Department
TRB	Transportation Research Board
USDA	Department of Agriculture
USPS	Postal Service

Codes, Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list.

ADAAG	Americans with Disabilities Act (ADA) Accessibility Guidelines
BCNYS	Building Code of New York State
CFR	Code of Federal Regulations
DOD	Department of Defense Military Specifications and Standards
FS	Federal Specification
MILSPEC	Military Specification and Standards

1.6 NEW YORK STATE GOVERNMENT AGENCIES:

Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

DASNY	Dormitory Authority of the State of New York
DEC	Department of Environmental Conservation
DHCR	Division of Housing and Community Renewal
DOH	Department of Health
NYSDOL	New York State Department of Labor

DOS	Department of State
DOT	Department of Transportation
NYSPA	New York State Power Authority
OGS	Office of General Services
OCFS	Office of Children and Family Services
OMRD	Office of Mental Retardation and Developmental Disabilities
OPRHP	Office of Parks, Recreation and Historic Preservation
NYSED	New York State Education Department (Department of Education)
SHPO	State Historic Preservation Office
SUCF	State University Construction Fund
SUNY	State University of New York

1.7 NEW YORK STATE CODES

Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

BCNYS	Building Code of New York State
9-NYCRR	New York State Dept. of Labor Title 9 State Building Code
10-NYCRR	New York State Dept. of Labor Title 10 State Hospital Code
19-NYCRR	Charter XXXIII, Sub Charter A, Uniform Fire Prevention and Building Code

Where references these references are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

Building Code of New York State
Energy Conservation Code of New York State
Plumbing Code of New York State of New York State
Mechanical Code of New York State
Fuel Gas Code of New York State

Fire Code of New York State

1.8 OTHER TERMS OR ACRONYMS:

Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name in the following list.

ACM	Asbestos Containing Materials
ACT	Acoustical Tile
ICRA	Infection Control Risk Assessment
RVT	Resilient Vinyl Tile
SAT	Suspended Acoustical Tile
SFRM	Spray on Fire Resistive Materials
TSI	Thermal Systems Insulation
VAT	Vinyl Asbestos Tile
VCT	Vinyl Composition Tile

1.9 OTHER TERMS OR ACRONYMS:

Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name in the following list.

ACM	Asbestos Containing Materials
ACT	Acoustical Tile
ICRA	Infection Control Risk Assessment
RVT	Resilient Vinyl Tile
SAT	Suspended Acoustical Tile
SFRM	Spray on Fire Resistive Materials
TSI	Thermal Systems Insulation
VAT	Vinyl Asbestos Tile
VCT	Vinyl Composition Tile

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 014200

SECTION 015001 - TEMPORARY FACILITIES & CONTROLS-MULTIPLE PRIME CONTRACTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 3. Temporary heat.
 - 4. Ventilation and Humidity Control
 - 5. Telephone service.
 - 6. Sanitary facilities, including drinking water.
 - 7. Storm and sanitary sewer.
- C. Support facilities include, but are not limited to, the following:
 - 1. Field offices and storage containers.
 - 2. Temporary roads and paving.
 - 3. Dewatering facilities and drains.
 - 4. Temporary partitions and enclosures.
 - 5. Hoists and temporary elevator use.
 - 6. Temporary project identification sign and project signage.
 - 7. Waste disposal services and dumpsters.
 - 8. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Temporary fire protection.
 - 2. Barricades, warning signs, and lights.
 - 3. Environmental protection.
 - 4. Tree and plant protection.
 - 5. Security enclosure and lockup.
 - 6. Temporary enclosures.
 - 7. Temporary partitions.
 - 8. Sidewalk Bridge for maintaining legal exits.
 - 9. Enclosure fence for the work site.

1.2 INFORMATIONAL SUBMITTALS

- A. Temporary Utilities: Each prime contractor shall submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within 15 days of the date established for submittal of the Contractor's Construction Schedule, each prime contractor shall submit a schedule indicating implementation and termination of each temporary utility for which the Contractor is responsible.
- C. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- D. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent

- E. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- F. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage, including delivery, handling, and storage provisions for materials subject to water absorption or water damage, discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water damaged Work.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 - 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- G. Dust-Control and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust-control and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
 - 1. Locations of dust-control partitions at each phase of the work.
 - 2. HVAC system isolation schematic drawing.
 - 3. Location of proposed air filtration system discharge.
 - 4. Other dust-control measures.
 - 5. Waste management plan.
- H. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.3 DEFINITIONS

- A. Temporary Enclosure: As determined by Architect, temporary roofing is complete, insulated, all exterior wall openings are closed with temporary closures.
- B. Permanent Enclosure: As determined by Architect, permanent roofing is complete, insulated, and **weather tight**; exterior walls are insulated and weather tight; and all openings are closed with permanent construction or substantial temporary closures.
- C. Temporary Facilities: Construction, fixtures, fittings, and other built items required to accomplish the work but which are not incorporated into the finished work.
- D. Temporary Utilities: A type of temporary facility, primary sources of electric power, water, natural gas supply, etc., obtained from public utilities, other main distribution systems, or temporary sources constructed for the project, but not including the fixtures and equipment served.
- E. Temporary Services: Activities required during construction, which do not directly accomplish the work.

1.4 QUALITY ASSURANCE

- A. Regulations: The contractor shall comply with industry standards and with applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building code requirements.

2. Health and safety regulations.
 3. Utility company regulations.
 4. Police, fire department and rescue squad rules.
 5. Environmental protection regulations.
- B. Standards: The Contractor shall comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
- C. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with the normal application of trade regulations and union jurisdictions.
- D. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.
1. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
 2. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
 3. Gas Service from Existing System: Gas Service from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- B. Cost or use charges for temporary facilities are not chargeable to the Owner or the Architect. The Architect will not accept a prime contractor's cost or use charges for temporary services or facilities as a basis of claim for an adjustment in the Contract Sum or the Contract Time.
- C. Other entities using temporary services and facilities include, but are not limited to, the following:
1. Other nonprime contractors.
 2. The Owner's work forces.
 3. Occupants of the Project.
 4. The Architect.
 5. Testing agencies.
 6. Personnel of government agencies.

1.6 PROJECT CONDITIONS

- A. Temporary Utilities: Each prime contractor shall prepare a schedule indicating dates for implementation and termination of each temporary utility for which the Contractor is responsible. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

- C. Temporary Use of Permanent Facilities: If the Owner permits temporary use of the permanent facilities the Installer of each permanent service shall assume responsibility for its operation, maintenance, and protection during use as a construction facility prior to the Owner's acceptance, regardless of previously assigned responsibilities.

1.7 DIVISION OF RESPONSIBILITIES

- A. General: These Specifications assign each prime contractor specific responsibilities for certain temporary facilities used by other prime contractors and other entities at the site. The Contractor for General Construction is responsible for providing temporary facilities and controls that are not normal construction activities of other prime contractors and are not specifically assigned otherwise by the Architect.

- B. **EACH PRIME CONTRACTOR** is responsible for the following:

1. Installation, operation, maintenance, and removal of each temporary facility usually considered as its own normal construction activity, as well as the costs and use charges associated with each facility.
2. Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
3. Its own field office complete with necessary furniture, utilities, and telephone service.
4. Its own storage containers for tools and storage of materials not incorporated into the building construction.
5. Dewatering for their own construction operations.
6. Temporary heat, ventilation, humidity control, and enclosure of the building prior to "Permanent Enclosure" where these facilities are necessary for its construction activity but have not yet been completed by the responsible prime contractor.
 - a. Temporary ventilation to control temperature and humidity is required by the Contractor responsible for installing the specified finish and equipment as these finishes may be damaged by excessive humidity or promote the growth of mold. The permanent HVAC system shall not be relied upon to provide the necessary ventilation or conditioning of the humidity in the building. Each Contractor is required to protect their work in place and provide the necessary ventilation and or humidity control.
7. Collection and disposal of its own hazardous, dangerous, unsanitary, or other harmful waste material.
8. Collection of its waste material and transporting to a dumpster.
9. Secure lockup of its own tools, materials, and equipment.
10. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.

- C. The Contractor for **General Construction** is responsible for the following:

1. Temporary Sewers
2. Temporary water service
3. Erosion control
4. Barricades, warning signs, and lights.
5. General disposal of wastes and spoil from the site areas.
6. Dust control for site work
7. Site Enclosure fence.
8. Snow and ice removal from all site construction areas.
9. Containerized tap dispenser drinking-water with paper cup supply
10. Barricades, warning signs, and lights related to the building work
11. Temporary fencing for building excavation.
12. Temporary safety railings and stairs

13. Temporary toilets, including disposable supplies.
 14. Temporary wash facilities, including disposable supplies
 15. Temporary Ventilation and Humidity Control: Provide temporary ventilation in areas of confined space. Provide Dehumidification units where required upon building enclosure to protect installed finishes and moisture sensitive building materials.
 16. Temporary partitions indicated on drawings or specifically called for in specifications, required for project phasing or necessary to perform the work.
 17. Building exit bridges and fences.
 18. Security enclosure and lockup.
 19. Directional signage and safety signage.
- D. The Electrical Contractor is responsible for the following:
1. Temporary electric power service and branch distribution.
 2. Temporary generator. To keep portions of the building in service during power shutdowns or replacement of main services.
 3. Temporary site lighting.
 4. Temporary lighting.
 5. Electric Power Service: Use electric power from the Owner's existing system without metering and without payment of use charges.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Each prime contractor shall provide new materials. If acceptable to the Architect, undamaged, previously used materials in serviceable condition may be used. Provide materials suitable for use intended.
- B. Lumber and Plywood:
1. For job-built sheds within the construction area, provide UL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.
 2. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch- thick exterior plywood.
- C. Gypsum Wallboard: Provide 5/8 type x gypsum wallboard on interior walls of temporary offices or temporary partitions.
- D. Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary offices, shops, and sheds.
- E. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- F. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.
- G. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.
- H. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
- I. Water: Provide potable water approved by local health authorities.
- J. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD

line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide galvanized-steel bases for supporting posts.

- K. Open-Mesh Fencing: Provide 0.12-inch- thick, galvanized 2-inch chain link fabric fencing 6 feet high and galvanized steel pipe posts, 1-1/2 inches I.D. for line posts and 2-1/2 inches I.D. for corner posts.

2.2 EQUIPMENT

- A. General: Each prime contractor shall provide new equipment. If acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4-inch heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. Heating and ventilating units: Provide temporary heating and ventilating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
1. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - a. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - b. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 - c. Retain MERV of 8 for LEED-NC or LEED-CI Credit EQ 3.1.
 2. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction and clean HVAC system as required in Division 01 Section "Closeout Procedures".
 3. Air Filtration Units: HEPA primary and secondary filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.
- G. Temporary Toilet Units: The **General Contractor** shall provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- H. Fire Extinguishers: **Each prime contractor** will provide hand-carried, portable, UL-rated; Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-

carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

2.3 TEMPORARY SUPPORT FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Temporary Field Offices: **Each prime contractor** shall provide its own prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 1. Store combustible materials apart from building.

2.4 TEMPORARY UTILITIES

- A. Temporary Sewer Service: The Contract for General Contractor work is responsible for temporary sewer service until the permanent services are installed.
 1. This work includes but is not limited to excavation and backfill, holding tanks, freeze protection, disinfection and coordination with the sewer purveyor.
- B. Temporary Water Service: The Contract for General Contractor work is responsible for temporary water service to the building until the permanent services are installed.
 1. This work includes but is not limited to excavation and backfill, tapping sleeves, temporary metering, freeze protection, disinfection and coordination with the water purveyor.
- C. Temporary Gas Service The Contract for Mechanical work is responsible for temporary gas service to the building until the permanent services are installed.
 1. This work includes but is not limited to excavation and backfill, temporary metering, and coordination with the gas purveyor.
- D. Temporary Electric Service: The Contract for Electric work is responsible for temporary electric service to the building until the permanent services are installed.
 1. This work includes but is not limited to temporary utility poles, temporary metering, weather protected temporary panel with disconnect and coordination with the electric purveyor.
- E. Telephone Service: **Each contractor** is responsible for his or her own telephone service.
 1. Provide at least one telephone at each site with answering machine.

Display construction-related phone numbers at each phone.

 - a.Fire emergency number.
 - b.Rescue emergency number.
 - c.Physician.
 - d.Prime Contractors' home offices.
 - e.Owner's representative.
 - f.Architect's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Each prime contractor shall provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
 - 1. Arrange with the company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 - 3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
- B. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- C. The contractor shall provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- D. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- E. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged.
 - 1. Filter out excessive amounts of soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
 - 2. Connect temporary sewers to the municipal system as directed by sewer department officials.
 - 3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.
- F. Sanitary Facilities: The **General Contractor** will provide temporary toilets for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
 - 2. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
- G. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

- H. Temporary Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
 - 1. Connect temporary service to Owner's existing power source, as directed by Owner.
- I. Temporary Heat: **Each prime contractor** will provide temporary heat required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize energy consumption. Direct fired propane or Kerosene salamanders will not be permitted.

3.3 SUPPORT FACILITIES INSTALLATION

- A. **Each prime contractor** will locate field offices, storage trailers, sanitary facilities, and other temporary construction and support facilities for easy access.
 - 1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
 - 2. Refer to the phasing plans for locations of storage trailers
- B. Storage trailers/ containers: **Each prime contractor** will install storage containers equipped to accommodate materials and equipment involved. Storage trailers are to be located at each site in staging areas designated by the Owner.
- C. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- D. Temporary Parking: Parking at most sites is limited to the staging areas and the areas adjacent the new building. Parking on the street or in owners designated lots is prohibited.
- E. Dewatering Facilities and Drains: **Each Contractor** will comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. **The General Contractor** will dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
 - 2. **The General Contractor** will remove snow and ice as required to minimize accumulations.
- F. Collection and Disposal of Waste: **Each prime contractor** will collect waste from their construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. The owner will enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly.
- G. Add references to approved disposal methods. Cross-reference Sections that specify handling of special waste material. See the Evaluations of Division 1 Section "Construction Facilities and Temporary Controls" for further discussion.
- H. Existing Stair Usage: Use of Owner's existing stairs will be permitted, as long as stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.

- I. Temporary Lifts and Hoists: **Each prime contractor** will provide facilities for hoisting materials and employees.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Architect.
- B. Protection of Existing Facilities: Each contractor will protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- C. Environmental Protection: Each contractor will provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.. Avoid using tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.
1. Comply with work restrictions specified in Division 01 Section "Summary."
- D. Temporary Erosion and Sedimentation Control: The General Contractor will provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from the project site during the course of the project.
 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- E. Stormwater Control: **The General Contractor** will comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- F. Temporary Site Lighting: The **Electrical** Contractor Install exterior yard and sign lights so signs are visible when Work is being performed.
- G. Tree and Plant Protection: **The General Contractor** will install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- H. Enclosure Fence: The **General Construction Contractor** when excavation begins will install an enclosure fence with lockable entrance gates. Install in a manner that will prevent the public and animals from easily entering the site, except by the entrance gates.
1. Provide open-mesh, 6' high chain link fence with posts.
 2. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 3. Provide min. 2 double swing access gates and man gates. Each gate is to have a chain and padlock.
 4. Provide (2) keys for each lock to the Owner's Representative.
 5. Remove fence upon completion of all exterior activities or sooner if directed by **Architect**.

- I. Barricades, Warning Signs, and Lights: The **General Contractor** will comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- J. Temporary Signs: The **General Contractor** will prepare signs to provide directional information to construction personnel and visitors for each site. Unauthorized signs are not permitted.
1. For construction traffic control/flow at entrances/exits, as designated by the Owner.
 2. For warning signs as required
 3. Per OSHA standards as necessary
 4. For trailer identification
 5. For "No Smoking" safe work site at multiple locations.
- K. Temporary Egress: The **General Contractor** will maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- L. Temporary Enclosures: **Each prime contractor** will provide temporary enclosure for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
1. Where heat is needed and the permanent building enclosure is not complete, **the contractor responsible for the work will provide** temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq. ft. or less with plywood or similar materials.
 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
- M. Temporary Fire Protection: Each prime contractor until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10, "Standard for Portable Fire Extinguishers," and NFPA 241, "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 2. Store combustible materials in containers in fire-safe locations.
 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
 4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
- N. Security Enclosure and Lockup: The **General Construction Contractor** will install substantial temporary enclosure of partially completed areas of construction. Provide temporary doors and locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
1. Storage: **Each prime contractor** is responsible at for their materials and equipment to be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: **Each Contractor** is to avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
 - 1. Protect porous materials from water damage.
 - 2. Protect stored and installed material from flowing or standing water.
 - 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 - 4. Remove standing water from decks.
 - 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before Permanent Enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
 - 1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 - 2. Keep interior spaces reasonably clean and protected from water damage.
 - 3. Periodically collect and remove waste containing cellulose or other organic matter.
 - 4. Discard or replace water-damaged material.
 - 5. Do not install material that is wet.
 - 6. Discard, replace or clean stored or installed material that begins to grow mold.
 - 7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the permanent building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
 - 1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 - 2. Mechanical Contractor is to provide temporary dehumidification and ventilation until the building systems are operational and the spaces are substantially completed.
 - 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
 - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for **48** hours are considered defective.
 - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record daily readings over a forty-eight hour period. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
 - c. Remove materials that can not be completely restored to their manufactured moisture level in **48** hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities and good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Unless the Architect requests that it be maintained longer **each prime contractor** will remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are the property of each prime contractor.
 2. At Substantial Completion, **Each prime contractor** will be responsible to clean and renovate permanent facilities related to the work of their contract and used during the construction period including, but not limited to, the following:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts subject to unusual operating conditions.
 - c. Replace lamps burned out or noticeably dimmed by hours of use.

END OF SECTION 015001

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for products selected under an allowance.
 - 2. Section 012300 "Alternates" for products selected under an alternate.
 - 3. Section 012500 "Substitution Procedures" for requests for substitutions.
 - 4. Section 014200 "References" for applicable industry standards for products specified.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable

product request within 10 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

- a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
- b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

- B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

- C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.

- Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
 4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Equivalent Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 EQUIVALENT PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for equivalent product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner-installed products.
 - 6. Progress cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limits on use of Project site.
 - 2. Section 013300 "Submittal Procedures" for submitting surveys.
 - 3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
 - 4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.
 - 5. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.3 INFORMATIONAL SUBMITTALS

- A. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.4 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where

indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
 2. List of detrimental conditions, including substrates.
 3. List of unacceptable installation tolerances.
 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 2. Establish limits on use of Project site.
 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 4. Inform installers of lines and levels to which they must comply.

5. Check the location, level and plumb, of every major element as the Work progresses.
 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch extending to an inside or outside corner of a wall. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, roof material, flashing and similar materials from adjacent finished surfaces.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for progress cleaning of Project site.
 - 2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 3. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 4. Section 017900 "Demonstration and Training" for requirements for instructing Owner's personnel.
 - 5. Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.2 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete. **The Architect will not perform a punch list inspection until the contractors punch list is received and reviewed.**

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
 5. Submit test/adjust/balance records.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 2. Complete startup and testing of systems and equipment
 3. Submit test/adjust/balance records.
 4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 5. Perform preventive maintenance on equipment used prior to Substantial Completion.
 6. Complete startup testing of systems.
 7. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
 8. Complete final cleaning requirements, including touchup painting
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Advise Owner of pending insurance changeover requirements.
6. Advise Owner of changeover in heat and other utilities.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
10. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
11. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
12. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.

B. Inspection: Submit a written request for final inspection to determine acceptance, a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.
4. Submit list of incomplete items in the following format:
 - a. PDF electronic file. Architect will return annotated file.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive **8-1/2-by-11-inch** paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
 - p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - q. Leave Project clean and ready for occupancy.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 - 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Emergency manuals.
 - 3. Operation manuals for systems, subsystems, and equipment.
 - 4. Product maintenance manuals.
 - 5. Systems and equipment maintenance manuals.
- B. Related Requirements:
 - 1. Section 011200 "Multiple Contract Summary" for coordinating operation and maintenance manuals covering the Work of multiple contracts.
 - 2. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
 - 3. Divisions 02 through 49 Sections for any specific closeout requirements for the Work in those Sections.

1.2 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.3 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
 - 1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
 - 2. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves.

- C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.
 - 1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
 - 1. List of documents.
 - 2. List of systems.
 - 3. List of equipment.
 - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.

3. Name and address of Owner.
 4. Date of submittal.
 5. Name and contact information for Contractor.
 6. Name and contact information for Construction Manager.
 7. Name and contact information for Architect.
 8. Name and contact information for Commissioning Authority.
 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components

of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
 1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 2. Performance and design criteria if Contractor has delegated design responsibility.

3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.

2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
1. Standard maintenance instructions and bulletins.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training video recording, if available.

- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 - 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 - 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
1. Do not use original project record documents as part of operation and maintenance manuals.
 2. Comply with requirements of newly prepared record Drawings in Section 017839 "Project Record Documents."
- G. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.
- B. Related Requirements:
 - 1. Section 011200 "Multiple Contract Summary" for coordinating project record documents covering the Work of multiple contracts.
 - 2. Section 017700 "Closeout Procedures" for general closeout procedures.
 - 3. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 4. Divisions 02 through 49 Sections for specific requirements for project record documents of the Work in those Sections.

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit PDF electronic files of scanned record prints and one of file prints.
 - 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit PDF electronic files of scanned record prints and three set(s) of prints.
 - 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.

- E. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding archive photographic documentation.
 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Annotated PDF electronic file.
 2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 3. Refer instances of uncertainty to Architect for resolution.
 4. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
 - a. See Section 013300 "Submittal Procedures" for requirements related to use of Architect's digital data files.
 - b. Architect will provide data file layer information. Record markups in separate layers.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Submit record Drawings as scanned PDF electronic file(s) of marked-up paper copy of Drawing.
 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
 5. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as scanned PDF electronic file(s) of marked-up paper copy of Specifications.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as scanned PDF electronic file(s) of marked-up paper copy of Product Data.
1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as scanned PDF electronic file(s) of marked-up miscellaneous record submittals.
1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
1. Demonstration of operation of systems, subsystems, and equipment.
 2. Training in operation and maintenance of systems, subsystems, and equipment.
 3. Demonstration and training video recordings.

1.2 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.
- B. Qualification Data: For instructor.
- C. Attendance Record: For each training module, submit list of participants and length of instruction time.
- D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.3 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
1. Identification: On each copy, provide an applied label with the following information:
 - a. Name of Project.
 - b. Name and address of videographer.
 - c. Name of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Date of video recording.
 2. Transcript: Prepared in PDF format and prepared and bound in format matching operation and maintenance manuals. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding video recording. Include name of Project and date of video recording on each page.
 3. At completion of training, submit complete training manual(s) for Owner's use prepared and bound in format matching operation and maintenance manuals and in PDF electronic file format on compact disc.

1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project record documents.
 - e. Identification systems.

- f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
- 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
- 4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
- 5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
- 6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
- 7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
- 8. Repairs: Include the following:

- a. Diagnosis instructions.
- b. Repair instructions.
- c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
- d. Instructions for identifying parts and components.
- e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 1. Owner will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 1. Schedule training with Owner, through Architect, with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.
- F. Cleanup: Collect used and leftover educational materials and remove from project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION 017900

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected portions of process equipment, building or structure.
 - 2. Demolition and removal of selected site elements.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
 - 2. Section 017300 "Execution" for cutting and patching procedures.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 3. Coordination for shutoff, capping, and continuation of utility services.
 4. Use of elevator and stairs.
 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- C. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.6 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.7 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.8 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
1. Hazardous materials will be removed by Owner before start of the Work.
 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
1. Maintain fire-protection facilities in service during selective demolition operations.

1.9 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding. Existing warranties include the following:
- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

1.10 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.
1. Comply with requirements specified in Section 013233 "Photographic Documentation."
 2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
 3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
1. Arrange to shut off utilities with utility companies.
 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.

- e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
- f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
- g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.3 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 - 5. Maintain fire watch during and for at least 3 hours after flame-cutting operations.
 - 6. Maintain adequate ventilation when using cutting torches.

7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area on-site.
 5. Protect items from damage during transport and storage.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.
- B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.

3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 030130 - CONCRETE REHABILITATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
1. Removal of deteriorated concrete and subsequent patching and rebuilding.
 2. Epoxy crack injection.
 3. Expansion Joint Repair

1.3 UNIT PRICES

- A. Unit prices for Concrete Rehabilitation are included in Division 01 Section "Unit Prices."
- B. Unit prices include costs of field quality control testing required by the Work for which the unit price applies.
- C. Authorized Concrete Repair Measurement: Cubic feet of concrete, measured in place.
1. Concrete Repair: Includes existing concrete removal and patching or rebuilding. Work will be paid for by the cubic foot computed on the basis of rectangular solid shapes approximating the actual shape of concrete removed and replaced with average depths, widths, and lengths, measured to the nearest inch.
- D. Epoxy Crack Injection Measurement: Linear feet of crack injected, measured after crack preparation.
- E. Concrete Expansion Joint Repair Measurement: Linear feet of existing expansion joints that are repaired, measured after joint preparation.

1.4 SUBMITTALS

- A. Product Data: Include material descriptions, chemical composition, physical properties, test data, and mixing and application instructions.
1. Include Material Safety Data Sheets, if applicable.
- B. Shop Drawings: For formwork and temporary shoring and supports, prepared by or under the supervision of a qualified professional engineer. Design and engineering of formwork and temporary shoring and supports are Contractor's responsibility. Indicate proposed schedule and sequence for removal of formwork and temporary shoring and supports.
- C. Samples: Cured samples of patching materials.
- D. Product Certificates: Signed by manufacturers certifying that products furnished comply with requirements and are recommended by manufacturer for uses indicated.
- E. Qualification Data: For installers, professional engineer and manufacturers to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1. For products required to be installed by workers approved by product manufacturers, include letters of acceptance by product manufacturers certifying that installers are approved to apply their products.
- F. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of bonding agents, patching mortars and epoxy adhesives with requirements indicated.
- G. Rehabilitation program for each phase of the rehabilitation process, including protection of surrounding materials and Project site during operations. Describe in detail the materials, methods, equipment, and sequence of operations to be used for each phase of the Work.
 1. If alternative materials and methods to those indicated are proposed for any phase of rehabilitation work, submit substitution request complying with Division 1 Section "Product Requirements" and provide a written description of proposed materials and methods, including evidence of successful use on other comparable projects, and a testing program to demonstrate their effectiveness for this Project.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: In addition to other requirements in Division 1 Section "Quality Requirements," retain installers that employ workers trained and approved by manufacturer to apply concrete patching and rebuilding materials, epoxy crack injection materials and polymer sealers.
- B. Manufacturer Qualifications: In addition to other requirements in Division 1 Section "Quality Requirements," manufacturers shall have factory-trained representatives who are available for consultation and Project site inspection at no additional cost.
- C. Source Limitations: Obtain each of the following through one source from a single manufacturer:
 1. Concrete patching and rebuilding materials.
 2. Epoxy crack injection materials.
- D. Mockups: Build mockups for concrete removal and patching, floor joint repair, epoxy crack injection, and polymer sealers to demonstrate qualities of materials and execution.
 1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's original and unopened containers, labeled with type and name of products and manufacturers.
- B. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.
- C. Store cementitious materials off the ground, under cover, and in a dry location.
- D. Store aggregates, covered and in a dry location, where grading and other required characteristics can be maintained and contamination avoided.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations for Epoxies: Do not apply when air and substrate temperatures are outside limits permitted by manufacturer. During hot weather, cool epoxy components before

mixing, store mixed products in shade, and cool unused mixed products to retard setting. Do not apply to wet substrates unless approved by manufacturer.

1. Use only Class A epoxies when substrate temperatures are below or are expected to go below 40° F within 8 hours.
 2. Use only Class A or B epoxies when substrate temperatures are below or are expected to go below 60° F within 8 hours.
 3. Use only Class C epoxies when substrate temperatures are above 60° F.
- B. Cold-Weather Requirements for Cementitious Materials: Do not apply unless air temperature is between 40° and 90° F and will remain so for at least 48 hours after completion of Work.
- C. Cold-Weather Requirements for Cementitious Materials: Comply with the following procedures:
1. When air temperature is below 40° F, heat patching material ingredients and existing concrete to produce temperatures between 40° and 90° F.
 2. When mean daily air temperature is between 25° and 40° F, cover completed Work with weather-resistant insulating blankets for 48 hours after repair.
 3. When mean daily air temperature is below 25° F, provide enclosure and heat to maintain temperatures above 32° F within the enclosure for 48 hours after repair.
- D. Hot-Weather Requirements for Cementitious Materials: Protect repair work when temperature and humidity conditions produce excessive evaporation of water from patching materials. Provide artificial shade and windbreaks, and use cooled materials as required. Do not apply to substrates with temperatures of 90° F and above.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- B. Products: Subject to compliance with requirements, provide one of the following:
1. Epoxy Bonding Agent:
 - a. Dayton Superior Corporation; Sure-Anchor Epoxy (J-50).
 - b. Euclid Chemical Company; EUCO #352 EPOXY SYSTEM.
 - c. Fosroc International Limited; Nitobond 881-11.
 - d. Kaufman Products, Inc.; SurePoxxy HM EPL.
 - e. Master Builders, Inc.; CONCRESLVE LIQUID LPL.
 - f. Sika Corporation; Sikadur 31 Hi-Mod Gel.
 - g. Sonneborn, Div. of ChemRex, Inc.; Epogel.
 - h. Sto Corp., Concrete Restoration Division; Sto Epoxy Adhesive.
 - i. Unitex; Pro-Poxy 204.
 2. Latex Bonding Agent, Type II:
 - a. Dayton Superior Corporation; Day-Chem Ad Bond (J-40).
 - b. Euclid Chemical Company; FLEX-CON.
 - c. Kaufman Products, Inc.; SureBond.
 - d. Sonneborn, Div. of ChemRex, Inc.; Acrylic Additive.

3. Latex Bonding Agent, Type I:
 - a. Euclid Chemical Company; EUCO WELD.
 - b. Kaufman Products, Inc.; SureWeld.
 - c. Sika Corporation; SikaLatex.
4. Cementitious Patching Mortar:
 - a. Fosroc International Limited; Renderoc LA.
 - b. Kaufman Products, Inc.; HiCap.
 - c. Master Builders, Inc.; EMACO S66 CI.
 - d. Sika Corporation; SikaRepair 223.
 - e. Sto Corp., Concrete Restoration Division; Sto Full-Depth Repair Mortar.
5. Epoxy Crack Injection Adhesive:
 - a. Dayton Superior Corporation; Sure-Inject (J-56).
 - b. Sika Corporation; Sikadur 35 Hi-Mod LV.
 - c. Sonneborn, Div. of ChemRex, Inc.; EpoFil.

2.2 BONDING AGENTS

- A. Epoxy-Modified, Cementitious Bonding and Anticorrosion Agent: Product that consists of water-insensitive epoxy adhesive, portland cement, and water-based solution of corrosion-inhibiting chemicals that forms a protective film on steel reinforcement.
- B. Epoxy Bonding Agent: ASTM C 881, Type II.
 1. Thin Film Open Time: Not less than two hours.
- C. Latex Bonding Agent: ASTM C 1059, Type II.
- D. Mortar Scrub-Coat: 1 part portland cement complying with ASTM C 150, Type I, II, or III and 1 part fine aggregate complying with ASTM C 144, except 100 percent passing a No. 16 sieve.

2.3 PATCHING MORTAR

- A. Patching Mortar: Unless otherwise indicated, use one of the following:
 1. Job-Mixed Patching Mortar: 1 part portland cement complying with ASTM C 150, Type I, II, or III and 2-1/2 parts fine aggregate complying with ASTM C 144, except 100 percent passing a No. 16 sieve.
 2. Cementitious Patching Mortar: Packaged, dry mix complying with ASTM C 928.
 3. Polymer-Modified, Cementitious Patching Mortar: Packaged, dry mix complying with ASTM C 928, that contains a latex additive as either a dry powder or a separate liquid that is added during mixing.
 4. Polymer-Modified, Silica-Fume-Enhanced, Cementitious Patching Mortar: Packaged, dry mix complying with ASTM C 928, that contains silica fume complying with ASTM C 1240 and a latex additive as either a dry powder or a separate liquid that is added during mixing.
 5. Epoxy-Modified, Cementitious Patching Mortar: Mixture of water-insensitive epoxy adhesive, portland cement, and graded aggregates.

- B. Overhead Patching Mortar: For overhead repairs, use patching mortar recommended by manufacturer for overhead use and as specified above.
- C. Coarse Aggregate for Adding to Patching Mortar: Washed aggregate complying with ASTM C 33, Size No. 8, Class 5S. Add only as permitted by patching mortar manufacturer.

2.4 CONCRETE

- A. Concrete Materials and Admixtures: Comply with Division 3 Concrete.
- B. Steel and Fiber Reinforcement and Reinforcement Accessories: Comply with Division 3 Concrete.
- C. Form-Facing Materials: Comply with Division 3 Concrete.
- D. Preplaced Aggregate: Washed aggregate complying with ASTM C 33, Class 5S, with 100 percent passing a 1-1/2-inch sieve, 95 to 100 percent passing a 1-inch sieve, 40 to 80 percent passing a 3/4-inch sieve, 0 to 15 percent passing a 1/2-inch sieve, and 0 to 2 percent passing a 3/8-inch sieve.
- E. Fine Aggregate for Grout Used with Preplaced Aggregate: Fine aggregate complying with ASTM C 33, but with 100 percent passing a No. 8 sieve, 95 to 100 percent passing a No. 16 sieve, 55 to 80 percent passing a No. 30 sieve, 30 to 55 percent passing a No. 50 sieve, 10 to 30 percent passing a No. 100 sieve, 0 to 10 percent passing a No. 200 sieve, and having a fineness modulus of 1.30 to 2.10.
- F. Grout Fluidifier for Grout Used with Preplaced Aggregate: ASTM C 937.
- G. Portland Cement for Grout Used with Preplaced Aggregate: ASTM C 150.
- H. Pozzolans for Grout Used with Preplaced Aggregate: ASTM C 618.

2.5 ELASTOMERIC EXPANSION JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Multicomponent Nonsag Immersible Polysulfide Sealant:
 - 1. Available Products: PolySpec Corp.; Thiokol 2235M HP with PolySpec Corp.; Thiokol 415 Primer for Polysulfide sealants.
 - 2. Type and Grade: M (multicomponent) and NS (nonsag).

2.6 MISCELLANEOUS MATERIALS

- A. Epoxy Joint Filler: 2-component, semirigid, 100 percent solids, epoxy resin with a Shore A hardness of at least 80 per ASTM D 2240.
- B. Epoxy Crack Injection Adhesive: ASTM C 881, Type I.
- C. Epoxy Capping Adhesive: Product manufactured for use with crack injection adhesive by same manufacturer.
- D. Corrosion-Inhibiting Treatment Materials: Water-based solution of alkaline corrosion-inhibiting chemicals that penetrates concrete by diffusion and forms a protective film on steel reinforcement.

2.7 MIXES

- A. Mix products in clean containers according to manufacturer's written instructions.

1. Add clean silica sand and coarse aggregates to products only as recommended by manufacturer.
 2. Do not add water, thinners, or additives unless recommended by manufacturer.
 3. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovel or trowel as unit of measure.
 4. Do not mix more materials than can be used within recommended open time. Discard materials that have begun to set.
- B. Mortar Scrub-Coat: Mix with enough water to provide a consistency of thick cream.
- C. Dry-Pack Mortar: Mix with just enough liquid to form a damp cohesive mixture that can be squeezed by hand into a ball but is not plastic.
- D. Concrete: Comply with Division 3 Concrete.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Notify Architect seven days in advance of dates when areas of delaminated concrete and reinforcing bars will be located.
- B. Locate areas of delamination using hammer or chain drag sounding and mark boundaries. Mark areas for removal by simplifying and squaring off boundaries of delaminated areas as directed by Engineer.
- C. Locate at least three reinforcing bars using a pachometer, and drill test holes to determine depth of cover. Calibrate pachometer, using depth of cover measurements, and verify depth of cover in removal areas using pachometer.

3.2 PREPARATION

- A. Protect people, motor vehicles, equipment, surrounding construction, Project site, plants, and surrounding buildings from injury resulting from concrete rehabilitation work.
1. Erect temporary protective covers over pedestrian walkways and at points of entrance and exit for people and vehicles that must remain in operation during course of concrete rehabilitation work. Construct covers of tightly fitted, 3/4-inch exterior-grade plywood supported at 16 inches o.c. and covered with asphalt roll roofing.
 2. Protect adjacent equipment and surfaces by covering them with heavy polyethylene film and waterproof masking tape. If practical, remove items, store, and reinstall after potentially damaging operations are complete.
 3. Neutralize and collect alkaline and acid wastes for disposal off Owner's property.
 4. Dispose of runoff from wet operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
- B. Shoring: Install temporary supports before beginning concrete removal.
- C. Concrete Removal: Saw-cut perimeter of areas indicated for removal to a depth of at least 1/2 inch. Make cuts perpendicular to concrete surfaces and no deeper than cover on reinforcing. Remove loose and deteriorated concrete by breaking up and dislodging from reinforcing.

1. Remove concrete between cuts to a depth of at least 1/2 inch.
 2. Where half or more of the perimeter of reinforcing bar is exposed, bond between reinforcing bar and surrounding concrete is broken, or reinforcing bar is corroded, remove concrete from entire perimeter of bar to provide at least a 3/4-inch clearance.
 3. Test areas where concrete has been removed by tapping with hammer, and remove additional concrete until unsound concrete is completely removed.
 4. Provide fractured aggregate surfaces with a profile of at least 1/8 inch that are approximately perpendicular or parallel to original concrete surfaces. At columns and walls, make top and bottom surfaces level.
 5. Thoroughly clean removal areas of loose concrete, dust, and debris.
- D. Reinforcing Bar Preparation: Remove loose and flaking rust from reinforcing bars by abrasive blast cleaning until only tightly bonded light rust remains.
1. Where section loss of reinforcing bar is more than 25 percent, or 20 percent in 2 or more adjacent bars, cut bars and remove and replace as directed by Engineer. Remove additional concrete as necessary to provide at least a 3/4-inch clearance at existing and replacement bars. Splice replacement bars to existing bars according to ACI 318, by lapping, welding, or using mechanical couplings.
- E. Concrete Expansion Joint Repair Preparation: Remove existing expansion joint of joint sealant, dust, laitance, grease, oils, curing compounds, form release agents and foreign particles by mechanical means. The joint and adjacent substrate must be clean, sound and free of surface contaminants. It may be dry or damp, but free of standing water. Blow joint free of dust using compressed air line equipped with an oil trap.
1. Elastomeric Tubing Sealant Backings: Provide neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F, where existing expansion joint filler is missing or beyond repair.

3.3 APPLICATION

- A. Epoxy Bonding Agent: Apply to reinforcing bars and concrete by brush, roller, or spray according to manufacturer's written instructions, leaving no pinholes or other uncoated areas. Apply patching mortar or concrete while epoxy is still tacky. If bonding agent dries, recoat before placing patching mortar or concrete.
- B. Latex Bonding Agent, Type II: Mix with portland cement and scrub into concrete surface according to manufacturer's written instructions. If bonding agent dries, recoat before placing patching mortar or concrete.
- C. Latex Bonding Agent, Type I: Apply to concrete by brush roller or spray. Allow to dry before placing patching mortar or concrete.
- D. Mortar Scrub-Coat: Dampen repair area and surrounding concrete 6 inches beyond repair area. Remove standing water and apply scrub-coat with a brush, scrubbing it into surface and thoroughly coating repair area. If scrub-coat dries, recoat before applying patching mortar or concrete.
- E. Patching Mortar: Unless otherwise recommended by manufacturer, apply as follows:
1. Wet substrate thoroughly and then remove standing water. Scrub a slurry of neat patching mortar mixed with latex bonding agent into substrate, filling pores and voids.
 2. Place patching mortar by troweling toward edges of patch to force intimate contact with edge surfaces. For large patches, fill edges first and then work toward center, always

- troweling toward edges of patch. At fully exposed reinforcing bars, force patching mortar to fill space behind bars by compacting with trowel from sides of bars.
3. For vertical patching, place material in lifts of not more than 1 inch nor less than 1/4 inch. Do not feather edge.
 4. For overhead patching, place material in lifts of not more than 1 inch nor less than 1/4 inch. Do not feather edge.
 5. After each lift is placed, consolidate material and screed surface.
 6. Where multiple lifts are used, score surface of lifts to provide a rough surface for application of subsequent lifts. Allow each lift to reach final set before placing subsequent lifts.
 7. Allow surfaces of lifts that are to remain exposed to become firm and then finish to a smooth surface with a wood or sponge float.
 8. Wet-cure cementitious patching materials, including polymer-modified, cementitious patching materials, for not less than seven days by water-fog spray or water-saturated absorptive cover.
- F. Dry-Pack Mortar: Use for deep cavities. Place according to manufacturer's written instructions and as follows:
1. Provide forms where necessary to confine patch to required shape.
 2. Wet substrate and forms thoroughly and then remove standing water.
 3. Place dry-pack mortar into cavity by hand, and compact into place with a hardwood drive stick and mallet or hammer. Do not place more material at a time than can be properly compacted. Continue placing and compacting until patch is approximately level with surrounding surface.
 4. After cavity is filled and patch is compacted, trowel surface to match profile and finish of surrounding concrete. A thin coat of patching mortar may be troweled into the surface of patch to help obtain required finish.
 5. Wet-cure patch for not less than seven days by water-fog spray or water-saturated absorptive cover.
- G. Concrete: Place according to Division 3 Concrete and as follows:
1. Apply epoxy bonding agent to reinforcing and concrete substrate.
 2. Use vibrators to consolidate concrete as it is placed.
 3. At unformed surfaces, screed concrete to produce a surface that when finished with patching mortar will match required profile and surrounding concrete.
 4. Place concrete by form and pump method.
 - a. Design and construct forms to resist pumping pressure in addition to weight of wet concrete. Seal joints and seams in forms and junctions of forms with existing concrete.
 - b. Pump concrete into place, releasing air from forms as concrete is introduced. When formed space is full, close air vents and pressurize to 14 psi.
 5. Wet-cure concrete for not less than seven days by leaving forms in place or keeping surfaces continuously wet by water-fog spray or water-saturated absorptive cover.
 6. Fill placement cavities with dry-pack mortar and repair voids with patching mortar. Finish to match surrounding concrete.
- H. Epoxy Crack Injection: Comply with manufacturer's written instructions and the following:

1. Clean areas to receive capping adhesive of oil, dirt, and other substances that would interfere with bond, and clean cracks with oil-free compressed air or low-pressure water to remove loose particles.
2. Place injection ports as recommended by epoxy manufacturer, spacing no farther apart than thickness of member being injected. Seal injection ports in place with capping adhesive.
3. Seal cracks at exposed surfaces with a ribbon of capping adhesive at least 1/4 inch thick by 1 inch wider than crack.
4. Inject cracks wider than 0.003 inch to a depth of 8 inches or to a width of less than 0.003 inch, whichever is less.
5. Inject epoxy adhesive, beginning at widest part of crack and working toward narrower parts. Inject adhesive into ports to refusal, capping adjacent ports when they extrude epoxy. Cap injected ports and inject through adjacent ports until crack is filled.
6. After epoxy adhesive has set, remove injection ports and grind surfaces smooth.

I. Concrete Expansion Joint Repair:

1. Prime surface with Primer.
2. Where required install sealant backing into the joint; the backer rod should be compressed 25%, the joint depth shall be one half the joint width.
3. Apply sealant with conventional caulking equipment. Fill joint completely.
4. Immediately after application, dry tool the sealant using a tooling stick. Use light pressure to ensure positive and complete contact of the sealant to the joint surfaces. Tooling the bead in a concave shape achieves the desired hourglass shape of the finished bead.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to sample materials and perform tests specified in Division 3 and as follows:

1. Patching Mortar, Packaged Mixes: Five (5) percent randomly selected samples tested according to ASTM C 928.
2. Patching Mortar, Field Mixed: Five (5) percent randomly selected samples tested for compressive strength according to ASTM C 109/C 109M.
3. Grouted Preplaced Aggregate: Tested for compressive strength of grout according to ASTM C 942.
 - a. Testing Frequency: 1 sample for each 25 cu. yd. (19 cu. m) of grout or fraction thereof, but not less than 1 sample for each day's work.
4. Epoxy Joint Filler: Core drilled samples to verify proper installation.
 - a. Testing Frequency: One sample for each 100 feet (30 m) of joint filled.
 - b. Where samples are taken, fill holes with epoxy joint filler.
5. Epoxy Crack Injection: Core drilled samples to verify proper installation.
 - a. Testing Frequency: 3 samples from mockup and 1 sample for each 100 feet (30 m) of crack injected.
 - b. Where samples are taken, fill holes with epoxy mortar.

END OF SECTION 030130

SECTION 033053 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
1. Footings.
 2. Foundation walls.
 3. Slabs-on-grade.
 4. Equipment Pads and Bases.
 5. Pipe Bases.
- B. Related Sections include the following:
1. Division 2 Section "Earthwork" for drainage fill under slabs-on-grade.
 2. Division 2 Section "Cement Concrete Pavement" for concrete pavement and walks.
 3. Division 3 Section "Integral Concrete Waterproofing Admixture."

1.3 UNIT PRICES

- A. Work of this Section is affected by unit prices for cast-in-place specified in Section 01270 "Unit Prices."
- B. Quantity allowances for cast-in-place are included in Section 01210 "Allowances."
- C. Authorized Additional Slab-on-Grade Concrete Measurement: Cubic yards of concrete, measured in place. Includes all Slab-on-Grade Concrete that is not indicated in the Contract.
- D. Authorized Additional Concrete Steel Reinforcement Measurement: Pounds of steel reinforcement, measured in place. Includes all Concrete Steel Reinforcement that is not indicated in the Contract.

1.4 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
1. Indicate amounts of mixing water to be withheld for later addition at Project site.

- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.
 - 1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and installing and removing reshoring.
- E. Samples: For waterstops and vapor retarder.
- F. Welding certificates.
- G. Qualification Data: For Installer, manufacturer, and testing agency.
- H. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
- I. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Form materials and form-release agents.
 - 4. Steel reinforcement and accessories.
 - 5. Waterstops.
 - 6. Curing compounds.
 - 7. Bonding agents.
 - 8. Adhesives.
 - 9. Vapor retarders.
 - 10. Semirigid joint filler.
 - 11. Joint-filler strips.
 - 12. Repair materials.
- J. Floor surface flatness and levelness measurements to determine compliance with specified tolerances.
- K. Field quality-control test and inspection reports.
- L. Minutes of preinstallation conference.

1.6 ALLOWANCES

- A. Allowance No. 1 for the testing services included in Division 1 "Allowances" for concrete testing.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
 2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.
- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.
- E. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code-- Reinforcing Steel."
- F. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- H. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 - a. Contractor's superintendent.
 - b. Independent testing agency responsible for concrete design mixtures.
 - c. Ready-mix concrete manufacturer.
 - d. Concrete subcontractor.
 2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 2. Products: Subject to compliance with requirements, provide one of the products specified.
 3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
1. Plywood, metal, or other approved panel materials.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.
- D. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.
- E. Chamfer Strips: Wood, metal, PVC, or rubber strips, **3/4 by 3/4 inch**, minimum.
- F. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.
- G. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- H. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
1. Furnish units that will leave no corrodible metal closer than **1 inch** to the plane of exposed concrete surface.
 2. Furnish ties that, when removed, will leave holes no larger than **1 inch** in diameter in concrete surface.

3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.3 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Steel Bar Mats: ASTM A 184/A 184M, fabricated from ASTM A 615/A 615M, Grade 60, deformed bars, assembled with clips.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.
- D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.

2.4 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut bars true to length with ends square and free of burrs.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

2.5 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 1. Portland Cement: ASTM C 150, Type I or Type II, gray. Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class C.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
 2. Blended Hydraulic Cement: ASTM C 595, Type I (PM), pozzolan-modified portland cement.
- B. Silica Fume: ASTM C 1240, amorphous silica.
- C. Normal-Weight Aggregates: ASTM C 33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
 1. Maximum Coarse-Aggregate Size: **1-1/2 inches** nominal.
 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- D. Water: ASTM C 94/C 94M and potable.

2.6 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.

- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- C. Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete and complying with ASTM C 494/C 494M, Type C.
1. Available Products:
 - a. Boral Material Technologies, Inc.; Boral BCN.
 - b. Euclid Chemical Company (The); Eucon CIA.
 - c. Grace Construction Products, W. R. Grace & Co.; DCI.
 - d. Master Builders, Inc.; Rheocrete CNI.
 - e. Sika Corporation; Sika CNI.
- D. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.
1. Available Products:
 - a. Axim Concrete Technologies; Catexol 1000CI.
 - b. Boral Material Technologies, Inc.; Boral BCN2.
 - c. Cortec Corporation; MCI 2000.
 - d. Grace Construction Products, W. R. Grace & Co.; DCI-S.
 - e. Master Builders, Inc.; Rheocrete 222+.
 - f. Sika Corporation; FerroGard-901.

2.7 WATERSTOPS

- A. Chemically Resistant Flexible Waterstops: Thermoplastic elastomer rubber waterstops for embedding in concrete to prevent passage of fluids through joints; resistant to oils, solvents, and chemicals. Factory fabricate corners, intersections, and directional changes.
1. Available Products:
 - a. JP Specialties, Inc.; Earth Shield TPE-Rubber.
 - b. Vinylex Corp.; PetroStop.
 - c. WESTEC Barrier Technologies, Inc.; 600 Series TPE-R.
 2. Profile: Flat, dumbbell with center bulb.
 3. Dimensions: 6 inches by 3/16 inch thick; nontapered.

2.8 VAPOR RETARDERS

- A. Plastic Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.
1. Available Products:
- a. Fortifiber Corporation; Moistop Ultra A.
 - b. Raven Industries Inc.; Vapor Block 15.
 - c. Reef Industries, Inc.; Griffolyn Type-65G.
- B. Granular Fill: Clean mixture of crushed stone or crushed or uncrushed gravel; ASTM D 448, Size 57, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.
- C. Fine-Graded Granular Material: Clean mixture of crushed stone, crushed gravel, and manufactured or natural sand; ASTM D 448, Size 10, with 100 percent passing a 3/8-inch sieve, 10 to 30 percent passing a No. 100 sieve, and at least 5 percent passing No. 200 sieve; complying with deleterious substance limits of ASTM C 33 for fine aggregates.
- D. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
1. Available Products:
- a. Axim Concrete Technologies; Cimfilm.
 - b. Burke by Edoco; BurkeFilm.
 - c. ChemMasters; Spray-Film.
 - d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Aquafilm.
 - e. Dayton Superior Corporation; Sure Film.
 - f. Euclid Chemical Company (The); Eucobar.
- E. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- F. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- G. Water: Potable.

2.9 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 per ASTM D 2240.
- C. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- D. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

- E. Reglets: Fabricate reglets of not less than **0.0217-inch**- thick, galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

2.10 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
1. Fly Ash: 25 percent.
 2. Combined Fly Ash and Pozzolan: 25 percent.
 3. Ground Granulated Blast-Furnace Slag: 50 percent.
 4. Combined Fly Ash or Pozzolan and Ground Granulated Blast-Furnace Slag: 50 percent portland cement minimum, with fly ash or pozzolan not exceeding 25 percent.
 5. Silica Fume: 10 percent.
 6. Combined Fly Ash, Pozzolans, and Silica Fume: 35 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
 7. Combined Fly Ash or Pozzolans, Ground Granulated Blast-Furnace Slag, and Silica Fume: 50 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
 4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.

2.11 CONCRETE MIXTURES FOR EQUIPMENT SUPPORT AND BUILDING ELEMENTS

- A. Footings: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: **4000 psi** at 28 days.
 2. Maximum Water-Cementitious Materials Ratio: 0.45.
 3. Slump Limit: **4 inches** for concrete with verified slump of **2 to 4 inches** before adding high-range water-reducing admixture or plasticizing admixture, plus or minus **1 inch**.
 4. Air Content: 5-1/2 percent, plus or minus 1.5 percent at point of delivery for **1-1/2-inch** nominal maximum aggregate size.
- B. Foundation Walls: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: **4000 psi** at 28 days.

2. Maximum Water-Cementitious Materials Ratio: 0.45
 3. Slump Limit: 4 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
 4. Air Content: 5-1/2 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.
- C. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4000 psi at 28 days.
 2. Minimum Cementitious Materials Content: 520 lb/cu.
 3. Slump Limit: 4 inches, plus or minus 1 inch.
 4. Air Content: 5-1/2 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.
 5. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch nominal maximum aggregate size.
 6. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.

2.12 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.13 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
 2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..
 3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class A, **1/8 inch** for smooth-formed finished surfaces.
 2. Class B, **1/4 inch** for rough-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
1. Install keyways, reglets, recesses, and the like, for easy removal.
 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
 3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than **50 deg F** for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

3.4 SHORES AND RESHORES

- A. Comply with **ACI 318** and ACI 301 for design, installation, and removal of shoring and reshoring.
1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
- B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.
- C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 VAPOR RETARDERS

- A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
1. Lap joints **6 inches** and seal with manufacturer's recommended tape.
- B. Bituminous Vapor Retarders: Place, protect, and repair vapor retarders according to manufacturer's written instructions.
1. Place and compact a **1/2-inch-** thick layer of fine-graded granular material over granular fill.

3.6 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
1. Weld reinforcing bars according to AWS D1.4, where indicated.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

- E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.7 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
 - 2. Form keyed joints as indicated. Embed keys at least **1-1/2 inches** into concrete.
 - 3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
 - 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
 - 5. Space vertical joints in walls to accommodate efficient placement and forming (approval by Engineer is required). Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
 - 6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of **1/8 inch**. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
 - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut **1/8-inch** wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
 - 2. Terminate full-width joint-filler strips not less than **1/2 inch** or more than **1 inch** below finished concrete surface where joint sealants, specified in Division 7 Section "Joint Sealants," are indicated.
 - 3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.
- E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.8 WATERSTOPS

- A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.

3.9 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
 - 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least **6 inches** into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Maintain reinforcement in position on chairs during concrete placement.
 - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 - 4. Slope surfaces uniformly to drains where required.
 - 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - 1. When average high and low temperature is expected to fall below **40 deg F** for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.

2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- G. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below **90 deg F** at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.10 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces not exposed to view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to view.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.11 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
1. Apply float finish to surfaces to all floors and slabs.
 - a. Specified overall values of flatness, F(F) 30; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 15; for suspended slabs.

- C. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
 - 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Engineer before application.
- D. Dry-Shake Floor Hardener Finish: After initial floating, apply dry-shake floor hardener to surfaces according to manufacturer's written instructions and as follows:
 - 1. Uniformly apply dry-shake floor hardener at a rate of 100 lb/100 sq. ft. unless greater amount is recommended by manufacturer.
 - 2. Uniformly distribute approximately two-thirds of dry-shake floor hardener over surface by hand or with mechanical spreader, and embed by power floating. Follow power floating with a second dry-shake floor hardener application, uniformly distributing remainder of material, and embed by power floating.
 - 3. After final floating, apply a trowel finish. Cure concrete with curing compound recommended by dry-shake floor hardener manufacturer and apply immediately after final finishing.

3.12 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.
- D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.13 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including walls, underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.
 - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.
 - 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.14 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
 - 1. Defer joint filling until concrete has aged at least one month(s). Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.15 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a **No. 16** sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
 - 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than **1/2 inch** in any dimension in solid concrete, but not less than **1 inch** in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
 - 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
 - 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
 - 1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of **0.01 inch** wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 - 2. After concrete has cured at least 14 days, correct high areas by grinding.
 - 3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 - 4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
 - 5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of **1/4 inch** to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 - 6. Repair defective areas, except random cracks and single holes **1 inch** or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a **3/4-inch** clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse

aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Engineer's approval.

3.16 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
- B. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
 5. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
 - b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.
 6. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
 - a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
 7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than **500 psi**.
 9. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
 10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
 11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Engineer.
 12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
 13. Correct deficiencies in the Work that test reports and inspections indicate does not comply with the Contract Documents.
- C. Measure floor and slab flatness and levelness according to **ASTM E 1155** within 48 hours of finishing.

END OF SECTION 033053

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
1. Steel framing and supports for mechanical and electrical equipment.
 2. Steel framing and supports for applications where supports are not specified in other Sections.
 3. Loose bearing and leveling plates for applications where they are not specified in other Sections.
- B. Products furnished, but not installed, under this Section:
1. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.
 2. Steel weld plates and angles for casting into concrete for applications where they are not specified in other Sections.

1.3 ACTION SUBMITTALS

- A. Product Data: For the following:
1. Paint products.
 2. Grout.
- B. Shop Drawings: Show fabrication and installation details for metal fabrications.
1. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

1.4 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 2. AWS D1.6, "Structural Welding Code - Stainless Steel."

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

1.7 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorages and steel weld plates and angles for casting into concrete. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Stainless-Steel Sheet, Strip, and Plate: ASTM A 240/A 240M or ASTM A 666, Type 304 or Type 316L.
- C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304 or Type 316L.
- D. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
- E. Steel Tubing: ASTM A 500, cold-formed steel tubing.
- F. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40) unless otherwise indicated.
- G. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.
 - 1. Size of Channels: 1-5/8 by 1-5/8 inches.
 - 2. Material: Galvanized steel, ASTM A 653/A 653M, structural steel, Grade 33, with G90 coating; 0.108-inch nominal thickness.
- H. Cast Iron: Either gray iron, ASTM A 48/A 48M, or malleable iron, ASTM A 47/A 47M, unless otherwise indicated.

2.3 NONFERROUS METALS

- A. Aluminum Plate and Sheet: ASTM B 209, Alloy 6061-T6.
- B. Aluminum Extrusions: ASTM B 221, Alloy 6063-T6.
- C. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, Alloy 6061-T6.

2.4 FASTENERS

A. Anchor Bolts:

1. Anchor bolts for miscellaneous framing and architectural elements attachments shall conform to ASTM A36 or ASTM A307 Grade A except where stainless steel or other approved anchor bolts are shown on the Contract Drawings. Anchor bolts shall be of the size and configuration shown on the Contract Drawings and shall be supplied with hexagonal nuts meeting the requirements of ASTM A563 Grade A.
2. Where anchor bolts are used to anchor galvanized steel or are otherwise specified to be galvanized, they shall be hot-dip galvanized in accordance with ASTM A307.
3. Pipe sleeves around anchor bolts shall be of the size and configuration shown on the Contract Drawings.

B. Bolts:

1. Bolts, nuts and washers for miscellaneous framing and for attachment of architectural elements shall conform to ASTM A325, Type 1, nuts shall conform to ASTM A563, galvanizing shall be by the hot-dip process.
 - a. Nuts shall meet the requirements of either ASTM A563 for Grade DH, or ASTM A194 for Grade 2H.
 - b. Flat circular washers and square or rectangular beveled washers shall conform to the requirements of ASTM F436.
 - c. Bolt dimensions shall conform to the requirements for regular semi-finished hexagon bolts, ANSI B18.2.1, unless otherwise specified.
 - d. Nut dimensions shall conform to requirements for heavy hexagon semi-finished nuts ANSI/ASME B18.2.2. Washers shall be flat and smooth and their dimensions shall conform with the requirements for heavy plain washers, ANSI B18.22.1.
2. Where bolts are used to connect galvanized steel or are otherwise specified to be galvanized, bolts, nuts, and washers shall be hot-dip galvanized.

C. Stainless Steel Bolts:

1. Stainless steel bolts shall conform to ASTM F593. All underwater fasteners shall be Type 316 stainless steel. Unless otherwise specified, fasteners for aluminum members shall be Type 304 stainless steel. Fasteners for stainless steel members shall be of matching grade.
2. Stainless steel bolts shall have hexagonal heads with a raised letter or symbol on the bolts indicating the manufacturer, and shall be supplied with hexagonal nuts meeting the requirements of ASTM F594. Nuts shall be of the same alloy as the bolts and shall have a raised letter or symbol indicating the manufacturer.

D. Concrete Anchors: Concrete anchors shall be one of the types listed below or as indicated on the Contract Drawings. Unless otherwise noted, all concrete anchors which are submerged, or which are subject to vibration from equipment such as pumps and generators, shall be injected, adhesive anchors. The determination of anchors equivalent to those listed below shall be on the basis of test data performed by a commercial testing laboratory. There are two categories used:

1. Concrete anchors shall be of Stainless Steel Type 304 unless noted otherwise. Concrete anchors for stainless steel attachments shall be of matching grade.
 - a. Expansion anchors shall be wedge, sleeve, or drop-in mechanical anchors.

- 1) Expansion anchors shall be Kwik Bolt II by Hilti or Trubolt Wedge Anchor by ITW Ramset/Redhead or Power-Stud by Powers/Rawl and shall be embedded to the depths shown on the Contract Drawings. If no embedment depth is given, the standard embedment depth as recommended by the manufacturer shall be used.
 - 2) Sleeve or drop-in anchors shall be as manufactured by Hilti, ITW Ramset/Red Head or Powers/Rawl.
2. Adhesive anchors shall be two-part injection type.
- a. Adhesive anchors shall consist of threaded rods or bolts anchored with an adhesive system into hardened concrete or grout-filled masonry. The adhesive system shall use a two-component adhesive mix and shall be injected with a static mixing nozzle following manufacturer's instructions. The embedment depth of the rod/bolt shall provide a minimum allowable bond strength that is equal to the allowable tensile capacity of the rod/bolt (see Table 1) unless noted otherwise on the Contract Drawings. The adhesive system shall be "Epcon System Ceramic 6" as manufactured by ITW Ramset/Redhead, "HIT RE-500 V3 Injection Adhesive Anchor System" as manufactured by Hilti or Powerfast by Powers/Rawl.
3. Where anchor pipe is not indicated on the Contract Drawings, the wedge expansion anchor shall be used.
 4. All underwater concrete anchor bolts shall be Type 316 stainless steel and shall have nitronic 60 stainless steel nuts.
 5. Minimum Allowable Tensile Capacity (Kips) for Standard Manufacturer Embedment:

Minimum Allowable Tensile Capacity (Kips) for Indicated Embedment in 4,000psi Concrete		
Size	Concrete Anchors Wedge Type	Concrete Anchors with Injection Adhesive System @ embedment
3/8"	1.3	9.2@4-1/2"
1/2"	2.4	9.4@4-1/2"
5/8"	3.3	13.2@5-5/8"
3/4"	4.8	17.3@6-3/4"
7/8"	5.6	21.8@7-7/8"
1"	7.1	41.0@12"
1-1/4"	N/A	57.3@15"

2.5 CHAIN

- A. Stainless steel welded link type, 13 links per foot, 3/16-inch wire, with post loop at one end, chain snap and post loop at opposite end.

2.6 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
 - 1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- C. Concrete: Comply with requirements in Section 033000 "Cast-in-Place Concrete" for normal-weight, air-entrained, concrete with a minimum 28-day compressive strength of 3000 psi.

2.7 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
 - 1. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch

embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

2.8 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
- C. Prime miscellaneous framing and supports with primer specified in Section 099600 "High-Performance Coatings" where indicated.

2.9 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.
- B. Galvanize plates.
- C. Prime plates with primer specified in Section 099600 "High-Performance Coatings."

2.10 STEEL WELD PLATES AND ANGLES

- A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.11 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly.
- C. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.12 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
- B. Shop prime iron and steel items unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
- C. Preparation for Shop Priming: Prepare surfaces to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
- D. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

2.13 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

- B. As-Fabricated Finish: AA-M10 (Mechanical Finish: as fabricated, unspecified).
- C. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:
 - 1. Cast Aluminum: Heavy coat of bituminous paint.
 - 2. Extruded Aluminum: Two coats of clear lacquer.
- G. Provide surface preparation and field application of high-performance coating systems to mild steel fabrications as indicated in Section 099600 - High-Performance Coatings.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

3.3 INSTALLING BEARING AND LEVELING PLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.

- B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout.
 - 1. Use nonshrink grout, either metallic or nonmetallic, in concealed locations where not exposed to moisture; use nonshrink, nonmetallic grout in exposed locations unless otherwise indicated.
 - 2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.4 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 - 1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Section 099123 "Interior Painting."
- C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 055000

SECTION 06253 - FIBERGLASS REINFORCED PRODUCTS

PART 1 - GENERAL

1.1 WORK SPECIFIED

- A. Furnish and install, complete with accessories, all new weir plates, troughs and appurtenant items as shown on the Contract Drawings and specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Division 3 - Concrete
B. Division 5 - Metals

1.3 SUBMITTALS

- A. Shop Drawings: Submit the following for approval:
1. Manufacturer's literature, illustrations, specifications and Engineering data including: materials of construction, dimensions, weight and performance data.
 2. Drawings showing the general arrangement of the equipment and methods of installation with detailed mounting information. Indicate provisions for thermal expansion and contraction, and the capability to sustain all external and internal loads that may be applied during construction and operation.
- B. Calculations: Submit, for record purposes only, design calculations for the following:
1. Maximum deflection of weirs and troughs.
 2. Maximum stress developed in weirs and troughs.
 3. Contraction and expansion of weirs and troughs.
- C. Samples: Submit the following for approval:
1. Samples of each item furnished approximately 4-inches by 6-inches.
- D. Affidavit of Compliance: Submit Affidavit of Compliance in accordance with Section 1.5 of AWWA F102.
- E. Documentation: Submit evidence that manufacturer has fabricated, supplied, installed and placed into satisfactory service materials equipment substantially similar to that specified herein. Criteria shall be a minimum of five installations in satisfactory service for not less than five years.

1.4 FIELD MEASUREMENTS

- A. The Contractor and/or the manufacturer shall obtain or verify all field measurements necessary to perform the work required under this Specification Section.

1.5 REFERENCES

- A. AWWA F102, Matched-Die-Molded, Fiberglass-Reinforced Plastic Weir Plates, Scum Baffles and Mounting Brackets.
- B. Standards of the Reinforced Plastics/Composites Institute.
- C. National Bureau of Standards, PS 15-69.

1.6 QUALITY ASSURANCE

A. Manufacturer's Qualifications:

1. The manufacturers of the weir plates shall have experience in the design, fabrication, and operation of the equipment specified. The manufacturers shall have equipment of the type and size required by this project operating successfully in at least five (5) separate installations, each for a period of at least five (5) years. Each manufacturer shall have a proven Quality Control Program and complete manufacturing and testing facilities. Unnamed manufacturers shall submit documents demonstrating compliance with the design, and the qualifications and experiences required above.

1.7 PRODUCT HANDLING

- A. Contractor shall deliver, store, handle and protect all materials and equipment.
- B. Handle all weirs, troughs and appurtenances to prevent damage and distortion to the equipment. Equipment which is cracked, chipped, distorted or otherwise damaged or dropped will not be acceptable.
- C. Store all weirs, troughs and appurtenances in approved enclosed shelter and off the ground in accordance with the manufacturer's recommendations, unless otherwise directed by Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Construct all items of fiberglass-reinforced polyester resin laminates and to the dimensions and shapes shown.
- B. All items shall comply with the service conditions specified in Contract Documents.

2.2 LOADING CRITERIA:

- A. Weirs and troughs shall be capable of supporting, within stress and deflection limitations, the following:
 1. Deflection: Maximum wall horizontal deflection under full lateral load shall not exceed 3/16-inch or L/100, whichever is less, where L is the weir length, in inches.
- B. Thermal Expansion/Contraction: Design all items to accommodate a thermally-induced expansion or contraction in length over a temperature range of 0°F to 100°F. Items shall be capable of withstanding ambient temperature variations of up to 80F that could occur within a 24-hour period without exceeding specified deflection or stress limitations.
- C. Glass Fiber Stress: In addition to the deflection criteria specified above, construct all items such that the maximum wall stress under the most severe loading condition does not exceed 1,500 psi.

2.3 DETAILS OF CONSTRUCTION

A. Classification:

1. Weir plates, troughs, baffles and closure plates shall be Type I fabricated as defined in Section 1.7 of AWWA F102.

B. Materials of Construction:

1. Reinforcing Materials:
 - a. Weir Plates, troughs closure plates and baffles:
 - 1) Fibrous Glass: Materials used shall be continuous filament Type E reinforcing materials shall have chrome or silane finish and a styrene soluble binder compatible with the resin. Surfacing veil, if used, shall be 0.020 inch thick Type C (chemical) or equivalent, with silane finish and a styrene soluble binder on both sides and compatible with the lay-up resin.
 - 2) Synthetic Fibers: Use synthetic surfacing mat for chemical environment when Type C veil is not compatible with the intended chemical environment.
 - 3) Metallic: Metal reinforcements shall be free of rust, oil and foreign matter. Completely encapsulate reinforcement with 1/8-inch laminate to ensure against pinhole bleeding and subsequent rust streaking. Galvanizing or rust inhibitive priming does not preclude requirement for encapsulation.
 - 4) Composites: Use liquid-resistant materials such as end-grain balsa wood or closed-cell polyurethane foam for core materials. Standard wood products are not acceptable.
 2. Additives: Use thixotropic agents, mold release agents, promoters catalysts and low-shrink thermoplastic agents required for molding compounds used in the matched-die molding. Manufacturer shall submit additive schedule for approval.
 3. Plastic Resin:
 - a. Resin shall be a commercial-grade polyester thermosetting resin, which has either been evaluated in a laminate or which has been determined to be acceptable for the service conditions intended.
 - b. Resin shall contain no fillers or additives except as follows:
 - 1) A thixotropic agent, up to 5 percent by weight, which does not interfere with laminate quality or with the required chemical resistance of the laminate, may be added for viscosity control.
 - 2) Pigments, dyes or colorants used shall be suitable for contact with potable water. Pigments shall be light stable, not soluble in water and compatible with the resin. Color shall be translucent blue-green.
 - 3) Ultraviolet Stabilization: Provide 0.25 percent by weight ultraviolet stabilizers in all laminates. The laminate shall exhibit not greater than 2 percent deterioration of flexural and tensile properties after 1000 hours of exposure in a Type E, single open-flame, sunshine carbon-arc lamp apparatus as detailed in ASTM G 23.
- C. Laminate Construction for Weir Plates, Troughs, Baffles and Closure Plates:
1. General: Produce fiberglass-reinforced plastic fabrications by the matched-die molding process to ensure smooth resin-rich surfaces and edges, dimensional accuracy and consistency. Mold weir plate notches within dies for increased corrosion and weather resistance. Sand and seal all cut edges with non air inhibited resin to ensure edges are completely sealed and to prevent water or chemical penetration of laminate. Minimum thickness of weir plates shall be 1/4 inch. Minimum thickness of troughs shall be. The laminate shall consist of exterior layer and an interior layer.
 2. Exterior Layer: The exterior surface shall be free of cracks and crazing with a smooth finish. This surface shall consist of 0.01 to 0.02 inch of resin-rich layer reinforced with

- chopped strand glass. Other methods of surface protection shall be submitted to the Engineer for approval.
3. Interior Layer: The interior layer shall be constructed to provide the necessary physical properties. Where separate layers such as mat, cloth or woven roving are used, all layers shall be lapped a minimum of one inch. Laps shall be staggered. If woven roving or cloth is used, a layer of chopped strand glass shall be placed as alternate layers. A minimum of 0.1 inch of the laminate next to the exterior surface shall be reinforced with non-continuous glass strands having fiber lengths from 0.5 to 2.0 inches.
 4. Laminate glass to resin ratio shall be 30 percent glass and 70 percent resin.
 5. Cut Edges: All cut or machined edges shall be coated with resin with all voids filled and no glass fibers exposed.
 6. Dimensions:
 - a. V-Notch Weir Plates: Spacing and depth of 90-degree V-notches shall be shown. Dimensional tolerance shall be as specified in Section 3.1.2 of AWWA F102.
 - b. Rectangular Notch Weir Plates: Spacing and depth of rectangular notches shall be as shown. Dimensional tolerance shall be as specified in Section 3.1.3 of AWWA F102.
 - c. Flat Crested Weir Edge; Weir plates shall be straight and vary not more than $\pm 1/32$ inch in 12 feet. Draft angle across 0.25-inch thick dimension shall not exceed 7 degrees.
 - d. All weir plates shall be standard length not to exceed 12 feet, except for closure sections.
 - e. Weir Plate Anchor Bolt Holes - Holes for wall mounting may be round or square not less than 2-1/2 inches. Variation in center-to-center dimensions between holes shall not exceed $\pm 1/8$ inch.
 - f. Weir Plate Slots: Make slots for mounting to troughs 1/16 inch wider than bolts and provide for minimum adjustment of $\pm 1/2$ inch, after allowance for diameter of attachment bolt.
 - g. Troughs shall be furnished in sizes and quantities shown on Contract Drawings.
 7. Finish and Appearance:
 - a. The flat surfaces and edges of all weir plates, baffles, mounting brackets, closure plates and gates shall be free from porosity, voids and dry glass. Make surfaces and edges resin-rich to provide maximum resistance to corrosion and weathering.
 - b. Fabrications containing porosity, voids, dry glass, delamination or defects not allowed in Table 1 of AWWA F102 may be rejected. Repair of defects to meet maximum allowable level of deviation specified in Table 1 of AWWA F102 will be permitted provided repair work is performed in a neat manner, is blended smooth and does not affect the serviceability of the fabrication. All such remedial work shall be subject to approval of Engineer.
 8. Minimum Physical Requirements: All laminates shall meet the minimum physical properties listed below:

Property	Test Method	Value of Property
Tensile Strength	ASTM D638	15 x 103 psi
Flexural Strength	ASTM D790	25 x 103 psi

Flexural Modulus	ASTM D790	0.8 x 106 psi
Barcol Hardness	ASTM D2583	40
Izod Notched Impact Strength	ASTM D256	13 ft-lb/inch
Water absorption (24 hr @23°C)	ASTM D570	0.1% max.

2.4 IDENTIFICATION

- A. Provide each product furnished under this Specification with product identification as described in Section 6.1.1 of AWWA F102.

2.5 ACCESSORIES

- A. Provide all mounting brackets, anchor bolts, supports, stabilizing bars, angles or rods, fasteners and similar accessories required for installation of the equipment furnished. All metal accessories shall be Type 316 stainless steel.
- B. Secure ends of weir plates with butt plates.
- C. Countersink Holes: Countersink mounting holes in scum baffles so that flat heads bolts will be flush or below surface.

2.6 MANUFACTURER

- A. NEFCO
- B. Warminster Fiberglass Company.
- C. Or equal.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Contractor shall install all Work in complete accordance with the manufacturer's instructions and recommendations, and the approved Shop Drawings.
- B. Contractor shall not install damaged items until repairs are made in accordance with manufacturer's written instructions and approval by Engineer. Only minor repair work will be permitted in the field. All damaged items requiring remedial work shall be returned to the manufacturer for repair or replacement.

3.2 INSTALLATION OF WEIR PLATES, BAFFLES AND CLOSURE PLATES

- A. Install all work in conformance with the approved Shop Drawings.
- B. Install at locations and elevations shown, unless otherwise approved by the Engineer.
- C. Weir plates shall be set within plus or minus 0.005 ft of the elevation indicated on the Contract Drawings.
- D. Set all weir plates level within $\pm 1/16$ -inch over the entire weir length.

3.3 START-UP AND TESTING

- A. Contractor shall verify that all work furnished and installed conforms to the requirements the Contract Documents.

- B. Contractor shall make all adjustments required to place all Work in proper operating condition.

END OF SECTION 06253

SECTION 099600 - HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes surface preparation and field application of high-performance coating systems to items and surfaces scheduled.

1.3 DEFINITIONS

- A. Standard coating terms defined in ASTM D 16 apply to this Section.
- B. Gloss ranges used in this Section include the following:
1. Semigloss refers to medium-sheen finish with a gloss range between 30 and 65 when measured at a 60-degree meter.
 2. High gloss refers to high-sheen finish with a gloss range more than 65 when measured at a 60-degree meter.
- C. Environments: The following terms are used in Part 2 of this Section to distinguish between different corrosive exposures:
1. "Severe environments" are highly corrosive industrial atmospheres with sustained exposure to submergence, high humidity and condensation and with frequent cleaning using strong chemicals. Environments with heavy concentrations of strong chemical fumes and frequent splashing and spilling of harsh chemical products are severe environments.
 2. "Moderate environments" are corrosive industrial atmospheres with intermittent exposure to high humidity and condensation, occasional mold and mildew development, and regular cleaning with strong chemicals. Environments with exposure to heavy concentrations of chemical fumes and occasional splashing and spilling of chemical products are moderate environments.
 3. "Mild environments" are industrial atmospheres with normal exposure to moderate humidity and condensation, occasional mold and mildew development, and infrequent cleaning with strong chemicals. Environments with low levels of mild chemical fumes and occasional splashing and spilling of chemical products are mild environments. Normal outdoor weathering is also considered a mild environment.

1.4 SUBMITTALS

- A. Product Data: For each coating system indicated. Include block fillers and primers.
1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference the specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each material specified.

- B. Certification by manufacturer that products supplied comply with requirements indicated that limit the amount of VOCs in coating products.
- C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated.
 - 1. After color selection, Engineer will furnish color chips for surfaces to be coated.
- D. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate.
 - 1. Provide stepped Samples defining each separate coat, including block fillers and primers. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.
 - 2. List of material and application for each coat of each sample. Label each sample for location and application.
 - 3. Submit samples on the following substrates for Engineer's review of color and texture:
 - a. Ferrous and Nonferrous Metal: Provide two 4-inch- square samples of flat metal and two 8-inch- long samples of solid metal for each color and finish.
- E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Engineers and owners, and other information specified.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: Engage an experienced applicator who has completed high-performance coating system applications similar in material and extent to those indicated for Project and whose work has a record of successful in-service performance.
- B. Source Limitations: Obtain primers and undercoat materials for each coating system from the same manufacturer as the finish coats.
- C. Benchmark Samples (Mockups): Provide a full-coat benchmark finish sample of each type of coating and substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.
 - 1. Engineer will select one room, area, or surface to represent surfaces and conditions for application of each type of coating and substrate.
 - a. Wall Surfaces: Provide samples on at least 100 sq. ft. (9 sq. m) of wall surface.
 - b. Small Areas and Items: Engineer will designate items or areas required.
 - 2. After permanent lighting and other environmental services have been activated, apply coatings in this room or to each surface as specified. Provide the required sheen, color, and texture of each surface.
 - a. After finishes are accepted, Engineer will use the room or surface to evaluate coating systems of a similar nature.
 - 3. Final approval of colors will be from benchmark samples.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label with the following information:
 - 1. Name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.
 - 8. Handling instructions and precautions.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers used in storage in a clean condition, free of foreign materials and residue.
 - 1. Protect materials from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and applying coatings.

1.7 PROJECT CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 45 and 95 deg F (7 and 35 deg C).
- B. Do not apply coatings in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
 - 1. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before proceeding with or continuing coating operation.
 - 2. Work may continue during inclement weather only if areas and surfaces to be coated are enclosed and temperature within the area can be maintained within limits specified by manufacturer during application and drying periods.

1.8 EXTRA MATERIALS

- A. Furnish extra high-performance coating materials from the same production run as materials applied and in quantities described below. Package coating materials in unopened, factory-sealed containers for storage and identify with labels describing contents.
 - 1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. (3.785 L) or 1 case, as appropriate, of each material and color applied.

PART 2 - PRODUCTS

2.1 COATINGS MATERIALS, GENERAL

- A. Material Compatibility: Provide primers, undercoats, and finish-coat materials that are compatible with one another and substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's highest grade of the various high-performance coatings specified. Materials not displaying manufacturer's product identification are not acceptable.

1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

C. VOC Classification: Provide high-performance coating materials, including primers, undercoats, and finish-coat materials, that have a VOC classification of 450 g/L or less.

2.3 COATING MATERIALS

D. Ferrous Metal: Provide the following finish systems over ferrous-metal surfaces; applied at spreading rate recommended by manufacturer.

1. Interior, Non-Submerged: One finish coat over an intermediate coat and a primer.

a. Primer:

- 1) Tnemec: 37H Chem Prime HS or 66-1211, 3.0-4.0 mils dft.
- 2) Carboline/Kop Coat: Rustarmor 29 or Carboline D898 LT, 2.0-3.0 mils dft.
- 3) Con Lux: Rust Barrier 55 Red Primer, 1.5-2.5 mils dft.

b. Intermediate Coat:

- 1) Tnemec: 66 Epoxoline HB, 3.0-4.0 mils dft.
- 2) Carboline/Kop Coat: Carbomastic 801, 3.0-4.0 mils dft.
- 3) Con Lux: Epolon Multi-Mil Series, 4.0-5.0 mils dft.

c. Topcoat:

- 1) Tnemec: 66 Epoxoline HB, 3.0-4.0 mils dft.
- 2) Carboline/Kop Coat: Carbomastic 801, 3.0-4.0 mils dft.
- 3) Con Lux: Epolon Multi-Mil Series, 4.0-5.0 mils dft.

2. Exterior, Non-Submerged: One finish coat over an intermediate coat and a primer.

a. Primer:

- 1) Tnemec: 37H Chem Prime HS or 66-1211, 3.0-4.0 mils dft.
- 2) Carboline/Kop Coat: Rustarmor 29 or Carboline D898 LT, 2.0-3.0 mils dft.
- 3) Con Lux: Rust Barrier 55 Red Primer, 1.5-2.5 mils dft.

b. Intermediate Coat:

- 1) Tnemec: 66 Epoxoline HB, 4.0-6.0 mils dft.
- 2) Carboline/Kop Coat: Carbomastic 801, 4.0-6.0 mils dft.
- 3) Con Lux: Epolon Multi-Mil Series, 4.0-6.0 mils dft.

c. Topcoat:

- 1) Tnemec: 73 Endura-Shield, 1.5-2.5 mils dft.
- 2) Carboline/Kop Coat: Carbothane 134 HS, 1.5-2.5 mils dft.
- 3) Con Lux: Acrolon II 2200 Series, 1.5-2.5 mils dft.

3. Submerged: One finish coat over an intermediate coat and a primer.

- a. Primer:
 - 1) Tnemec: 37H Chem Prime HS or 66-1211, 3.0-4.0 mils dft.
 - 2) Carboline/Kop Coat: 340 Gold Primer, 2.0-3.0 mils dft.
 - 3) Con Lux: Epoxide 34 Ceramic White, 2.0-3.0 mils dft.
 - b. Intermediate Coat:
 - 1) Tnemec: 66 Epoxoline HB, 4.0-6.0 mils dft.
 - 2) Carboline/Kop Coat: Super Hi-Gard 891, 4.0-6.0 mils dft.
 - 3) Con Lux: Epoxide 33 Ceramic Buff, 4.0-6.0 mils dft.
 - c. Topcoat:
 - 1) Tnemec: 66 Epoxoline HB, 4.0-6.0 mils dft.
 - 2) Carboline/Kop Coat: Super Hi-Gard 891, 4.0-6.0 mils dft.
 - 3) Con Lux: Epoxide 34 Ceramic White, 4.0-6.0 mils dft.
4. Surfaces Exposed to heat above 200 deg. F: One finish coat over an intermediate coat.
- a. Intermediate Coat:
 - 1) Tnemec: 39-661 Hot Surface Aluminum, 1.3-1.7 mils dft.
 - 2) Carboline/Kop Coat: Carbo Zinc 11 HS, 1.3-1.7 mils dft.
 - 3) Con Lux: 1200 Aluminum 57, 1.3-1.7 mils dft.
 - b. Topcoat:
 - 1) Tnemec: 39-661 Hot Surface Aluminum, 1.3-1.7 mils dft.
 - 2) Carboline/Kop Coat: Carbo Zinc 11 VOC, 1.3-1.7 mils dft.
 - 3) Con Lux: 1200 Aluminum 57, 1.3-1.7 mils dft.
5. Encased in Concrete: One primer coat.
- a. Primer:
 - 1) Tnemec: 10-99 Red Metal Primer, 2.0-3.0 mils dft.
 - 2) Carboline/Kop Coat: GP 818 Primer, 2.0-3.0 mils dft.
 - 3) Con Lux: Epoxide Rust Arrestor 50 Red Primer, 2.0-3.0 mils dft.
6. Galvanized Surfaces: One finish coat over an intermediate coat.
- a. Intermediate Coat:
 - 1) Tnemec: 66 Epoxoline HB, 2.5-3.5 mils dft.
 - 2) Carboline/Kop Coat: Rustbond Penetrating Sealer, 1.0-3.0 mils dft.
 - 3) Con Lux: Epolon Multi-Mil Series, 2.5-3.5 mils dft.
 - b. Topcoat:
 - 1) Tnemec: 66 Epoxoline HB, 2.5-3.5 mils dft.
 - 2) Carboline/Kop Coat: Carbomastic 801, 4.0-6.0 mils dft.
 - 3) Con Lux: Epolon Multi-Mil Series, 2.5-3.5 mils dft.
- E. Nonferrous Metal: Provide the following finish systems over nonferrous-metal surfaces; applied at spreading rate recommended by manufacturer.
1. Intermediate Coat:
 - a. Tnemec: 66 Epoxoline HB, 2.5-3.5 mils dft.

- b. Carboline/Kop Coat: Rustbond Penetrating Sealer, 1.0-3.0 mils dft.
 - c. Con Lux: Epolon Multi-Mil Series, 2.5-3.5 mils dft.
2. Topcoat:
- a. Tnemec: 66 Epoxoline HB, 2.5-3.5 mils dft.
 - b. Carboline/Kop Coat: Carbomastic 801, 4.0-6.0 mils dft.
 - c. Con Lux: Epolon Multi-Mil Series, 2.5-3.5 mils dft.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. With Applicator present, examine substrates and conditions under which high-performance coatings will be applied, for compliance with coating application requirements.
- 1. Apply coatings only after unsatisfactory conditions have been corrected and surfaces to receive coatings are thoroughly dry.
 - 2. Start of application is construed as Applicator's acceptance of surfaces within that particular area.
- B. Coordination of Work: Review other Sections in which primers or other coatings are provided to ensure compatibility of total systems for various substrates. On request, furnish information on characteristics of specified finish materials to ensure compatible primers.
- 1. If a potential incompatibility of primers applied by others exists, obtain the following from the primer Applicator before proceeding:
 - a. Confirmation of primer's suitability for expected service conditions.
 - b. Confirmation of primer's ability to be top coated with materials specified.
 - 2. Notify Engineer about anticipated problems before using the coatings specified over substrates primed by others.

3.2 PREPARATION

- A. General: Remove plates, machined surfaces, and similar items already in place that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.
- 1. After completing coating operations, reinstall items that were removed; use workers skilled in the trades involved.
- B. Cleaning: Before applying high-performance coatings, clean substrates of substances that could impair bond of coatings. Remove oil and grease before cleaning.
- 1. Schedule cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be coated according to manufacturer's written instructions for each substrate condition and as specified.
- 1. Provide barrier coats over incompatible primers or remove primers and reprime substrate.

2. Cementitious Substrates: Prepare concrete, brick, concrete masonry block, and cement plaster surfaces to be coated. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods to prepare surfaces.
 - a. Use abrasive blast-cleaning methods if recommended by coating manufacturer.
 - b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not coat surfaces if moisture content exceeds that permitted in manufacturer's written instructions.
 3. Ferrous-Metal Substrates: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC recommendations.
 - a. Blast-clean steel surfaces as recommended by coating manufacturer and according to SSPC-SP 10/NACE No. 2.
 - b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
 - c. Touch up bare areas and shop-applied prime coats that have been damaged. Wire brush, solvent clean, and touch up with same primer as the shop coat.
 4. Nonferrous-Metal Substrates: Clean nonferrous and galvanized surfaces according to manufacturer's written instructions for the type of service, metal substrate, and application required.
 - a. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- D. Material Preparation: Carefully mix and prepare coating materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying coatings in a clean condition, free of foreign materials and residue.
 2. Stir materials before applying to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into the material. Remove film and, if necessary, strain coating material before using.
 3. Use only the type of thinners approved by manufacturer and only within recommended limits.
- E. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

- A. General: Apply high-performance coatings according to manufacturer's written instructions.
1. Use applicators and techniques best suited for the material being applied.
 2. Do not apply high-performance coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film.
 3. Coating colors, surface treatments, and finishes are indicated in the coating system descriptions.

4. Provide finish coats compatible with primers used.
 5. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, grilles, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
 - a. Coat surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.
 - b. Coat back sides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 6. All interior piping shall be painted in general accordance with Section 54.5 of "Ten States Recommended Standards for Wastewater Facilities". In lieu of painting colored bands, arrow tape and pipe labeling shall be used in the colors stated in Section 54.5.
- B. Scheduling Coating: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for coating as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and film thickness required is the same regardless of application method.
 - a. Omit primer on metal surfaces that have been shop primed and touchup painted.
 - b. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer.
 - c. Where manufacturer's written instructions require sanding, sand between applications to produce a smooth, even surface.
 - d. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until coating has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat does not cause undercoat to lift or lose adhesion.
 2. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance. Give special attention to edges, corners, crevices, welds, exposed fasteners, and similar surfaces to ensure that they receive a dry film thickness equivalent to that of flat surfaces.
- C. Application Procedures: Apply coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brush Application: Use brushes best suited for material applied and of appropriate size for the surface or item being coated.
 - a. Apply primers and first coats by brush unless manufacturer's written instructions permit using roller or mechanical applicators.
 - b. Brush out and work brush coats into surfaces in an even film.
 - c. Eliminate cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Neatly draw glass lines and color breaks.
 2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by manufacturer for the material and texture required.

3. Spray Equipment: Use mechanical methods to apply coating if permitted by manufacturer's written instructions and governing regulations.
 - a. Use spray equipment with orifice size recommended by manufacturer for material and texture required.
 - b. Apply each coat to provide the equivalent hiding of brush-applied coats.
 - c. Do not double back with spray equipment building-up film thickness of two coats in one pass, unless recommended by manufacturer.
- D. Minimum Coating Thickness: Apply each material no thinner than manufacturer's recommended spreading rate. Provide total dry film thickness of the entire system as recommended by manufacturer.
- E. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- F. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by manufacturer, to material required to be coated or finished that has not been prime coated by others.
 1. Recoat primed and sealed substrates if there is evidence of suction spots or unsealed areas in first coat, to ensure a finish coat with no burn-through or other defects caused by insufficient sealing.
- G. Completed Work: Match approved Samples for color, texture, and coverage. Remove, refinish, or recoat work that does not comply with specified requirements.

3.4 PIPING COLOR AND LABEL SCHEDULE

- A. All piping colors and labeling shall comply with the latest edition of Recommended Standards for Waste Water Facilities. The following schedule shall apply:
 1. Raw sludge line - brown with black bands
 2. Sludge recirculation suction line - brown with yellow bands
 3. Sludge draw off line - brown with orange bands
 4. Sludge recirculation discharge line - brown
 5. Natural gas line- orange (or red) with black bands
 6. Non-potable water line- blue with black bands
 7. Potable water line - blue
 8. Chlorine line - yellow
 9. Sewage (wastewater) line- gray
 10. Compressed air line - green
 11. Fuel oil/diesel - red
 12. Plumbing drains and vents - black
 13. Polymer - purple

3.5 FIELD QUALITY CONTROL

- A. Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when coatings are being applied:
 1. Owner will engage the services of a qualified testing agency to sample coating material being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.

2. Testing agency will perform appropriate tests for the following characteristics as required by Owner:
 - a. Quantitative materials analysis.
 - b. Absorption.
 - c. Accelerated weathering.
 - d. Accelerated yellowness.
 - e. Color retention.
 - f. Alkali and mildew resistance.
 - g. Abrasion resistance.
 - h. Apparent reflectivity.
 - i. Washability.
 - j. Dry opacity.
 - k. Recoating.
 - l. Skinning.
3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with specified requirements. Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. If necessary, Contractor may be required to remove rejected materials from previously coated surfaces if, on recoating with specified materials, the two coatings are not compatible.

3.6 CLEANING

- A. Cleanup: At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
 1. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

3.7 PROTECTION

- A. Protect work of other trades, whether being coated or not, against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Engineer, and leave in an undamaged condition.
 1. Provide "Wet Paint" signs to protect newly coated finishes. After completing coating operations, remove temporary protective wrappings provided by others to protect their work.
 2. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces. Comply with procedures specified in PDCA P1.

END OF SECTION 099600

SECTION 260000 – GENERAL PROVISIONS FOR ELECTRICAL WORK

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The work included in this Contract is shown on the drawings and described in these specifications. It consists of furnishing all labor, material, services, supervision and connection of all systems shown and/or specified including the requirements of:

DIVISION	0	-	BIDDING AND CONTRACT REQUIREMENTS
DIVISION	1	-	GENERAL REQUIREMENTS
DIVISION	7	-	THERMAL AND MOISTURE PROTECTION
DIVISION	26	-	ELECTRICAL

- B. Contractor is responsible to review and understand all drawings and all work of all trades to ensure a complete and thorough project.
- C. Provide all labor, tools, materials, equipment, coordination, and plans necessary for installation and proper operation of the electrical systems.
- D. Contract drawings and specifications are complementary and must be so used to ascertain all requirements of the work.

1.2 DEFINITIONS

- A. Provide, furnish, install, and furnish and install shall have the same meaning. That is, the Contractor shall purchase, transport to the site and install all required components of the work unless specifically stated otherwise in the contract documents.
- B. Wiring pertains to raceway, fittings, conductors, terminations, hangers, supports, etc. as required to form a complete system.

1.3 DRAWINGS AND SPECIFICATIONS

- A. The plans are diagrammatic and indicate only the sizes and general arrangement of conduit, devices, and equipment; exact locations of all elements shall be determined as work progresses, in cooperation with the work of other trades. It is not intended to show every item of work or minor piece of equipment, but every item shall be furnished and installed without additional remuneration as necessary to complete the system in accordance with the best practice of the trade.
- B. As previously stated, the exact locations of electrical devices and equipment is diagrammatic. The owner may request for any devices or equipment to be installed at different locations than what is indicated on the drawings in a specific area or room. It is the responsibility of the Electrical Contractor to coordinate the locations of devices in all areas prior to installation.

1.4 APPLICABLE STANDARDS

- A. All equipment shall bear the UL label.
- B. The latest edition of the following minimum standards shall apply wherever applicable:

ASA American Standards Association

ASTM	American Society for Testing Materials
ETL	Electrical Testing Laboratories, Inc.
IEEE	Institute of Electrical and Electronic Engineers
IPCEA	Insulated Power Cable for Engineers Association
OSHA	Occupational Safety and Health Act
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
UL	Underwriters Laboratories, Inc.
Power company standards and regulations.	
Local and state codes.	

- C. In the event there are conflicts between specifications and standards, standards shall govern unless specifications are in excess of standards.

1.5 PERMITS AND INSPECTIONS

- A. Permits: The Contractor shall apply for and pay the cost for any local permits necessary for the work of this contract.
- B. Inspections: The Contractor shall be responsible for obtaining inspection of and the certificate by a 3rd party inspection agency for the entire electrical system. Turn over certificate of inspection to the architect.
- C. The undertaking of periodic inspections by the Owner or Engineer shall not be construed as supervision of actual construction. The Owner or Engineer is not responsible for providing a safe place of work for the Contractor, Contractor's employees, suppliers or subcontractors for access, visits, use, work, travel or occupancy by any person.

1.6 CODES AND REGULATIONS

- A. Comply with all applicable rules and regulations of the municipal laws and ordinances and latest revisions thereof. All work shall be done in full conformity with the requirements of all authorities having jurisdiction. Modifications required by the above authorities will be made without additional charges to the Owner. Where alterations to and/or deviations from the Contract Documents are required by the authorities, report the requirements to the Engineer and secure approval before work is started.
- B. Furnish and file with the proper authorities, all drawings required by them in connection with the work. Obtain all permits, licenses, and inspections and pay all legal and proper fees and charges in this connection.
- C. Should any work shown or specified be of lighter or smaller material than Code requires, same shall be executed in strict accordance with the regulations.
- D. Heavier or larger size material than Code requires shall be furnished and installed, if required by the Plans and Specifications.
- E. This Contractor shall have the electrical work inspected from time to time by authorized inspectors and shall pay all expense incurred by same. At the completion of the work, the Contractor shall furnish a Certificate of Approval, in triplicate, indicating full approval of the work furnished and installed in this Contract from the local authority having jurisdiction.

- F. Equipment and components parts thereof shall bear manufacturer's name-plate, giving manufacturer's name, size, type and model number or serial number, electrical characteristic to facilitate maintenance and replacements. Name plates of distributors or contractors are not acceptable.
- G. Engineer will have privilege of stopping any work or use of any material that in his opinion is not being properly installed and each Contractor shall remove all materials delivered, or work erected, which does not comply with Contract Drawings and Specifications, and replace with proper materials, or correct such work as directed by the Engineer, at no additional cost to Owner.
- H. If equipment or materials are installed before proper approvals have been obtained, each Contractor shall be liable for their removal and replacement including work of other trades affected by such work, at no additional cost to Owner, if such items do not meet intent of the Drawings and Specifications.

1.7 RECORD DRAWINGS

- A. The Electrical Contractor shall keep an accurate location record of all underground and concealed piping, and of all changes from the original design. He is required to furnish this information to the Engineer prior to his application for final payment.
 - 1. Submit prior to final acceptance inspection, one complete marked-up set of reproducible engineering design drawings.
 - a. Fully illustrate all revisions made by all crafts in course of work.
 - b. Include all field changes, adjustments, variances, substitutions and deletions, including all Change Orders.
 - c. Exact location of raceways, equipment and devices.
 - d. Exact size and location of underground and under floor raceways, grounding conductors and duct banks.
 - 2. These drawings shall be for record purposes for Owner's use and are not considered shop drawings.
- B. At completion of the project, all changes and deviations from the Contract Documents shall be recorded by the Contractor.
- C. Four (4) corrected sets of all operating and maintenance instructions and complete parts lists bound in hard covers shall be furnished to the Owner.

1.8 CLEANING CONDUIT AND EQUIPMENT

- A. Conduit and electrical equipment shall be thoroughly cleaned of dirt, cuttings, and other foreign substances.

1.9 VIBRATION ISOLATION

- A. Vibration isolators shall prevent, as far as practicable, transmission of vibration, noise or hum to any part of building.
- B. Wiring and other electrical connections to equipment mounted on vibration isolators; made flexible with minimum 180 degree loop of "greenfield" in order to avoid restraining equipment and short circuiting vibration isolator.

1.10 BALANCED LOAD

- A. It is intended that design and features of the work as indicated will provide balanced load on the feeders and main service. Contractor shall provide material and installation to provide this balance load insofar as possible.
- B. Contractor shall take current and voltage measurements at all panels of at least 1/2 hour. Reconnections of loads shall be made when deemed necessary by the Engineers.

1.11 JOB CONDITIONS

- A. Examine site related work and surfaces before starting work of any Section. Failure to do so shall in no way relieve the Contractor of the responsibility to properly install the new work.
 - 1. Report to the Engineer, in writing, conditions, which will prevent proper provision of this work ten (10) days prior to bid date, in time for an addendum to be issued .
 - 2. Beginning work of any Section without reporting unsuitable conditions to the Engineer constitutes acceptance of conditions by the Contractor.
 - 3. Perform any required removal, repair or replacement of this work caused by unsuitable conditions at no additional cost to Owner.
 - 4. The Contractor is responsible for performing routine maintenance and cleaning of any existing equipment where he is making connections to new work and to the building where his work adds debris.
- B. Connections to existing work:
 - 1. Install new work and connect to existing work with minimum interference to existing facilities.
 - 2. Provide temporary shutdowns of existing services only with written consent of Owner at no additional charges and at time not to interfere with normal operation of existing facilities.
 - 3. Maintain continuous operation of existing facilities as required with necessary temporary connections between new and existing work.
 - 4. Do not interrupt alarm and emergency systems.
 - 5. Connect new work to existing work in neat and acceptable manner.
 - 6. Restore existing disturbed work to original condition including maintenance of wiring and continuity as required. Replace damaged or rusted conduit to which new equipment is being installed and connected.
- C. Removal and relocation of existing work.
 - 1. Disconnect, remove or relocate electrical material, equipment and other work noted and required by removal or changes in existing construction.
 - 2. Provide new material and equipment required for relocated equipment.
 - 3. Disconnect load and line end of conductors feeding existing equipment.
 - 4. Remove conductors from existing raceways to be rewired.
 - 5. Remove conductors and cap outlets on raceways to be abandoned.
 - 6. Dispose of removed raceways and wire.
 - 7. Dispose of removed electrical equipment as directed by Owner. The Owner shall provide a list of equipment of the Contractor of equipment to be delivered to the Owner.

1.12 SPECIAL TOOLS AND LOOSE ITEMS

- A. Furnish to Owner at completion of work:
 - 1. One set of any special tools required to operate, adjust, dismantle or repair equipment furnished under any section of this Division.

2. "Special Tools": Those not normally found in possession of maintenance personnel.
3. Keys
4. Redundant components and spare parts.

B. Deliver items to Owner and obtain receipt prior to approval of final payment.

1.13 REVIEW OF CONSTRUCTION

- A. Work may be reviewed at any time by representative of the Engineer.
- B. Advise Architect and Engineer that work is ready for review at following times:
1. Prior to backfilling buried work.
 2. Prior to concealment of work in walls and above ceilings.
 3. When all requirements of contract have been completed.
- C. Neither backfill nor conceal work without Engineer's consent.

1.14 SHOP DRAWING SUBMITTALS

- A. Submit required shop drawings, samples and product information in accordance with Division 1, requirements and as required in the various sections of these specifications.
- B. Submittals shall show evidence of checking by the Contractor for accuracy. Product information (catalog sheets) shall indicate complete catalog number, color, accessories, etc., as well as, name of manufacturer and local distributor or manufacturer's representative.
- C. Submit for review detailed coordination drawings 3/8" or larger scale plans for all major electrical equipment and any areas of conflicts by drafting location of equipment, lighting fixtures, cable trays and conduits larger than 1-1/2" trade size. Contractor shall refer to Division 1 for preparing coordination drawings.
- D. Incomplete submittals will be rejected.
- E. Additionally, the Contractor will submit data on the following:
1. All electrical equipment including all panelboards and switching devices (disconnects, switches, occupancy sensors, etc.).
 2. Fire stop seals used for wall penetrations.
 3. Any proposed variation in specified wiring plans and circuitry.
 4. All special items and panels, made or constructed specifically for this project, including wiring diagrams, component layout and component data or materials list.
 5. All settings of installed equipment, such as overcurrent protection, overload settings, temperature settings, time settings, etc. This includes equipment provided by other contractors or subcontractors and connected and tested by this Contractor.
- F. All submittals of NON SPECIFIED equipment and components will be reviewed. It is the submitting Contractor's responsibility to prove compliance and not the Architect/Engineer to prove non-compliance. The submitting Contractor will be charged the prevailing wage of the reviewing Engineer for all submittals requiring over one (1) hour to review that were not originally specified.

1.15 OPERATING INSTRUCTIONS

- A. It shall be the Contractor's responsibility to insure that the Owner's representative is given adequate instruction on the operation of all equipment prior to final payment.

1.16 TEMPORARY POWER

- A. The Contractor shall provide all temporary power to all trades for all construction locations of this contract. This will include but not be limited to temporary lighting and power outlets.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. All materials and equipment shall be new and as specified or of equal or better quality.
- B. Basic hardware and miscellaneous items shall meet existing trade standards of quality and shall carry UL or FM listings where applicable.
- C. All equipment supplied shall be the standard equipment of the manufacturer.
- D. Multiple items such as panelboards, wiring devices, switches, breakers, raceways, etc., shall be from the same manufacturer.
- E. Drawings and specifications are based on specific manufacturer's equipment. Therefore, the Contractor shall assume all responsibility, cost and coordination involved in making any necessary revisions to apply another manufacturer's equipment, even though it may be approved as an "equal" item by the Engineer.

PART 3 - EXECUTION

3.1 COORDINATION OF WORK

- A. All work shall be executed in accordance with recognized standards of workmanship. All work shall be installed in a neat and orderly manner.
- B. The Contractor shall exchange information with other Contractors and the Owner in order to insure orderly progress of the work.
- C. The Contractor must contact the Owner's representative and schedule all work ten (10) days prior to start.
- D. The Contractor shall check for possible interference before installing any items. If any work is installed, and later develops interference with other features of the design, the Contractor will be responsible to make such changes to eliminate the interference.

3.2 CEILING REMOVAL

- A. Existing ceilings which must be removed for the installation of new work or demolition of existing conditions shall be done by the Contractor. No ceiling shall be removed without prior approval of the Owner. Ceilings which must be removed shall be restored to their original condition as soon as practical and prior to final payment.
- B. The removed tile of lay-in type ceilings shall be stored either in the ceiling space or at a designated space in the building. No tiles shall be stored in the occupied space.
- C. The Contractor shall take all necessary precautions to prevent damage to the existing ceilings. All damaged ceilings shall be replaced with new ceiling construction to match the existing and to the Owner's satisfaction.

3.3 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.

3.4 FIRESTOPPING

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 7 Section "Penetration Firestopping."

END OF SECTION 260000

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.

1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Field quality-control test reports.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.
 - 1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Alcan Products Corporation; Alcan Cable Division.
 2. American Insulated Wire Corp.; a Leviton Company.
 3. General Cable Corporation.
 4. Senator Wire & Cable Company.
 5. Southwire Company.
- C. Copper Conductors: Comply with NEMA WC 70.
- D. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN.
- E. Multiconductor Cable: Comply with NEMA WC 70 for armored cable, Type AC and metal-clad cable, Type MC with ground wire. For use only where indicated on drawings and/or specifications.

2.2 CONNECTORS AND SPLICES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFC Cable Systems, Inc.
 2. Hubbell Power Systems, Inc.
 3. O-Z/Gedney; EGS Electrical Group LLC.
 4. 3M; Electrical Products Division.
 5. Tyco Electronics Corp.
- C. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Service Entrance: Type THHN-THWN, single conductors in raceway.
- B. Exposed Feeders: Type THHN-THWN, single conductors in raceway.
- C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN-THWN, single conductors in raceway.
- D. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
- E. Feeders Installed below Raised Flooring: Type THHN-THWN, single conductors in raceway.
- F. Exposed Branch Circuits, Including in Crawlspace: Type THHN-THWN, single conductors in raceway.

- G. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway.
- H. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
- I. Branch Circuits Installed below Raised Flooring: Type THHN-THWN, single conductors in raceway.
- J. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.
- K. Class 1 Control Circuits: Type THHN-THWN, in raceway.
- L. Class 2 Control Circuits: Type THHN-THWN, in raceway and Power-limited cable, concealed in building finishes.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.
- B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- E. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."
- F. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
 - 1. Use oxide inhibitor in each splice and tap conductor for aluminum conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
- B. Perform tests and inspections and prepare test reports.

- C. Tests and Inspections:
1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 2. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in cables and conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner.
 - a. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each splice 11 months after date of Substantial Completion.
 - b. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
 - c. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
- D. Test Reports: Prepare a written report to record the following:
1. Test procedures used.
 2. Test results that comply with requirements.
 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- E. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes: Grounding systems and equipment.
- B. Section includes grounding systems and equipment, plus the following special applications:
 - 1. Overhead-line grounding.
 - 2. Underground distribution grounding.
 - 3. Ground bonding common with lightning protection system.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 INFORMATIONAL SUBMITTALS

- A. Informational Submittals: Plans showing dimensioned as-built locations of grounding features specified in "Field Quality Control" Article, including the following:
 - 1. Test wells.
 - 2. Ground rods.
 - 3. Ground rings.
 - 4. Grounding arrangements and connections for separately derived systems.
 - 5. Grounding for sensitive electronic equipment.
- B. Qualification Data: For qualified testing agency and testing agency's field supervisor.
- C. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
 - 1. Instructions for periodic testing and inspection of grounding features at test wells, ground rings, and grounding connections for separately derived systems based on NFPA 70B.
 - a. Tests shall determine if ground-resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if values do not.
 - b. Include recommended testing intervals.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Member company of NETA or an NRTL.
 - 1. Testing Agency's Field Supervisor: Currently certified by NETA to supervise on-site testing.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- C. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
1. Solid Conductors: ASTM B 3.
 2. Stranded Conductors: ASTM B 8.
 3. Tinned Conductors: ASTM B 33.
 4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
 5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
 6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
 7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
- C. Bare Grounding Conductor and Conductor Protector for Wood Poles:
1. No. 4 AWG minimum, soft-drawn copper.
 2. Conductor Protector: Half-round PVC or wood molding; if wood, use pressure-treated fir, cypress, or cedar.
- D. Grounding Bus: Predrilled rectangular bars of annealed copper, 1/4 by 4 inches in cross section, with 9/32-inch holes spaced 1-1/8 inches apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V. Lexan or PVC, impulse tested at 5000 V.

2.2 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, pressure type with at least two bolts.
1. Pipe Connectors: Clamp type, sized for pipe.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.
- D. Bus-bar Connectors: Mechanical type, cast silicon bronze, solderless compression type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

2.3 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel, sectional type; 3/4 inch by 10 feet in diameter.
- B. Chemical-Enhanced Grounding Electrodes: Copper tube, straight or L-shaped, charged with nonhazardous electrolytic chemical salts.
1. Termination: Factory-attached No. 4/0 AWG bare conductor at least 48 inches long.
 2. Backfill Material: Electrode manufacturer's recommended material.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
- B. Underground Grounding Conductors: Install bare tinned-copper conductor, No. 2/0 AWG minimum.
 - 1. Bury at least 24 inches below grade.
 - 2. Duct-Bank Grounding Conductor: Bury 12 inches above duct bank when indicated as part of duct-bank installation.
- C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.
- D. Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.
 - 1. Install bus on insulated spacers 2 inches minimum from wall, 6 inches above finished floor unless otherwise indicated.
 - 2. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, and down to specified height above floor; connect to horizontal bus.
- E. Conductor Terminations and Connections:
 - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
 - 2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
 - 3. Connections to Ground Rods at Test Wells: Bolted connectors.
 - 4. Connections to Structural Steel: Welded connectors.

3.2 GROUNDING OVERHEAD LINES

- A. Comply with IEEE C2 grounding requirements.
- B. Install two parallel ground rods if resistance to ground by a single, ground-rod electrode exceeds 25 ohms.
- C. Drive ground rods until tops are 12 inches below finished grade in undisturbed earth.
- D. Ground-Rod Connections: Install bolted connectors for underground connections and connections to rods.
- E. Lightning Arrester Grounding Conductors: Separate from other grounding conductors.
- F. Secondary Neutral and Transformer Enclosure: Interconnect and connect to grounding conductor.
- G. Protect grounding conductors running on surface of wood poles with molding extended from grade level up to and through communication service and transformer spaces.

3.3 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

- A. Comply with IEEE C2 grounding requirements.
- B. Grounding Manholes and Handholes: Install a driven ground rod through manhole or handhole floor, close to wall, and set rod depth so 4 inches will extend above finished floor. If necessary,

install ground rod before manhole is placed and provide No. 1/0 AWG bare, tinned-copper conductor from ground rod into manhole through a waterproof sleeve in manhole wall. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive insulating tape or heat-shrunk insulating sleeve from 2 inches above to 6 inches below concrete. Seal floor opening with waterproof, nonshrink grout.

- C. Grounding Connections to Manhole Components: Bond exposed-metal parts such as inserts, cable racks, pulling irons, ladders, and cable shields within each manhole or handhole, to ground rod or grounding conductor. Make connections with No. 4 AWG minimum, stranded, hard-drawn copper bonding conductor. Train conductors level or plumb around corners and fasten to manhole walls. Connect to cable armor and cable shields according to written instructions by manufacturer of splicing and termination kits.
- D. Pad-Mounted Transformers and Switches: Install two ground rods and ground ring around the pad. Ground pad-mounted equipment and noncurrent-carrying metal items associated with substations by connecting them to underground cable and grounding electrodes. Install tinned-copper conductor not less than No. 2 AWG for ground ring and for taps to equipment grounding terminals. Bury ground ring not less than 6 inches from the foundation.

3.4 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.
- B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
 - 1. Feeders and branch circuits.
 - 2. Lighting circuits.
 - 3. Receptacle circuits.
 - 4. Single-phase motor and appliance branch circuits.
 - 5. Three-phase motor and appliance branch circuits.
 - 6. Flexible raceway runs.
 - 7. Armored and metal-clad cable runs.
 - 8. Busway Supply Circuits: Install insulated equipment grounding conductor from grounding bus in the switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway.
 - 9. Computer and Rack-Mounted Electronic Equipment Circuits: Install insulated equipment grounding conductor in branch-circuit runs from equipment-area power panels and power-distribution units.
 - 10. X-Ray Equipment Circuits: Install insulated equipment grounding conductor in circuits supplying x-ray equipment.
- C. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.
- D. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and components.
- E. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.

- F. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure, and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.
- G. Signal and Communication Equipment: In addition to grounding and bonding required by NFPA 70, provide a separate grounding system complying with requirements in TIA/ATIS J-STD-607-A.
 - 1. For telephone, alarm, voice and data, and other communication equipment, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.
 - 2. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4-by-4-by-12-inch grounding bus.
 - 3. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.
- H. Metal and Wood Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

3.5 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.
- C. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade unless otherwise indicated.
 - 1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
 - 2. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.
- D. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Section 260543 "Underground Ducts and Raceways for Electrical Systems," and shall be at least 12 inches deep, with cover.
 - 1. Test Wells: Install at least one test well for each service unless otherwise indicated. Install at the ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.
- E. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
 - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
 3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.
- F. Grounding and Bonding for Piping:
1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
 2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
 3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
- G. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install tinned bonding jumper to bond across flexible duct connections to achieve continuity.
- H. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 feet apart.
- I. Ground Ring: Install a grounding conductor, electrically connected to each building structure ground rod and to each steel column, extending around the perimeter of building.
1. Install tinned-copper conductor not less than No. 2/0 AWG for ground ring and for taps to building steel.
 2. Bury ground ring not less than 24 inches from building's foundation.
- J. Ufer Ground (Concrete-Encased Grounding Electrode): Fabricate according to NFPA 70; use a minimum of 20 feet of bare copper conductor not smaller than No. 4 AWG.
1. If concrete foundation is less than 20 feet long, coil excess conductor within base of foundation.
 2. Bond grounding conductor to reinforcing steel in at least four locations and to anchor bolts. Extend grounding conductor below grade and connect to building's grounding grid or to grounding electrode external to concrete.

3.6 LABELING

- A. Comply with requirements in Section 260553 "Identification for Electrical Systems" for instruction signs. The label or its text shall be green.
- B. Install labels at the telecommunications bonding conductor and grounding equalizer and at the grounding electrode conductor where exposed.
1. Label Text: "If this connector or cable is loose or if it must be removed for any reason, notify the facility manager."

3.7 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

- C. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections:
 - 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
 - 2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
 - 3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells, and at individual ground rods. Make tests at ground rods before any conductors are connected.
 - a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
 - b. Perform tests by fall-of-potential method according to IEEE 81.
 - 4. Prepare dimensioned Drawings locating each test well, ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location, and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.
- E. Grounding system will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports.
- G. Report measured ground resistances that exceed the following values:
 - 1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.
 - 2. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.
 - 3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.
 - 4. Power Distribution Units or Panelboards Serving Electronic Equipment: 1 ohm(s).
 - 5. Substations and Pad-Mounted Equipment: 5 ohms.
 - 6. Manhole Grounds: 10 ohms.
- H. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Hangers and supports for electrical equipment and systems.
 - 2. Construction requirements for concrete bases.

1.2 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. IMC: Intermediate metal conduit.
- C. RMC: Rigid metal conduit.

1.3 PERFORMANCE REQUIREMENTS

- A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- C. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.4 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Comply with NFPA 70.

1.5 COORDINATION

- A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.
- B. Coordinate installation of roof curbs, equipment supports, and roof penetrations

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Allied Tube & Conduit.
 - b. Cooper B-Line, Inc.; a division of Cooper Industries.
 - c. ERICO International Corporation.
 - d. Thomas & Betts Corporation.

- e. Unistrut; Tyco International, Ltd.
 - f. Wesanco, Inc.
- 2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
- 3. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
 - 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Hilti Inc.
 - 2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
 - 3) MKT Fastening, LLC.
 - 4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.
 - 2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
 - 2) Hilti Inc.
 - 3) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
 - 4) MKT Fastening, LLC.
 - 3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
 - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
 - 5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
 - 6. Toggle Bolts: All-steel springhead type.
 - 7. Hanger Rods: Threaded steel.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be **1/4 inch** in diameter.
- C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
 - 1. Secure raceways and cables to these supports with two-bolt conduit clamps.

3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus **200 lb**.
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 - 1. To Wood: Fasten with lag screws or through bolts.
 - 2. To New Concrete: Bolt to concrete inserts.
 - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - 4. To Existing Concrete: Expansion anchor fasteners.
 - 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete **4 inches** thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than **4 inches** thick.
 - 6. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
 - 7. To Light Steel: Sheet metal screws.
 - 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated but not less than **4 inches** larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.
- B. Use **3000-psi**, 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements are specified in Division 3 Section "Cast-in-Place Concrete."
- C. Anchor equipment to concrete base.
 - 1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 2. Install anchor bolts to elevations required for proper attachment to supported equipment.
 - 3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide minimum dry film thickness of **2.0 mils**.
- B. Touchup: Comply with requirements in Division 9 painting Sections for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 26 0529

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Metal conduits, tubing, and fittings.
 - 2. Metal wireways and auxiliary gutters.
 - 3. Boxes, enclosures, and cabinets.

1.3 DEFINITIONS

- A. ARC: Aluminum rigid conduit.
- B. GRC: Galvanized rigid steel conduit.
- C. IMC: Intermediate metal conduit.

1.4 ACTION SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. LEED Submittals:
 - 1. Product Data for Credit IEQ 4.1: For solvent cements and adhesive primers, documentation including printed statement of VOC content.
 - 2. Laboratory Test Reports for Credit IEQ 4: For solvent cements and adhesive primers, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:
 - 1. Structural members in paths of conduit groups with common supports.
 - 2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.
- B. Qualification Data: For professional engineer.
- C. Seismic Qualification Certificates: For enclosures, cabinets, and conduit racks and their mounting provisions, including those for internal components, from manufacturer.
 - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.

2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
 4. Detailed description of conduit support devices and interconnections on which the certification is based and their installation requirements.
- D. Source quality-control reports.

PART 2 - PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFC Cable Systems, Inc.
 2. Allied Tube & Conduit; a Tyco International Ltd. Co.
 3. Anamet Electrical, Inc.
 4. Electri-Flex Company.
 5. O-Z/Gedney; a brand of EGS Electrical Group.
 6. Picoma Industries, a subsidiary of Mueller Water Products, Inc.
 7. Republic Conduit.
 8. Robroy Industries.
 9. Southwire Company.
 10. Thomas & Betts Corporation.
 11. Western Tube and Conduit Corporation.
 12. Wheatland Tube Company; a division of John Maneely Company.
- B. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. GRC: Comply with ANSI C80.1 and UL 6.
- D. ARC: Comply with ANSI C80.5 and UL 6A.
- E. IMC: Comply with ANSI C80.6 and UL 1242.
- F. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit.
1. Comply with NEMA RN 1.
 2. Coating Thickness: 0.040 inch, minimum.
- G. EMT: Comply with ANSI C80.3 and UL 797.
- H. FMC: Comply with UL 1; zinc-coated steel
- I. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.
- J. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886 and NFPA 70.
 2. Fittings for EMT:
 - a. Material: Steel.
 - b. Type: Setscrew.
 3. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.

4. Coating for Fittings for PVC-Coated Conduit: Minimum thickness of 0.040 inch, with overlapping sleeves protecting threaded joints.
- K. Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 METAL WIREWAYS AND AUXILIARY GUTTERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Cooper B-Line, Inc.
 2. Hoffman; a Pentair company.
 3. Mono-Systems, Inc.
 4. Square D; a brand of Schneider Electric.
- B. Description: Sheet metal, complying with UL 870 and NEMA 250, Type 1 unless otherwise indicated, and sized according to NFPA 70.
 1. Metal wireways installed outdoors shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- D. Wireway Covers: Hinged type unless otherwise indicated.
- E. Finish: Manufacturer's standard enamel finish.

2.3 BOXES, ENCLOSURES, AND CABINETS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Adalet.
 2. Cooper Technologies Company; Cooper Crouse-Hinds.
 3. EGS/Appleton Electric.
 4. Erickson Electrical Equipment Company.
 5. FSR Inc.
 6. Hoffman; a Pentair company.
 7. Hubbell Incorporated; Killark Division.
 8. Kraloy.
 9. Milbank Manufacturing Co.
 10. Mono-Systems, Inc.
 11. O-Z/Gedney; a brand of EGS Electrical Group.
 12. RACO; a Hubbell Company.
 13. Robroy Industries.
 14. Spring City Electrical Manufacturing Company.
 15. Stahlin Non-Metallic Enclosures; a division of Robroy Industries.
 16. Thomas & Betts Corporation.
 17. Wiremold / Legrand.
- B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

- D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- E. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.
- F. Metal Floor Boxes:
 - 1. Material: Cast metal
 - 2. Type: Fully adjustable.
 - 3. Shape: Rectangular.
 - 4. Listing and Labeling: Metal floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- G. Nonmetallic Floor Boxes: Nonadjustable, round.
 - 1. Listing and Labeling: Nonmetallic floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- H. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb. Outlet boxes designed for attachment of luminaires weighing more than 50 lb shall be listed and marked for the maximum allowable weight.
- I. Paddle Fan Outlet Boxes: Nonadjustable, designed for attachment of paddle fan weighing 70 lb.
 - 1. Listing and Labeling: Paddle fan outlet boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- J. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- K. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum with gasketed cover.
- L. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
- M. Device Box Dimensions: 4 inches by 2-1/8 inches by 2-1/8 inches deep unless otherwise noted.
- N. Gangable boxes are allowed.
- O. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 1 with continuous-hinge cover with flush latch unless otherwise indicated.
 - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
 - 2. Nonmetallic Enclosures: Fiberglass.
 - 3. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.
- P. Cabinets:
 - 1. NEMA 250, Type 1 galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
 - 2. Hinged door in front cover with flush latch and concealed hinge.
 - 3. Key latch to match panelboards.
 - 4. Metal barriers to separate wiring of different systems and voltage.
 - 5. Accessory feet where required for freestanding equipment.
 - 6. Nonmetallic cabinets shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.4 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

- A. General Requirements for Handholes and Boxes:
1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.
 2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Armorcast Products Company.
 - b. Carson Industries LLC.
 - c. CDR Systems Corporation; Hubbell Power Systems.
 - d. NewBasis.
 - e. Oldcastle Precast, Inc.; Christy Concrete Products.
 - f. Synertech Moulded Products; a division of Oldcastle Precast, Inc.
 3. Standard: Comply with SCTE 77.
 4. Configuration: Designed for flush burial with open bottom unless otherwise indicated.
 5. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.
 6. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
 7. Cover Legend: Molded lettering, "ELECTRIC." Or "COMMUNICATIONS".
 8. Conduit Entrance Provisions: Conduit-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.
 9. Handholes 24 Inches Wide by 24 Inches Long and Larger: Have inserts for cable racks and pulling-in irons installed before concrete is poured.
- C. Fiberglass Handholes and Boxes: Molded of fiberglass-reinforced polyester resin, with frame and covers of polymer concrete.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Armorcast Products Company.
 - b. Carson Industries LLC.
 - c. CDR Systems Corporation; Hubbell Power Systems.
 - d. NewBasis.
 - e. Nordic Fiberglass, Inc.
 - f. Oldcastle Precast, Inc.; Christy Concrete Products.
 - g. Synertech Moulded Products; a division of Oldcastle Precast, Inc.
 3. Standard: Comply with SCTE 77.
 4. Color of Frame and Cover: Gray.
 5. Configuration: Designed for flush burial with open bottom unless otherwise indicated.
 6. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.
 7. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
 8. Cover Legend: Molded lettering, "ELECTRIC."

9. Conduit Entrance Provisions: Conduit-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.
10. Handholes 24 Inches Wide by 24 Inches Long and Larger: Have inserts for cable racks and pulling-in irons installed before concrete is poured.

2.5 SOURCE QUALITY CONTROL FOR UNDERGROUND ENCLOSURES

- A. Handhole and Pull-Box Prototype Test: Test prototypes of handholes and boxes for compliance with SCTE 77. Strength tests shall be for specified tier ratings of products supplied.
 1. Tests of materials shall be performed by an independent testing agency.
 2. Strength tests of complete boxes and covers shall be by either an independent testing agency or manufacturer. A qualified registered professional engineer shall certify tests by manufacturer.
 3. Testing machine pressure gages shall have current calibration certification complying with ISO 9000 and ISO 10012 and traceable to NIST standards.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
 1. Exposed Conduit: GRC.
 2. Concealed Conduit, Aboveground: GRC.
 3. Underground Conduit: RNC, Type EPC-40-PVC and EPC-80-PVC.
 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R or Type 4.
- B. Indoors: Apply raceway products as specified below unless otherwise indicated:
 1. Exposed, Not Subject to Physical Damage: GRC.
 2. Exposed, Not Subject to Severe Physical Damage: GRC .
 3. Exposed and Subject to Severe Physical Damage: GRC.
 4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
 5. Concealed in slab on grade: RNC (transition to 90 degree rigid steel elbow prior to exiting floor slab on grade). Conduits run within slab on deck applications are **not acceptable**.
 6. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
 7. Damp or Wet Locations: GRC.
 8. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in institutional and commercial kitchens and damp or wet locations.
- C. Minimum Raceway Size: 3/4-inch trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
 2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
 3. EMT: Use setscrew, steel fittings. Comply with NEMA FB 2.10.

- 4. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.
- E. Install nonferrous conduit or tubing for circuits operating above 60 Hz. Where aluminum raceways are installed for such circuits and pass through concrete, install in nonmetallic sleeve.
- F. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.
- G. Do not install nonmetallic conduit where ambient temperature exceeds 120 deg F.

3.2 INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
- E. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- F. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- H. Support conduit within 12 inches of enclosures to which attached.
- I. Raceways Embedded in Slabs on Grade:
 - 1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot intervals.
 - 2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
 - 3. Arrange raceways to keep a minimum of 1 inch of concrete cover in all directions.
 - 4. Do not embed threadless fittings in concrete unless specifically approved by Architect for each specific location.
 - 5. Change from RNC to EMT or GRC before rising above floor.
- J. Stub-ups to Above Recessed Ceilings:
 - 1. Use EMT for raceways.
 - 2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- K. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- L. Coat field-cut threads on PVC-coated raceway with a corrosion-preventing conductive compound prior to assembly.

- M. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- N. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- O. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- P. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
- Q. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.
- R. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- S. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.
- T. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:
 - 1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
 - 2. Where an underground service raceway enters a building or structure.
 - 3. Where otherwise required by NFPA 70.
- U. Comply with manufacturer's written instructions for solvent welding RNC and fittings.
- V. Expansion-Joint Fittings:
 - 1. Install in each run of aboveground RNC that is located where environmental temperature change may exceed 30 deg F and that has straight-run length that exceeds 25 feet. Install in each run of aboveground RMC and EMT conduit that is located where environmental temperature change may exceed 100 deg F and that has straight-run length that exceeds 100 feet.
 - 2. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:
 - a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
 - b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
 - c. Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F temperature change.
 - d. Attics: 135 deg F temperature change.
 - 3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F of temperature change for metal conduits.

4. Install expansion fittings at all locations where conduits cross building or structure expansion joints.
 5. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.
- W. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for recessed and semirecessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
1. Use LFMC in damp or wet locations subject to severe physical damage.
 2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.
- X. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.
- Y. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.
- Z. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- AA. Locate boxes so that cover or plate will not span different building finishes.
- BB. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.
- CC. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.
- DD. Set metal floor boxes level and flush with finished floor surface.
- EE. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

- A. Direct-Buried Conduit:
1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Section 312000 "Earth Moving" for pipe less than 6 inches in nominal diameter.
 2. Install backfill as specified in Section 312000 "Earth Moving."
 3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Section 312000 "Earth Moving."
 4. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through floor unless otherwise indicated. Encase elbows for stub-up ducts throughout length of elbow.
 5. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through floor.
 - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete for a minimum of 12 inches on each side of the coupling.

- b. For stub-ups at equipment mounted on outdoor concrete bases and where conduits penetrate building foundations, extend steel conduit horizontally a minimum of 60 inches from edge of foundation or equipment base. Install insulated grounding bushings on terminations at equipment.
- 6. Warning Planks: Bury warning planks approximately 12 inches above direct-buried conduits but a minimum of 6 inches below grade. Align planks along centerline of conduit.
- 7. Underground Warning Tape: Comply with requirements in Section 260553 "Identification for Electrical Systems."

3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
- B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.
- C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch above finished grade.
- D. Install handholes with bottom below frost line, below grade.
- E. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Select arm lengths to be long enough to provide spare space for future cables but short enough to preserve adequate working clearances in enclosure.
- F. Field-cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.6 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."
- B. Install fire barrier inserts for all fire penetrations which have more than 100sq inches of electrical box penetration and/or boxes which are within 24" of each other on opposite sides of the same fire barrier. Manufacturer - AD Firebarrier or approved Equal.

3.7 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533

**SECTION 260544 - SLEEVES AND SLEEVE SEALS FOR ELECTRICAL
RACEWAYS AND CABLING**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
1. Sleeves for raceway and cable penetration of non-fire-rated construction walls and floors.
 2. Sleeve-seal systems.
 3. Sleeve-seal fittings.
 4. Grout.
 5. Silicone sealants.
- B. Related Requirements:
1. Section 078413 "Penetration Firestopping" for penetration firestopping installed in fire-resistance-rated walls, horizontal assemblies, and smoke barriers, with and without penetrating items.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. LEED Submittals:
1. Product Data for Credit EQ 4.1: For sealants, documentation including printed statement of VOC content.
 2. Laboratory Test Reports for Credit EQ 4: For sealants, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

PART 2 - PRODUCTS

2.1 SLEEVES

- A. Wall Sleeves:
1. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.
 2. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.
- B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.
- C. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40.
- D. Molded-PVC Sleeves: With nailing flange for attaching to wooden forms.

- E. Molded-PE or -PP Sleeves: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.
- F. Sleeves for Rectangular Openings:
 - 1. Material: Galvanized sheet steel.
 - 2. Minimum Metal Thickness:
 - a. For sleeve cross-section rectangle perimeter less than 50 inches and with no side larger than 16 inches, thickness shall be 0.052 inch.
 - b. For sleeve cross-section rectangle perimeter 50 inches or more and one or more sides larger than 16 inches, thickness shall be 0.138 inch.

2.2 SLEEVE-SEAL SYSTEMS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Advance Products & Systems, Inc.
 - b. CALPICO, Inc.
 - c. Metraflex Company (The).
 - d. Pipeline Seal and Insulator, Inc.
 - e. Proco Products, Inc.
 - 3. Sealing Elements: EPDM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
 - 4. Pressure Plates: Carbon steel.
 - 5. Connecting Bolts and Nuts: Carbon steel, with corrosion-resistant coating of length required to secure pressure plates to sealing elements.

2.3 SLEEVE-SEAL FITTINGS

- A. Description: Manufactured plastic, sleeve-type, waterstop assembly made for embedding in concrete slab or wall. Unit shall have plastic or rubber waterstop collar with center opening to match piping OD.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Presealed Systems.

2.4 GROUT

- A. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.
- B. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- C. Design Mix: 5000-psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

2.5 SILICONE SEALANTS

- A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.
 - 2. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

PART 3 - EXECUTION

3.1 SLEEVE INSTALLATION FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

- A. Comply with NECA 1.
- B. Comply with NEMA VE 2 for cable tray and cable penetrations.
- C. Sleeves for Conduits Penetrating Above-Grade Non-Fire-Rated Concrete and Masonry-Unit Floors and Walls:
 - 1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
 - a. Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."
 - b. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect material while curing.
 - 2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
 - 3. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable unless sleeve seal is to be installed or unless seismic criteria require different clearance.
 - 4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
 - 5. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inches above finished floor level. Install sleeves during erection of floors.
- D. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies:
 - 1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
 - 2. Seal space outside of sleeves with approved joint compound for gypsum board assemblies.
- E. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- F. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

- G. Underground, Exterior-Wall and Floor Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing sleeve-seal system.

3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

- A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at raceway entries into building.
- B. Install type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.3 SLEEVE-SEAL-FITTING INSTALLATION

- A. Install sleeve-seal fittings in new walls and slabs as they are constructed.
- B. Assemble fitting components of length to be flush with both surfaces of concrete slabs and walls. Position waterstop flange to be centered in concrete slab or wall.
- C. Secure nailing flanges to concrete forms.
- D. Using grout, seal the space around outside of sleeve-seal fittings.

END OF SECTION 260544

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Identification for raceways.
 - 2. Identification of power and control cables.
 - 3. Identification for conductors.
 - 4. Underground-line warning tape.
 - 5. Warning labels and signs.
 - 6. Instruction signs.
 - 7. Equipment identification labels.
 - 8. Miscellaneous identification products.

1.3 ACTION SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.
- C. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI A13.1 and IEEE C2.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

1.5 COORDINATION

- A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.
- B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identifying devices with location of access panels and doors.
- D. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 POWER RACEWAY IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.
- B. Colors for Raceways Carrying Circuits at 600 V or Less:
 - 1. Black letters on an orange field.
 - 2. Legend: Indicate voltage and system.
- C. Colors for Raceways Carrying Circuits at More Than 600 V:
 - 1. Black letters on an orange field.
 - 2. Legend: "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch- high letters on 20-inch centers.
- D. Self-Adhesive Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- E. Snap-Around Labels for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- F. Snap-Around, Color-Coding Bands for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- G. Tape and Stencil for Raceways Carrying Circuits More Than 600 V: 4-inch- wide black stripes on 10-inch centers diagonally over orange background that extends full length of raceway or duct and is 12 inches wide. Stop stripes at legends.
- H. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking cable tie fastener.
- I. Write-On Tags: Polyester tag, 0.010 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
 - 1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
 - 2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.2 ARMORED AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Colors for Raceways Carrying Circuits at 600 V and Less:
 - 1. Black letters on an orange field
 - 2. Legend: Indicate voltage and system or service type.
- C. Colors for Raceways Carrying Circuits at More Than 600 V:
 - 1. Black letters on an orange field.
 - 2. Legend: "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch- high letters on 20-inch centers.

- D. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- E. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; 2 inches wide; compounded for outdoor use.

2.3 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- C. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking cable tie fastener.
- D. Write-On Tags: Polyester tag, **0.010 inch** thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
 - 1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
 - 2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.
- E. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- F. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

2.4 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.
- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- C. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- D. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- E. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.
- F. Write-On Tags: Polyester tag, **0.010 inch** thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
 - 1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.

2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.5 FLOOR MARKING TAPE

- A. 2-inch- wide, 5-mil pressure-sensitive vinyl tape, with black and white stripes and clear vinyl overlay.

2.6 UNDERGROUND-LINE WARNING TAPE

- A. Tape:
 1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
 2. Printing on tape shall be permanent and shall not be damaged by burial operations.
 3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.
- B. Color and Printing:
 1. Comply with ANSI Z535.1 through ANSI Z535.5.
 2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.
 3. Inscriptions for Orange-Colored Tapes: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE.
- C. Tag: **Type I:**
 1. Pigmented polyolefin, bright-colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
 2. Thickness: 4 mils.
 3. Weight: 18.5 lb/1000 sq. ft..
 4. 3-Inch Tensile According to ASTM D 882: 30 lbf, and 2500 psi.
- D. Tag: **Type II:**
 1. Multilayer laminate consisting of high-density polyethylene scrim coated with pigmented polyolefin, bright-colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
 2. Thickness: 12 mils.
 3. Weight: 36.1 lb/1000 sq. ft..
 4. 3-Inch Tensile According to ASTM D 882: 400 lbf, and 11,500 psi.
- E. Tag: **Type ID:**
 1. Detectable three-layer laminate, consisting of a printed pigmented polyolefin film, a solid aluminum-foil core, and a clear protective film that allows inspection of the continuity of the conductive core, bright-colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
 2. Overall Thickness: 5 mils.
 3. Foil Core Thickness: 0.35 mil.
 4. Weight: 28 lb/1000 sq. ft..
 5. 3-Inch Tensile According to ASTM D 882: 70 lbf, and 4600 psi.
- F. Tag: **Type IID:**
 1. Reinforced, detectable three-layer laminate, consisting of a printed pigmented woven scrim, a solid aluminum-foil core, and a clear protective film that allows inspection of the continuity of the conductive core, bright-colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
 2. Overall Thickness: 8 mils.

3. Foil Core Thickness: 0.35 mil.
4. Weight: 34 lb/1000 sq. ft..
5. 3-Inch Tensile According to ASTM D 882: 300 lbf, and 12,500 psi.

2.7 WARNING LABELS AND SIGNS

- A. Comply with NFPA 70 and 29 CFR 1910.145.
- B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.
- C. Baked-Enamel Warning Signs:
 1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
 2. 1/4-inch grommets in corners for mounting.
 3. Nominal size, 7 by 10 inches.
- D. Metal-Backed, Butyrate Warning Signs:
 1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for application.
 2. 1/4-inch grommets in corners for mounting.
 3. Nominal size, 10 by 14 inches.
- E. Warning label and sign shall include, but are not limited to, the following legends:
 1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
 2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

2.8 INSTRUCTION SIGNS

- A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes.
 1. Engraved legend with black letters on white face.
 2. Punched or drilled for mechanical fasteners.
 3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.
- B. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.
- C. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.

2.9 EQUIPMENT IDENTIFICATION LABELS

- A. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.
- B. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.
- C. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

- D. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch.
- E. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch.

2.10 CABLE TIES

- A. General-Purpose Cable Ties: Fungus inert, self extinguishing, one piece, self locking, Type 6/6 nylon.
 - 1. Minimum Width: 3/16 inch.
 - 2. Tensile Strength at 73 deg F, According to ASTM D 638: 12,000 psi.
 - 3. Temperature Range: Minus 40 to plus 185 deg F.
 - 4. Color: Black except where used for color-coding.
- B. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self extinguishing, one piece, self locking, Type 6/6 nylon.
 - 1. Minimum Width: 3/16 inch.
 - 2. Tensile Strength at 73 deg F, According to ASTM D 638: 12,000 psi.
 - 3. Temperature Range: Minus 40 to plus 185 deg F.
 - 4. Color: Black.
- C. Plenum-Rated Cable Ties: Self extinguishing, UV stabilized, one piece, self locking.
 - 1. Minimum Width: 3/16 inch.
 - 2. Tensile Strength at 73 deg F, According to ASTM D 638: 7000 psi.
 - 3. UL 94 Flame Rating: 94V-0.
 - 4. Temperature Range: Minus 50 to plus 284 deg F.
 - 5. Color: Black.

2.11 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- F. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in

- contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.
- G. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.
- H. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:
1. Outdoors: UV-stabilized nylon.
 2. In Spaces Handling Environmental Air: Plenum rated.
- I. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.
- J. Painted Identification: Comply with requirements in painting Sections for surface preparation and paint application.

3.2 IDENTIFICATION SCHEDULE

- A. Concealed Raceways, Duct Banks, More Than 600 V, within Buildings: Tape and stencil 4-inch-wide black stripes on 10-inch centers over orange background that extends full length of raceway or duct and is 12 inches wide. Stencil legend "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch- high black letters on 20-inch centers. Stop stripes at legends. Apply to the following finished surfaces:
1. Floor surface directly above conduits running beneath and within 12 inches of a floor that is in contact with earth or is framed above unexcavated space.
 2. Wall surfaces directly external to raceways concealed within wall.
 3. Accessible surfaces of concrete envelope around raceways in vertical shafts, exposed in the building, or concealed above suspended ceilings.
- B. Accessible Raceways, Armored and Metal-Clad Cables, More Than 600 V: Self-adhesive vinyl labels. Install labels at 10-foot maximum intervals.
- C. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30A, and 120V to ground: Identify with self-adhesive vinyl tape applied in bands. Install labels at 10-foot maximum intervals.
- D. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
1. Emergency Power.
 2. Power.
 3. UPS.
- E. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder and branch-circuit conductors.
 - a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
 - b. Colors for 208/120-V Circuits:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.

- c. Colors for 480/277-V Circuits:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
 - d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- F. Power-Circuit Conductor Identification, More than 600 V: For conductors in vaults, pull and junction boxes, manholes, and handholes, use nonmetallic plastic tag holder with adhesive-backed phase tags, and a separate tag with the circuit designation.
- G. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.
- H. Conductors to Be Extended in the Future: Attach write-on tags to conductors and list source.
- I. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
 - 1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
 - 2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
 - 3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.
- J. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
 - 1. Limit use of underground-line warning tape to direct-buried cables.
 - 2. Install underground-line warning tape for both direct-buried cables and cables in raceway.
- K. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
- L. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Baked-enamel warning signs.
 - 1. Comply with 29 CFR 1910.145.
 - 2. Identify system voltage with black letters on an orange background.
 - 3. Apply to exterior of door, cover, or other access.
 - 4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:
 - a. Power transfer switches.
 - b. Controls with external control power connections.
- M. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.
- N. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch- high letters for emergency instructions at equipment used for power transfer and load shedding.

- O. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
1. Labeling Instructions:
 - a. Indoor Equipment: Engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- high letters on 1-1/2-inch- high label; where two lines of text are required, use labels 2 inches high.
 - b. Outdoor Equipment: Engraved, laminated acrylic or melamine label, Stenciled legend 4 inches high.
 - c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
 - d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
 2. Equipment to Be Labeled:
 - a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be engraved, laminated acrylic or melamine label.
 - b. Enclosures and electrical cabinets.
 - c. Access doors and panels for concealed electrical items.
 - d. Switchgear.
 - e. Switchboards.
 - f. Transformers: Label that includes tag designation shown on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
 - g. Substations.
 - h. Emergency system boxes and enclosures.
 - i. Motor-control centers.
 - j. Enclosed switches.
 - k. Enclosed circuit breakers.
 - l. Enclosed controllers.
 - m. Variable-speed controllers.
 - n. Push-button stations.
 - o. Power transfer equipment.
 - p. Contactors.
 - q. Remote-controlled switches, dimmer modules, and control devices.
 - r. Battery-inverter units.
 - s. Battery racks.
 - t. Power-generating units.
 - u. Monitoring and control equipment.
 - v. UPS equipment.

END OF SECTION 260553

SECTION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
1. Fusible switches.
 2. Nonfusible switches.
 3. Receptacle switches.
 4. Shunt trip switches.
 5. Molded-case circuit breakers (MCCBs).
 6. Molded-case switches.
 7. Enclosures.

1.3 DEFINITIONS

- A. NC: Normally closed.
- B. NO: Normally open.
- C. SPDT: Single pole, double throw.

1.4 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Enclosed switches and circuit breakers shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.
1. Enclosure types and details for types other than NEMA 250, Type 1.
 2. Current and voltage ratings.
 3. Short-circuit current ratings (interrupting and withstand, as appropriate).
 4. Include evidence of NRTL listing for series rating of installed devices.
 5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.
 6. Include time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Submit on translucent log-log graph paper.
- B. Shop Drawings: For enclosed switches and circuit breakers. Include plans, elevations, sections, details, and attachments to other work.
1. Wiring Diagrams: For power, signal, and control wiring.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Seismic Qualification Certificates: For enclosed switches and circuit breakers, accessories, and components, from manufacturer.
 - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Field quality-control reports.
 - 1. Test procedures used.
 - 2. Test results that comply with requirements.
 - 3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.
- D. Manufacturer's field service report.

1.7 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For enclosed switches and circuit breakers to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
 - 1. Manufacturer's written instructions for testing and adjusting enclosed switches and circuit breakers.
 - 2. Time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Submit on translucent log-log graph paper.

1.8 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
 - 2. Fuse Pullers: Two for each size and type.

1.9 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Member company of NETA or an NRTL.
 - 1. Testing Agency's Field Supervisor: Currently certified by NETA to supervise on-site testing.
- B. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single source from single manufacturer.
- C. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- E. Comply with NFPA 70.

1.10 PROJECT CONDITIONS

- A. Environmental Limitations: Rate equipment for continuous operation under the following conditions unless otherwise indicated:
1. Ambient Temperature: Not less than **minus 22 deg F** and not exceeding **104 deg F**.
 2. Altitude: Not exceeding **6600 feet**.
- B. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
1. Notify Owner no fewer than 14 days in advance of proposed interruption of electric service.
 2. Indicate method of providing temporary electric service.
 3. Do not proceed with interruption of electric service without Owner's written permission.
 4. Comply with NFPA 70E.

1.11 COORDINATION

- A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

PART 2 - PRODUCTS

2.1 FUSIBLE SWITCHES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Square D; a brand of Schneider Electric.
 2. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
- B. Type GD, General Duty, Single Throw, 240-V ac, 800 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, with cartridge fuse interiors to accommodate specified fuses, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.
- C. Type HD, Heavy Duty, Single Throw, 600-V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, with clips or bolt pads to accommodate specified fuses, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- D. Type HD, Heavy Duty, Six Pole, Single Throw, 600-V ac, 200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, with clips or bolt pads to accommodate specified fuses, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- E. Type HD, Heavy Duty, Double Throw, 600-V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, with clips or bolt pads to accommodate specified fuses, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- F. Accessories:
1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
 2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.

3. Isolated Ground Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
4. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
5. Auxiliary Contact Kit: Two NO/NC (Form "C") auxiliary contact(s), arranged to activate before switch blades open.
6. Hookstick Handle: Allows use of a hookstick to operate the handle.
7. Lugs: Mechanical type, suitable for number, size, and conductor material.
8. Service-Rated Switches: Labeled for use as service equipment.
9. Accessory Control Power Voltage: Remote mounted and powered; 24-V ac.

2.2 NONFUSIBLE SWITCHES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Square D; a brand of Schneider Electric.
 2. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
- B. Type GD, General Duty, Single Throw, 600 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.
- C. Type HD, Heavy Duty, Single Throw, 600-V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- D. Type HD, Heavy Duty, Six Pole, Single Throw, 600-V ac, 200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- E. Type HD, Heavy Duty, Double Throw, 600-V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- F. Accessories:
 1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
 2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
 3. Isolated Ground Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
 4. Auxiliary Contact Kit: **Two** NO/NC (Form "C") auxiliary contact(s), arranged to activate before switch blades open.
 5. Hookstick Handle: Allows use of a hookstick to operate the handle.
 6. Lugs: **Mechanical** type, suitable for number, size, and conductor material.
 7. Accessory Control Power Voltage: Remote mounted and powered; 24-V ac.

2.3 MOLDED-CASE CIRCUIT BREAKERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 2. Square D; a brand of Schneider Electric.

- B. General Requirements: Comply with UL 489, NEMA AB 1, and NEMA AB 3, with interrupting capacity to comply with available fault currents.
- C. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
- D. Adjustable, Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
- E. Electronic Trip Circuit Breakers: Field-replaceable rating plug, rms sensing, with the following field-adjustable settings:
 - 1. Instantaneous trip.
 - 2. Long- and short-time pickup levels.
 - 3. Long- and short-time time adjustments.
 - 4. Ground-fault pickup level, time delay, and I^2t response.
- F. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller, and let-through ratings less than NEMA FU 1, RK-5.
- G. Integrally Fused Circuit Breakers: Thermal-magnetic trip element with integral limiter-style fuse listed for use with circuit breaker and trip activation on fuse opening or on opening of fuse compartment door.
- H. Ground-Fault, Circuit-Interrupter (GFCI) Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).
- I. Ground-Fault, Equipment-Protection (GFEP) Circuit Breakers: With Class B ground-fault protection (30-mA trip).
- J. Features and Accessories:
 - 1. Standard frame sizes, trip ratings, and number of poles.
 - 2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
 - 3. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge lighting circuits.
 - 4. Ground-Fault Protection: Comply with UL 1053; integrally mounted, self-powered [type with mechanical ground-fault indicator; relay with adjustable pickup and time-delay settings, push-to-test feature, internal memory, and shunt trip unit; and three-phase, zero-sequence current transformer/sensor.
 - 5. Communication Capability: Circuit-breaker-mounted communication module with functions and features compatible with power monitoring and control system.
 - 6. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.
 - 7. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.
 - 8. Auxiliary Contacts: Two SPDT switches with "a" and "b" contacts; "a" contacts mimic circuit-breaker contacts, "b" contacts operate in reverse of circuit-breaker contacts.
 - 9. Alarm Switch: One NO contact that operates only when circuit breaker has tripped.
 - 10. Key Interlock Kit: Externally mounted to prohibit circuit-breaker operation; key shall be removable only when circuit breaker is in off position.
 - 11. Zone-Selective Interlocking: Integral with electronic trip unit; for interlocking ground-fault protection function.
 - 12. Electrical Operator: Provide remote control for on, off, and reset operations.
 - 13. Accessory Control Power Voltage: Integrally mounted, self-powered; 24-V ac.

2.4 MOLDED-CASE SWITCHES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. Square D; a brand of Schneider Electric.
- B. General Requirements: MCCB with fixed, high-set instantaneous trip only, and short-circuit withstand rating equal to equivalent breaker frame size interrupting rating.
- C. Features and Accessories:
 - 1. Standard frame sizes and number of poles.
 - 2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
 - 3. Ground-Fault Protection: Comply with UL 1053; remote-mounted and powered type with mechanical ground-fault indicator; relay with adjustable pickup and time-delay settings, push-to-test feature, internal memory, and shunt trip unit; and three-phase, zero-sequence current transformer/sensor.
 - 4. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.
 - 5. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.
 - 6. Auxiliary Contacts: Two SPDT switches with "a" and "b" contacts; "a" contacts mimic switch contacts, "b" contacts operate in reverse of switch contacts.
 - 7. Alarm Switch: One NO contact that operates only when switch has tripped.
 - 8. Key Interlock Kit: Externally mounted to prohibit switch operation; key shall be removable only when switch is in off position.
 - 9. Zone-Selective Interlocking: Integral with ground-fault shunt trip unit; for interlocking ground-fault protection function.
 - 10. Electrical Operator: Provide remote control for on, off, and reset operations.
 - 11. Accessory Control Power Voltage: Integrally mounted, self-powered; 24-V ac.

2.5 ENCLOSURES

- A. Enclosed Switches and Circuit Breakers: NEMA AB 1, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.
 - 1. Indoor, Dry and Clean Locations: NEMA 250, Type 1.
 - 2. Outdoor Locations: NEMA 250, Type 3R.
 - 3. Other Wet or Damp, Indoor Locations: NEMA 250, Type 4.
 - 4. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA 250, Type 12.
 - 5. Hazardous Areas Indicated on Drawings: NEMA 250, Type 9.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.

- B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.
- C. Install fuses in fusible devices.
- D. Comply with NECA 1.

3.3 IDENTIFICATION

- A. Comply with requirements in Section 260553 "Identification for Electrical Systems."
 - 1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
 - 2. Label each enclosure with engraved metal or laminated-plastic nameplate.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Acceptance Testing Preparation:
 - 1. Test insulation resistance for each enclosed switch and circuit breaker, component, connecting supply, feeder, and control circuit.
 - 2. Test continuity of each circuit.
- E. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
 - 3. Perform the following infrared scan tests and inspections and prepare reports:
 - a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each enclosed switch and circuit breaker. Remove front panels so joints and connections are accessible to portable scanner.
 - b. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each enclosed switch and circuit breaker 11 months after date of Substantial Completion.
 - c. Instruments and Equipment: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
 - 4. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.
- F. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.
- G. Prepare test and inspection reports, including a certified report that identifies enclosed switches and circuit breakers and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 ADJUSTING

- A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.

END OF SECTION 262816

SECTION 400523 – PROCESS VALVES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following general-duty valves:

1. PVC Ball valve.
2. Copper-alloy ball valves.
3. Ferrous-alloy butterfly valves.
4. Bronze check valves.
5. Gray-iron swing check valves.
6. Cast-iron gate valves.
7. Knife gate valves.
8. Pinch Valves.
9. Eccentric Plug Valves.
10. Surge Relief Valves.
11. Solenoid valves.
12. Automatic Actuators.
13. Valve Stem Guides.

1.3 DEFINITIONS

- A. The following are standard abbreviations for valves:

1. CWP: Cold working pressure.
2. EPDM: Ethylene-propylene-diene terpolymer rubber.
3. NBR: Acrylonitrile-butadiene rubber.
4. PTFE: Polytetrafluoroethylene plastic.
5. SWP: Steam working pressure.
6. TFE: Tetrafluoroethylene plastic.

1.4 SUBMITTALS

- A. Product Data: For each type of valve indicated. Include body, seating, and trim materials; valve design; pressure and temperature classifications; end connections; arrangement; dimensions; and required clearances. Include list indicating valve and its application. Include rated capacities; shipping, installed, and operating weights; furnished specialties; and accessories.

1.5 QUALITY ASSURANCE

- A. ASME Compliance: ASME B31.9 for building services piping valves.
1. Exceptions: Domestic hot- and cold-water, sanitary waste, and storm drainage piping valves unless referenced.
- B. ASME Compliance for Ferrous Valves: ASME B16.10 and ASME B16.34 for dimension and design criteria.

- C. NSF Compliance: NSF 61 for valve materials for potable-water service.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Prepare valves for shipping as follows:

1. Protect internal parts against rust and corrosion.
2. Protect threads, flange faces, grooves, and weld ends.
3. Set angle, gate, and globe valves closed to prevent rattling.
4. Set ball and plug valves open to minimize exposure of functional surfaces.
5. Set butterfly valves closed or slightly open.
6. Block check valves in either closed or open position.

- B. Use the following precautions during storage:

1. Maintain valve end protection.
2. Store valves indoors and maintain at higher than ambient dew-point temperature. If outdoor storage is necessary, store valves off the ground in watertight enclosures.

- C. Use sling to handle large valves; rig sling to avoid damage to exposed parts. Do not use handwheels or stems as lifting or rigging points.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.
2. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.2 VALVES, GENERAL

- A. Refer to Part 3 "Valve Applications" Article for applications of valves.
- B. Bronze Valves: **NPS 2** and smaller with threaded ends, unless otherwise indicated.
- C. Ferrous Valves: **NPS 2-1/2** and larger with flanged ends, unless otherwise indicated.
- D. Valve Pressure and Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.
- E. Valve Sizes: Same as upstream pipe, unless otherwise indicated.
- F. Valve Actuators:
1. Chainwheel: For attachment to valves, of size and mounting height, as indicated in the "Valve Installation" Article in Part 3.
 2. Gear Drive: For quarter-turn valves **NPS 8** and larger, with handwheel for aboveground applications; AWWA C504 with operating nut for buried applications.
 3. Handwheel: For valves other than quarter-turn types.
 4. Lever Handle: For quarter-turn valves **NPS 6** and smaller, except plug valves.

- 5. Wrench: For plug valves with square heads. Furnish Owner with 1 wrench for every 10 plug valves, for each size square plug head.
- 6. Automatic Actuators: As indicated and specified.
- G. Provide with valve box.
- H. Extended Valve Stems: On insulated valves and where shown.
- I. Valve Flanges: ASME B16.1 for cast-iron valves, ASME B16.5 for steel valves, and ASME B16.24 for bronze valves.
- J. Valve Grooved Ends: AWWA C606.
- K. Threaded: With threads according to ASME B1.20.1.
- L. Valve Bypass and Drain Connections: MSS SP-45.

2.3 PVC BALL VALVES

- A. Basis of Design Model and Manufacturer: True Union 2000 Ball Valves by Spears Manufacturing Company.
 - 1. All thermoplastic ball valves shall be quarter turn manual valves manufactured to ASTM F 1970 and constructed from PVC Type I, ASTM D 1784 Cell Classification 12454 or CPVC Type IV, ASTM D 1784 Cell Classification 23447. All O-rings shall be EPDM. PVC stem with O-ring stem seal. All handles shall be polypropylene. All union nuts shall have Buttress threads. All seal carriers shall be PVC. All EPDM valves shall be certified by NSF International for use with potable water. All 1/2" - 2" valves shall be pressure rated to 235 psi, all 2-1/2" - 4" and all flanged valves to 150 psi for water @ 73°F.

2.4 COPPER-ALLOY BALL VALVES

- A. Available Manufacturers:
 - 1. Two-Piece, Copper-Alloy Ball Valves:
 - a. Conbraco Industries, Inc.; Apollo Div.
 - b. Crane Co.; Crane Valve Group; Crane Valves.
 - c. Crane Co.; Crane Valve Group; Jenkins Valves.
 - d. Crane Co.; Crane Valve Group; Stockham Div.
 - e. DynaQuip Controls.
 - f. Flow-Tek, Inc.
 - g. Grinnell Corporation.
 - h. Hammond Valve.
 - i. Honeywell Braukmann.
 - j. Jamesbury, Inc.
 - k. Jomar International, LTD.
 - l. Kitz Corporation of America.
 - m. Legend Valve & Fitting, Inc.
 - n. Milwaukee Valve Company.
 - o. Nexus Valve Specialties.
 - p. NIBCO INC.
 - q. R & M Energy Systems (Borger, TX).
 - r. Red-White Valve Corp.
 - s. Richards Industries; Marwin Ball Valves.

- t. Watts Industries, Inc.; Water Products Div.
- B. Copper-Alloy Ball Valves, General: MSS SP-110.
- C. Two-Piece, Copper-Alloy Ball Valves: Brass or bronze body with full-port, chrome-plated bronze ball; PTFE or TFE seats; and **600-psig** minimum CWP rating and blowout-proof stem.

2.5 FERROUS-ALLOY BUTTERFLY VALVES

A. Available Manufacturers:

- 1. Ferrous-Alloy Butterfly Valves:
 - a. American Valve, Inc.
 - b. Bray International, Inc.
 - c. Cooper Cameron Corp.; Cooper Cameron Valves Div.
 - d. Crane Co.; Crane Valve Group; Center Line.
 - e. Crane Co.; Crane Valve Group; Jenkins Valves.
 - f. Crane Co.; Crane Valve Group; Stockham Div.
 - g. Dover Corp.; Dover Resources Company; Norriseal Div.
 - h. General Signal; DeZurik Unit.
 - i. Grinnell Corporation.
 - j. Hammond Valve.
 - k. Kitz Corporation of America.
 - l. Legend Valve & Fitting, Inc.
 - m. Metraflex Co.
 - n. Milwaukee Valve Company.
 - o. Mueller Steam Specialty.
 - p. NIBCO INC.
 - q. Process Development & Control.
 - r. Red-White Valve Corp.
 - s. Techno Corp.
 - t. Tyco International, Ltd.; Tyco Valves & Controls, Keystone.
 - u. Watts Industries, Inc.; Water Products Div.
- B. Type 1: 200 CWP, Iron, Single-Flange Butterfly Valves with EPDM Seat and Ductile-Iron Disc:
 - 1. Basis of Design: Tyco, Keystone Figure 602 butterfly valve.
 - 2. Description:
 - a. Standard: MSS SP-67, Type I.
 - b. CWP Rating: **200 psig**.
 - c. Body Design: Lug type; suitable for bidirectional dead-end service at rated pressure without use of downstream flange.
 - d. Body Material: ASTM A 126, cast iron or ASTM A 536, ductile iron.
 - e. Seat: NBR.
 - f. Stem: One- or two-piece stainless steel.
 - g. Disc: Nickel-plated ductile iron.
- C. Type 2: 200 CWP, Iron, Single-Flange Butterfly Valves with EPDM Seat and Stainless-Steel Disc:
 - 1. Basis of Design: Tyco, Keystone K-Lok Figure 312 high performance butterfly valve.
 - 2. Description:

- a. Standard: MSS SP-68, Type I.
 - b. CWP Rating: **200 psig**.
 - c. Body Design: Lug type; suitable for bidirectional dead-end service at rated pressure without use of downstream flange.
 - d. Body Material: ASTM A 351-CF8M, stainless steel.
 - e. Seat: EPDM.
 - f. Stem: One- or two-piece stainless steel.
 - g. Disc: Stainless steel.
- D. Type 3: Flanged, **200-psig** CWP Rating, Ferrous-Alloy Butterfly Valves: Flanged-end type with one- or two-piece stem.
 - 1. Basis of Design: Pratt, Model 2FII Flanged Butterfly Valve.
 - 2. Description:
 - a. Standard: MSS SP-67, Type I.
 - b. CWP Rating: **150 psig**.
 - c. Body Design: Flanged; suitable for bidirectional dead-end service at rated pressure without use of downstream flange.
 - d. Body Material: ASTM A 126, cast iron or ASTM A 536, ductile iron.
 - e. Seat: NBR.
 - f. Stem: One- or two-piece stainless steel.
 - g. Disc: Ductile-iron.
- E. Type 4: Mechanical Joint Butterfly Valves: AWWA C504, Class 150B, short body, gray- or ductile-iron body; with bronze or gray- or ductile-iron disc, rubber seats, 304 stainless steel shaft.
 - 1. Basis of Design: Pratt, MODEL 2MII Mechanical Joint End Butterfly Valve.
 - 2. Description:
 - a. Minimum Working Pressure: **150 psig**.
 - b. End Connections: AWWA C111 Mechanical joint.
 - c. Interior Coating: Complying with AWWA C550.
 - d. Provide buried service operator

2.6 BRONZE CHECK VALVES

- A. Available Manufacturers:
 - 1. Bronze, Swing Check Valves with Metal Disc:
 - a. American Valve, Inc.
 - b. Cincinnati Valve Co.
 - c. Crane Co.; Crane Valve Group; Crane Valves.
 - d. Crane Co.; Crane Valve Group; Jenkins Valves.
 - e. Crane Co.; Crane Valve Group; Stockham Div.
 - f. Grinnell Corporation.
 - g. Hammond Valve.
 - h. Kitz Corporation of America.
 - i. Legend Valve & Fitting, Inc.
 - j. Milwaukee Valve Company.
 - k. NIBCO INC.
 - l. Powell, Wm. Co.

- m. Red-White Valve Corp.
- n. Walworth Co.
- o. Watts Industries, Inc.; Water Products Div.

B. Bronze Check Valves, General: MSS SP-80.

C. Class 150, Bronze, Swing Check Valves: Bronze body with bronze disc and seat.

2.7 IRON SWING CHECK VALVES WITH CLOSURE CONTROL

A. Class 125, Iron Swing Check Valves with Lever- and Spring-Closure Control:

1. Available Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. NIBCO INC.
 - b. GA Industries.
2. Description:
 - a. Standard: MSS SP-71, Type I.
 - b. CWP Rating: **200 psig**.
 - c. Body Design: Clear or full waterway.
 - d. Body Material: ASTM A 126, gray iron with bolted bonnet.
 - e. Ends: Flanged.
 - f. Trim: Bronze.
 - g. Gasket: Asbestos free.
 - h. Closure Control: Factory-installed, exterior lever and adjustable spring.
 - i. Closure Position Switch: Factory or field installed closure position indicating switch, rated for 10-amps/120-volts.

2.8 CAST-IRON GATE VALVES

A. AWWA, Cast-Iron Gate Valves:

1. Available Manufacturers:
 - a. American AVK Co.; Valves & Fittings Div.
 - b. American Cast Iron Pipe Co.; American Flow Control Div.
 - c. American Cast Iron Pipe Co.; Waterous Co. Subsidiary.
 - d. Crane Co.; Crane Valve Group; Stockham Div.
 - e. East Jordan Iron Works, Inc.
 - f. Grinnell Corporation; Mueller Co.; Water Products Div.
 - g. McWane, Inc.; Clow Valve Co. Div. (Oskaloosa).
 - h. McWane, Inc.; Kennedy Valve Div.
 - i. McWane, Inc.; Tyler Pipe; Utilities Div.
 - j. United States Pipe and Foundry Company.
2. Type 1, Mechanical Joint, Resilient-Seated Gate Valves: AWWA C509, gray- or ductile-iron body and bonnet; with bronze or gray- or ductile-iron gate, nonrising-stem, resilient seats, bronze stem, and stem nut.

- a. Minimum Working Pressure: **200 psig.**
 - b. End Connections: AWWA C111 Mechanical joint.
 - c. Interior Coating: Complying with AWWA C550.
3. Type 2, Flanged Joint, Resilient-Seated Gate Valves: AWWA C509, gray- or ductile-iron body and bonnet; with bronze or gray- or ductile-iron gate, nonrising-stem, resilient seats, bronze stem, and stem nut.
 - a. Minimum Working Pressure: **200 psig.**
 - b. End Connections: ANSI B16.1 Class 125 Flanged joint.
 - c. Interior Coating: Complying with AWWA C550.

2.9 KNIFE GATE VALVES

A. Available Manufacturers:

- a. Red Valve Company, Inc.
- b. Hilton Valve, Incorporated
- c. Fabri-Valve, ITT Industries.

B. Bronze, Rising-Stem, Solid-Wedge Gate Valves:

1. Basis of Design: Basis of Design: ITT Industries, Fabri-Valve, Figure CF 134 Knife Gate Valves.
2. Description:
 - a. Knife Gate Valves, General: MSS SP-81, with ferrous-alloy hand wheel.
 - b. Class 150, Knife Gate Valves: The knife gate valve shall be bonneted, wafer type made with a cast iron or stainless steel body. Cast iron body valves shall have a fabricated stainless steel liner.
 - c. Standard flange holes shall be drilled and tapped. Flange dimensions shall meet MSS SP-81 and ANSI B16.5 Class 125/150 requirements.
 - d. The valve has a raised face flanges and meets MSS SP-81 face-to-face dimensions. Valve shall have all wetted parts made of 304 or 316 stainless steel. Stainless steel liner shall extend through the valve chest to the top of the packing gland. Both sides of the gate shall be finish ground. The stem shall be stainless steel and have double lead threads. The yoke nut shall be acid-resistant bronze. The valve shall have a raised seat with a relieved area around the seat to prevent jamming.
 - e. The valve gate shall be suitable for 150-psi pressure differential. The packing gland shall have three (3) layers of fiber packing with a 4th elastomer seal. The valve shall be metal seated with a round port.

2.10 PINCH VALVES

A. Available Manufacturers:

- a. Red Valve Company, Inc.

B. Iron Body, Non-Metalic Sleeve Flanged Pinch Valves:

1. Basis of Design: Basis of Design: Red Valve, Series 5200E Pinch Valves.
2. Description:

- a. CWP Rating: 150 psig.
- b. Body Design: Flanged ASTM Class 150 type.
- c. Body Material: Ductile-Iron.
- d. Sleeve: EPDM, Cone Sleeve.
- e. Stem: One- or two-piece stainless steel.

2.11 ECCENTRIC PLUG VALVES

A. Available Manufacturers:

1. General Signal; DeZurik Unit.
2. Milliken Valve Company.
3. Olson Technologies; Homestead Div.
4. Pratt, Henry Company.
5. Val-Matic Valve & Mfg. Corp.

B. Resilient-Seated, Eccentric Plug Valves, NPS 3 and Larger: ASTM A126 Class B cast iron body, MSS SP-108, and rated for 175-psig minimum CWP, ANSI B16.1 Class 125 Flanged joint.

1. Resilient Seating Material: Suitable for wastewater service, unless otherwise indicated.
2. Interior coating according to AWWA C550.
3. Type 1, Mechanical Joint: gray- or ductile-iron body and bonnet; with bronze or gray- or ductile-iron gate, nonrising-stem, resilient seats, bronze stem, and stem nut.
4. Type 2, Flanged Joint: gray- or ductile-iron body and bonnet; with bronze or gray- or ductile-iron gate, nonrising-stem, resilient seats, bronze stem, and stem nut.

2.12 SURGE RELIEF VALVE

A. Basis-of-Design Product: Subject to compliance with requirements, provide Singer model 106-RPS-L&H Surge Anticipating Relief Valve.

1. Body: ASTM A 536 - 65/45/12 Ductile Iron
2. Disc: B16 Brass / B62 Bronze / A48 or A536 Ductile Iron.
3. Seat Ring: AISI 316 Stainless Steel.
4. Diaphragm: EPDM.
5. Wetted, Internal Work Parts: Brass and rubber.
6. Valve Seat and Stem: Noncorrosive.
7. Valve Size, Capacity, and Operating Pressure: Comply with ASME Boiler and Pressure Vessel Code: Section IV, and selected to suit system in which installed, with operating pressure and capacity factory set and field adjustable.

2.13 SOLENOID VALVES

A. Solenoid Valves, NPS 2" and smaller:

1. Available Manufacturers and Products:
 - a. Asco, Series 8210
2. Two way internal pilot operated diaphragm type, brass body, 250 psi CWP, resilient seat suitable for air or water. Molded epoxy solenoid coil, NEMA insulation Class F, 120 VAC, 60 Hz. NEMA Type 4 solenoid enclosure. Normal position and size as indicated on the drawings.

2.14 VALVE STEM GUIDES

- A. Stem Guides shall be constructed of cast stainless steel, type 316. Stem guides fabricated by welding stainless steel shall not be permitted. Stem guides shall include a bronze bushing with an inside diameter 1/16" larger than the outside diameter of the extension stem and shall be retained with two stainless steel screws.
- B. The stem guide shall be of the adjustable design for plumb alignment. The adjusting bolt and washer shall be type 316 stainless. Stem guides shall be spaced so that the unsupported length between extension stem guides shall not exceed 7 feet.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine piping system for compliance with requirements for installation tolerances and other conditions affecting performance.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Examine valve interior for cleanliness, freedom from foreign matter, and corrosion. Remove special packing materials, such as blocks, used to prevent disc movement during shipping and handling.
- C. Operate valves in positions from fully open to fully closed. Examine guides and seats made accessible by such operations.
- D. Examine threads on valve and mating pipe for form and cleanliness.
- E. Examine mating flange faces for conditions that might cause leakage. Check bolting for proper size, length, and material. Verify that gasket is of proper size, that its material composition is suitable for service, and that it is free from defects and damage.
- F. Do not attempt to repair defective valves; replace with new valves.

3.2 VALVE APPLICATIONS

- A. If valves with specified SWP classes or CWP ratings are not available, the same types of valves with higher SWP class or CWP ratings may be substituted.
- B. Wastewater Piping: Includes process waste stream piping and sewage piping:
 - 1. Use the following for buried valves underground:
 - a. **NPS 3** through NPS 10: Type 1, Eccentric Plug Valves, mechanical joint and valve box.
 - b. **NPS 12** and larger: Type 3, Type 1, Eccentric Plug Valves, mechanical joint and valve box.
 - 2. Use the following for valves in vaults, tunnels and aboveground:
 - a. **NPS 2** and Smaller: Ball Valves, Two-Piece, Copper-Alloy Ball Valves.
 - b. **NPS 2-1/2** through NPS 8: Type 2, Resilient-Seated Eccentric Plug Valves, flange joint.
 - c. **NPS 10** and Larger: Type 1, Ferrous Alloy Butterfly Valves, flange joint with manual gear drive exposed actuator.

- C. Sludge Piping: Includes supernatant piping, return activated sludge piping, waste sludge piping and thickened sludge piping. 100 psi operating pressure; 150 psi test pressure:
1. Use the following for buried valves underground:
 - a. **NPS 3** through NPS 10: Type 1, Eccentric Plug Valves, mechanical joint and valve box.
 - b. **NPS 12** and larger: Type 3, Type 1, Eccentric Plug Valves, mechanical joint and valve box.
 2. Use the following for valves in vaults, tunnels and aboveground:
 - a. **NPS 2** and Smaller: Ball Valves, Two-Piece, Copper-Alloy Ball Valves.
 - b. **NPS 2-1/2** and Larger:
 - 1) Type 2, Resilient-Seated Eccentric Plug Valves, flange joint.
 - 2) Iron Swing Check Valves, Type 1, Class 125, cast iron with position switch.
- D. Low-Pressure, Process Air Aeration Piping: Use the following types of valves:
1. Use the following for valves in vaults, tunnels and aboveground:
 - a. **NPS 2** and Smaller: Ball Valves, Two-Piece, Copper-Alloy Ball Valves.
 - b. **NPS 2-1/2** through NPS 6, Manual Operation: Type 1, Ferrous Alloy Butterfly Valves, flange joint with lever handle actuator.
 - c. **NPS 8** and Larger, Manual Operation: Type 1, Ferrous Alloy Single Flange Butterfly Valves, flange joint with manual gear drive exposed actuator.
- E. Non-potable Process Water and Seal Water Piping: Includes all non-potable water or effluent water for process water in the plant. 100 psi operating pressure; 150 psi test pressure:
1. Use the following for buried valves underground:
 - a. **NPS 3** through NPS 10: Type 1, AWWA, Cast Iron Gate Valve, Nonrising-Stem, Resilient-Seated Gate Valves, mechanical joint and valve box.
 - b. **NPS 12** and larger: Type 3, AWWA, Cast-Iron Butterfly Valves, mechanical joint with buried manual operator and valve box.
 2. Use the following for valves in vaults, tunnels, tanks and aboveground:
 - a. **NPS 2** and Smaller:
 - 1) Ball Valves, Two-Piece, Copper-Alloy Ball Valves.
 - 2) Swing Check Valves, Class 150, bronze.
 - b. **NPS 2-1/2** through NPS 8:
 - 1) Gate Valves, Type 2, AWWA, Nonrising-Stem, Resilient-Seated Gate Valves, flange joint.
 - 2) Swing Check Valves, Class 125, gray iron.
 - c. **NPS 10** and Larger:

- 1) Butterfly Valves, Type 1, Ferrous Alloy Butterfly Valves, flange joint with manual gear drive exposed actuator.
- 2) Swing Check Valves, Class 125, gray iron.

3.3 VALVE INSTALLATION

- A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
- C. Locate valves for easy access and provide separate support where necessary.
- D. Install valves in horizontal piping with stem at or above center of pipe.
- E. Install valves in position to allow full stem movement.
- F. Install check valves for proper direction of flow and as follows:
 1. Swing Check Valves: In horizontal position with hinge pin level.
- G. Install valve stem guides where indicated and such that the unsupported length between extension stem guides shall not exceed 7 feet.

3.4 JOINT CONSTRUCTION

- A. Refer to Division 15 Section "Basic Mechanical Materials and Methods" for basic piping joint construction.
- B. Grooved Joints: Assemble joints with keyed coupling housing, gasket, lubricant, and bolts according to coupling and fitting manufacturer's written instructions.
- C. Soldered Joints: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder; and ASTM B 828 procedure, unless otherwise indicated.

3.5 ADJUSTING

- A. Adjust or replace valve packing after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves if persistent leaking occurs.

END OF SECTION 400523

SECTION 400529 - HANGERS AND SUPPORTS FOR PROCESS PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
1. Metal pipe hangers and supports.
 2. Trapeze pipe hangers.
 3. Metal framing systems.
 4. Fastener systems.
 5. Equipment supports.
- B. Related Requirements:
1. Section 055000 "Metal Fabrications" for structural-steel shapes and plates for trapeze hangers for pipe and equipment supports.

1.3 ACTION SUBMITTALS

- A. Shop Drawings: Show fabrication and installation details and include calculations for the following:
1. Trapeze pipe hangers.
 2. Metal framing systems.
 3. Fiberglass strut systems.
 4. Pipe stands.
 5. Equipment supports.

1.4 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.5 QUALITY ASSURANCE

- A. Structural-Steel Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M.
- B. Pipe Welding Qualifications: Qualify procedures and operators according to 2015 ASME Boiler and Pressure Vessel Code, Section IX.

PART 2 - PRODUCTS

2.1 METAL PIPE HANGERS AND SUPPORTS

- A. Carbon-Steel Pipe Hangers and Supports:
1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
 2. Galvanized Metallic Coatings: Pregalvanized, hot-dip galvanized, or electro-galvanized.

3. Nonmetallic Coatings: Plastic coated or epoxy powder coated.
4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
5. Hanger Rods: Continuous-thread rod, nuts, and washer made of stainless steel.

B. Stainless-Steel Pipe Hangers and Supports:

1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
2. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
3. Hanger Rods: Continuous-thread rod, nuts, and washer made of stainless steel.

C. Copper Pipe and Tube Hangers:

1. Description: MSS SP-58, Types 1 through 58, copper-coated-steel, factory-fabricated components.

2.2 TRAPEZE PIPE HANGERS

- A. Description: MSS SP-58, Type 59, shop- or field-fabricated pipe-support assembly, made from structural-carbon-steel shapes, with MSS SP-58 carbon-steel hanger rods, nuts, saddles, and U-bolts.

2.3 METAL FRAMING SYSTEMS

A. MFMA Manufacturer Metal Framing Systems:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. B-line, an Eaton business.
 - b. Flex-Strut Inc.
 - c. G-Strut.
 - d. Unistrut; Part of Atkore International.
2. Description: Shop- or field-fabricated pipe-support assembly, made of steel channels, accessories, fittings, and other components for supporting multiple parallel pipes.
3. Standard: Comply with MFMA-4, factory-fabricated components for field assembly.
4. Channels: Continuous slotted stainless-steel, Type 304 channel with inturred lips.
5. Channel Width: Selected for applicable load criteria.
6. Channel Nuts: Formed or stamped nuts or other devices designed to fit into channel slot and, when tightened, prevent slipping along channel.
7. Hanger Rods: Continuous-thread rod, nuts, and washer made of stainless steel.
8. Metallic Coating: No coating.

2.4 FASTENER SYSTEMS

- A. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

- B. Mechanical-Expansion Anchors: Insert-wedge-type anchors, for use in hardened portland cement concrete, with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

1. Indoor Applications: stainless steel.
2. Outdoor Applications: Stainless steel.

2.5 EQUIPMENT SUPPORTS

2.6 MATERIALS

- A. Carbon Steel: ASTM A1011/A1011M.
- B. Structural Steel: ASTM A36/A36M carbon-steel plates, shapes, and bars; black and galvanized.
- C. Stainless Steel: ASTM A240/A240M.
- D. Grout: ASTM C1107/C1107M, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
1. Properties: Nonstaining, noncorrosive, and nongaseous.
 2. Design Mix: **5000-psi**, 28-day compressive strength.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping materials and installation, for penetrations through fire-rated walls, ceilings, and assemblies.
- B. Strength of Support Assemblies: Where not indicated, select sizes of components, so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus **200 lb**.

3.2 HANGER AND SUPPORT INSTALLATION

- A. Metal Pipe-Hanger Installation: Comply with MSS SP-58. Install hangers, supports, clamps, and attachments as required to properly support piping from building structure.
- B. Metal Trapeze Pipe-Hanger Installation: Comply with MSS SP-58. Arrange for grouping of parallel runs of horizontal piping, and support together on field-fabricated trapeze pipe hangers.
1. Pipes of Various Sizes: Support together and space trapezes for smallest pipe size, or install intermediate supports for smaller-diameter pipes as specified for individual pipe hangers.
 2. Field fabricate from ASTM A36/A36M carbon-steel shapes selected for loads being supported. Weld steel according to AWS D1.1/D1.1M.
- C. Fiberglass Pipe-Hanger Installation: Comply with applicable portions of MSS SP-58. Install hangers and attachments as required to properly support piping from building structure.
- D. Metal Framing System Installation: Arrange for grouping of parallel runs of piping, and support together on field-assembled metal framing systems.
- E. Thermal Hanger-Shield Installation: Install in pipe hanger or shield for insulated piping.
- F. Fastener System Installation:

1. Install powder-actuated fasteners for use in lightweight concrete or concrete slabs less than 4 inches thick in concrete, after concrete is placed and completely cured. Use operators that are licensed by powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer's operating manual.
 2. Install mechanical-expansion anchors in concrete, after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
- G. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.
- H. Equipment Support Installation: Fabricate from welded-structural-steel shapes.
- I. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
- J. Install lateral bracing with pipe hangers and supports to prevent swaying.
- K. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms, and install reinforcing bars through openings at top of inserts.
- L. Load Distribution: Install hangers and supports, so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- M. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.

3.3 EQUIPMENT SUPPORTS

- A. Fabricate structural-steel stands to suspend equipment from structure overhead or to support equipment above floor.
- B. Grouting: Place grout under supports for equipment, and make bearing surface smooth.
- C. Provide lateral bracing, to prevent swaying, for equipment supports.

3.4 METAL FABRICATIONS

- A. Cut, drill, and fit miscellaneous metal fabrications for trapeze pipe hangers and equipment supports.
- B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.
- C. Field Welding: Comply with AWS D1.1/D1.1M procedures for shielded, metal arc welding; appearance and quality of welds; and methods used in correcting welding work; and with the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. Finish welds at exposed connections, so no roughness shows after finishing and so contours of welded surfaces match adjacent contours.

3.5 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.
- B. Trim excess length of continuous-thread hanger and support rods to **1-1/2 inches**.

3.6 PAINTING

- A. Touchup: Cleaning and touchup painting of field welds, bolted connections, and abraded, shop-painted areas on miscellaneous metal are specified in Section 099600 "High-Performance Coatings."
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas, and apply galvanizing-repair paint to comply with ASTM A780/A780M.

3.7 HANGER AND SUPPORT SCHEDULE

- A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.
- B. Comply with MSS SP-58 for pipe-hanger selections and applications that are not specified in piping system Sections.
- C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finishes.
- D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.
- E. Use carbon-steel pipe hangers and supports, metal trapeze pipe hangers and metal framing systems and attachments for general service applications.
- F. Use stainless-steel pipe hangers and Stainless-steel attachments for hostile environment applications.
- G. Use copper-plated pipe hangers and copper or stainless-steel attachments for copper piping and tubing.
- H. Use padded hangers for piping that is subject to scratching.
- I. Use thermal hanger-shield inserts for insulated piping and tubing.
- J. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
 - 1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated, stationary pipes **NPS 1/2 to NPS 30**.
 - 2. Yoke-Type Pipe Clamps (MSS Type 2): For suspension of up to **1050 deg F** pipes **NPS 4 to NPS 24**, requiring up to **4 inches** of insulation.
 - 3. Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3): For suspension of pipes **NPS 3/4 to NPS 36**, requiring clamp flexibility and up to **4 inches** of insulation.
 - 4. Steel Pipe Clamps (MSS Type 4): For suspension of cold and hot pipes **NPS 1/2 to NPS 24** if little or no insulation is required.
 - 5. Pipe Hangers (MSS Type 5): For suspension of pipes **NPS 1/2 to NPS 4**, to allow off-center closure for hanger installation before pipe erection.
 - 6. Adjustable, Swivel Split- or Solid-Ring Hangers (MSS Type 6): For suspension of noninsulated, stationary pipes **NPS 3/4 to NPS 8**.

7. Adjustable, Steel Band Hangers (MSS Type 7): For suspension of noninsulated, stationary pipes **NPS 1/2 to NPS 8**.
 8. Adjustable Band Hangers (MSS Type 9): For suspension of noninsulated, stationary pipes **NPS 1/2 to NPS 8**.
 9. Adjustable, Swivel-Ring Band Hangers (MSS Type 10): For suspension of noninsulated, stationary pipes **NPS 1/2 to NPS 8**.
 10. Split Pipe Ring with or without Turnbuckle Hangers (MSS Type 11): For suspension of noninsulated, stationary pipes **NPS 3/8 to NPS 8**.
 11. Extension Hinged or Two-Bolt Split Pipe Clamps (MSS Type 12): For suspension of noninsulated, stationary pipes **NPS 3/8 to NPS 3**.
 12. U-Bolts (MSS Type 24): For support of heavy pipes **NPS 1/2 to NPS 30**.
 13. Clips (MSS Type 26): For support of insulated pipes not subject to expansion or contraction.
 14. Pipe Saddle Supports (MSS Type 36): For support of pipes **NPS 4 to NPS 36**, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate.
 15. Pipe Stanchion Saddles (MSS Type 37): For support of pipes **NPS 4 to NPS 36**, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate, and with U-bolt to retain pipe.
 16. Adjustable Pipe Saddle Supports (MSS Type 38): For stanchion-type support for pipes **NPS 2-1/2 to NPS 36** if vertical adjustment is required, with steel-pipe base stanchion support and cast-iron floor flange.
 17. Single-Pipe Rolls (MSS Type 41): For suspension of pipes **NPS 1 to NPS 30**, from two rods if longitudinal movement caused by expansion and contraction occurs.
 18. Adjustable Roller Hangers (MSS Type 43): For suspension of pipes **NPS 2-1/2 to NPS 24**, from single rod if horizontal movement caused by expansion and contraction occurs.
 19. Complete Pipe Rolls (MSS Type 44): For support of pipes **NPS 2 to NPS 42** if longitudinal movement caused by expansion and contraction occurs but vertical adjustment is unnecessary.
 20. Pipe Roll and Plate Units (MSS Type 45): For support of pipes **NPS 2 to NPS 24** if small horizontal movement caused by expansion and contraction occurs and vertical adjustment is unnecessary.
 21. Adjustable Pipe Roll and Base Units (MSS Type 46): For support of pipes **NPS 2 to NPS 30** if vertical and lateral adjustment during installation, in addition to expansion and contraction, is required.
- K. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers **NPS 3/4 to NPS 24**.
 2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers **NPS 3/4 to NPS 24** if longer ends are required for riser clamps.
- L. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel Turnbuckles (MSS Type 13): For adjustment of up to **6 inches** for heavy loads.
 2. Steel Clevises (MSS Type 14): For **120 to 450 deg F** piping installations.
 3. Swivel Turnbuckles (MSS Type 15): For use with MSS Type 11 split pipe rings.
 4. Malleable-Iron Sockets (MSS Type 16): For attaching hanger rods to various types of building attachments.
 5. Steel Weldless Eye Nuts (MSS Type 17): For **120 to 450 deg F** piping installations.

- M. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel or Malleable-Concrete Inserts (MSS Type 18): For upper attachment to suspend pipe hangers from concrete ceiling.
 2. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
 3. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles.
 4. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
 5. Welded Beam Attachments (MSS Type 22): For attaching to bottom of beams if loads are considerable and rod sizes are large.
 6. C-Clamps (MSS Type 23): For structural shapes.
 7. Top-Beam Clamps (MSS Type 25): For top of beams if hanger rod is required tangent to flange edge.
 8. Side-Beam Clamps (MSS Type 27): For bottom of steel I-beams.
 9. Steel-Beam Clamps with Eye Nuts (MSS Type 28): For attaching to bottom of steel I-beams for heavy loads.
 10. Linked-Steel Clamps with Eye Nuts (MSS Type 29): For attaching to bottom of steel I-beams for heavy loads, with link extensions.
 11. Malleable-Beam Clamps with Extension Pieces (MSS Type 30): For attaching to structural steel.
 12. Welded-Steel Brackets: For support of pipes from below or for suspending from above by using clip and rod. Use one of the following for indicated loads:
 - a. Light (MSS Type 31): 750 lb.
 - b. Medium (MSS Type 32): 1500 lb.
 - c. Heavy (MSS Type 33): 3000 lb.
 13. Side-Beam Brackets (MSS Type 34): For sides of steel or wooden beams.
 14. Plate Lugs (MSS Type 57): For attaching to steel beams if flexibility at beam is required.
 15. Horizontal Travelers (MSS Type 58): For supporting piping systems subject to linear horizontal movement where headroom is limited.
- N. Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel-Pipe-Covering Protection Saddles (MSS Type 39): To fill interior voids with insulation that matches adjoining insulation.
 2. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
 3. Thermal Hanger-Shield Inserts: For supporting insulated pipe.
- O. Spring Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Restraint-Control Devices (MSS Type 47): Where indicated to control piping movement.
 2. Spring Cushions (MSS Type 48): For light loads if vertical movement does not exceed 1-1/4 inches.
 3. Spring-Cushion Roll Hangers (MSS Type 49): For equipping Type 41 roll hanger with springs.

4. Spring Sway Braces (MSS Type 50): To retard sway, shock, vibration, or thermal expansion in piping systems.
 5. Variable-Spring Hangers (MSS Type 51): Preset to indicated load, and limit variability factor to 25 percent to allow expansion and contraction of piping system from hanger.
 6. Variable-Spring Base Supports (MSS Type 52): Preset to indicated load, and limit variability factor to 25 percent to allow expansion and contraction of piping system from base support.
 7. Variable-Spring Trapeze Hangers (MSS Type 53): Preset to indicated load, and limit variability factor to 25 percent to allow expansion and contraction of piping system from trapeze support.
 8. Constant Supports: For critical piping stress and if necessary to avoid transfer of stress from one support to another support, critical terminal, or connected equipment. Include auxiliary stops for erection, hydrostatic test, and load-adjustment capability. These supports include the following types:
 - a. Horizontal (MSS Type 54): Mounted horizontally.
 - b. Vertical (MSS Type 55): Mounted vertically.
 - c. Trapeze (MSS Type 56): Two vertical-type supports and one trapeze member.
- P. Comply with MSS SP-58 for trapeze pipe-hanger selections and applications that are not specified in piping system Sections.
- Q. Comply with MFMA-103 for metal framing system selections and applications that are not specified in piping system Sections.
- R. Use powder-actuated fasteners or mechanical-expansion anchors instead of building attachments where required in concrete construction.
- S. Use pipe-positioning systems in pipe spaces behind plumbing fixtures to support supply and waste piping for plumbing fixtures.

END OF SECTION 400529

SECTION 402300 – WATER AND WASTEWATER PROCESS PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes gravity-flow (non-pressure) and force main (pressure) sanitary sewerage piping and wastewater process piping located inside buildings and tunnels, and up to 5 feet outside the buildings and tunnels.
- B. Foam Control Spray Nozzles

1.3 DEFINITIONS

- A. NPS: Nominal pipe size.
- B. PE: Polyethylene plastic.
- C. PP: Polypropylene plastic.
- D. PVC: Polyvinyl chloride plastic

1.4 SUBMITTALS

- A. Product Data: For pipe, tube, fittings, and couplings.
- B. Welding Certificates: Copies of certificates for welding procedures and personnel.
- C. Field Test Reports: Written reports of tests specified in Part 3 of this Section. Include the following:
 - 1. Test procedures used.
 - 2. Test results that comply with requirements.
 - 3. Failed test results and corrective action taken to achieve requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Do not store plastic pipe and fittings in direct sunlight.
- B. Protect pipe, pipe fittings, and seals from dirt and damage.

1.6 PROJECT CONDITIONS

- A. Interruption of Existing Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
- B. Notify Owner no fewer than seven days in advance of proposed interruption of service.

1.7 QUALITY ASSURANCE

- A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

- B. Welding: Qualify processes and operators according to the ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
- C. Fusion Welding: Polyethylene piping systems, ASTM 2657
- D. ASME Compliance: Comply with ASME B31.9, "Building Services Piping," for materials, products, and installation.

1.8 COORDINATION

- A. Coordinate layout and installation of piping and suspension system components with other construction.
- B. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3 Sections.
- C. Coordinate installation of pipe sleeves for penetrations through walls and floor assemblies.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.2 PIPING MATERIALS

- A. Refer to Part 3 "Piping Applications" Article for applications of pipe, tube, fitting, and joining materials.
- B. Transition Couplings for Aboveground Piping: Coupling or other manufactured fitting the same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.

2.3 DUCTILE-IRON PIPE AND FITTINGS

- A. Linings and coatings, pipe and fittings:
 - 1. Lining: AWWA C104 cement mortar lining.
 - 2. Buried Piping, Exterior Coating: AWWA C151/C110 asphaltic coating
- B. Mechanical-Joint, Ductile-Iron Pipe: AWWA C151, thickness class 53, with mechanical-joint, bell- and plain-spigot end unless grooved or flanged ends are indicated.
 - 1. Mechanical-Joint, Ductile-Iron Fittings: AWWA C110, ductile- or gray-iron standard pattern or AWWA C153, ductile-iron compact pattern.
 - a. Glands, Gaskets, and Bolts: AWWA C111, ductile- or gray-iron glands, rubber gaskets, and steel bolts.
 - 2. Pipe-Mechanical Joint Materials: Suitable for chemical and thermal conditions of piping system contents.

- a. Gaskets: AWWA C111, SBR rubber, gasket size as indicted.
- b. Mechanical Joint Bolts and Nuts: AWWA C111, tee head.
- c. Glands: Mechanical Joint Retaining Gland
 - 1) The joint restraint shall be incorporated in the restraining mechanism gland.
 - 2) Glands shall be manufactured of ductile iron conforming to ASTM A536, Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN.
 - 3) Dimensions of the glands shall be such that it can be used with the standardized mechanical joint bell and Type 304 stainless steel, tee-head bolts conforming to ANSI/AWWA A21.11 and ANSI/AWWA C153/A21.53.
 - 4) Torque limiting twist off nuts shall be of the same material and sizes as the tee-head bolts to ensure proper actuating of restraining devices.
 - 5) Available Manufacturer/Product: Ebaa Iron, Megalug.
- C. Push-on-Joint, Ductile-Iron Pipe: AWWA C151, thickness class 53, with push-on-joint, bell- and plain-spigot end unless grooved or flanged ends are indicated.
 - 1. Push-on-Joint, Ductile-Iron Fittings: AWWA C110, ductile- or gray-iron standard pattern or AWWA C153, ductile-iron compact pattern.
 - a. Gaskets: AWWA C111, Restraint type SBR rubber.
 - b. Available Manufacturer: US Pipe, Field Lok.
- D. Flanged Joint, Ductile-Iron Pipe: AWWA C151, thickness class 53, with ANSI B16.1 Class 125 Flanged joint.
 - 1. Flanged Joint, Ductile-Iron Fittings: AWWA C110, ductile-iron standard pattern or AWWA C153, ductile-iron compact pattern. ANSI B16.1 Class 125 Flange.
 - 2. Flange Fillers: ANSI B16.1 Class 125 pattern, AWWA C210 interior coating.
 - 3. Pipe-Flange Materials: Suitable for chemical and thermal conditions of piping system contents.
 - a. Gaskets: AWWA C111, SBR rubber, flat face, **1/8 inch** thick, unless otherwise indicated; and full-face or ring type, unless otherwise indicated.
 - b. Flange Bolts and Nuts: AWWA C115, ASME B18.2.1, carbon steel, unless otherwise indicated.
- E. Grooved Connection, Ductile-Iron Pipe: AWWA C151, thickness class 53, 250 psi minimum working pressure, grooved end.
 - 1. Grooved Joint, Ductile-Iron Fittings: AWWA C110, ductile-iron standard pattern or AWWA C153 ductile iron compact pattern with AWWA C606 grooved connections.
 - a. Joints: Grooved with couplings.
 - b. Couplings and Gaskets: ASTM A47/A47M Galvanized Malleable iron casting or ASTM A536 Ductile iron casting grooved coupling with ASTM A183 Grade 2 Zinc Plated Carbon Steel Bolts and ASTM A563 Zinc Plated Nuts and EPDM Gaskets.

2.4 STAINLESS-STEEL PIPE AND FITTINGS

- A. Stainless-Steel Pipe and Fittings: Schedule as indicated, ASTM A 312/A 312M, Grade TP304L or TP316L, welded seam, and grooved joint fittings unless otherwise indicated.
1. Grooved-End Fittings: ASTM A 47/A 47M, malleable-iron casting; or ASTM A 536, ductile-iron casting; with dimensions matching steel pipe.
 - a. Grooved-End-Pipe Couplings: AWWA C606, for steel-pipe dimensions. Include ferrous housing sections, gasket suitable for water, and bolts and nuts.
 2. Gasket Material: Thickness, material, and type suitable for fluid to be handled; and design temperatures and pressures.

2.5 STEEL PIPE AND FITTINGS

- A. Steel Pipe: ASTM A 53, Type E (electric-resistance welded), Grade B, Schedule as indicated, black steel, ends matching joining method.
1. Fittings:
 - a. Cast-Iron Threaded Fittings: ASME B16.4; Classes 125 and 250.
 - b. Malleable-Iron Threaded Fittings: ASME B16.3, Classes 150 and 300.
 - c. Malleable-Iron Unions: ASME B16.39; Classes 150, 250, and 300.
 - d. Cast-Iron Pipe Flanges and Flanged Fittings: ASME B16.1, Classes 25, 125, and 250; raised ground face, and bolt holes spot faced.
 - e. Grooved Mechanical-Joint Fittings: ASTM A 536, Grade 65-45-12 ductile iron; **ASTM A 47**, Grade 32510 malleable iron; ASTM A 53, Type F, E, or S, Grade B fabricated steel; or ASTM A 106, Grade B steel fittings with grooves or shoulders designed to accept grooved end couplings.
 - f. Grooved Mechanical-Joint Couplings: Ductile- or malleable-iron housing and synthetic rubber gasket of central cavity pressure-responsive design; with nuts, bolts, locking pin, locking toggle, or lugs to secure grooved pipe and fittings.
 - g. Welding Materials: Comply with Section II, Part C, of the ASME Boiler and Pressure Vessel Code for welding materials appropriate for wall thickness and for chemical analysis of pipe being welded.
 2. Gasket Material: Thickness, material, and type suitable for fluid to be handled; and design temperatures and pressures.

2.6 GALVANIZED STEEL PIPE AND FITTINGS

- A. Steel Pipe: ASTM A 53, Grade A, Schedule as indicated, galvanized. Include ends matching joining method.
1. Fittings:
 - a. Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M or ASTM A 106, Schedule 40, galvanized, welded steel pipe, threaded and coupled.
 - b. Malleable-Iron Unions: ASME B16.39, Class 150, hexagonal-stock body, with ball-and-socket, metal-to-metal, bronze seating surface and female threaded ends.
 - c. Gray-Iron, Threaded Fittings: ASME B16.4, Class 125, galvanized, standard pattern.

- d. Malleable Iron, Threaded Fittings: ASME B16.3, Class 150, galvanized, standard pattern.
 - e. Joints: Threaded, ASME B1.20.1
2. Grooved-Joint Systems
- a. Steel-Piping: ASTM A53, Grade A, grooved ends.
 - b. Grooved-Joint Fittings: ASTM A536, Grade 65-45-12 Ductile iron; ASTM A47, Grade 32510 Malleable iron; ASA B36.10 Carbon steel. All to be galvanized. Elbows to be long radius type.
 - c. Grooved-End-Pipe Joints: ASTM A47/A47M Galvanized malleable iron casting or ASTM A536 Ductile iron casting grooved coupling with ASTM A183 Grade 2 Zinc plated carbon steel bolts and ASTM A563 zinc plated nuts and EPDM gaskets.

2.7 COPPER TUBE AND FITTINGS

A. Soft Copper Tube: **ASTM B 88, Type K** tube, annealed temper.

- 1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
- 2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint ends. Furnish Class 300 flanges if required to match piping.
- 3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces, and solder-joint or threaded ends.
- 4. Joining Materials:
 - a. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated; and AWS A5.8, BAg1, silver alloy for refrigerant piping, unless otherwise indicated.
 - b. Mueller, or approved equal compression fittings.

B. Hard Copper Tube: **ASTM B 88, Types L** tube, drawn temper.

- 1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
- 2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint ends. Furnish Class 300 flanges if required to match piping.
- 3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces, and solder-joint or threaded ends.
- 4. Joining Materials:
 - a. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
 - b. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated; and AWS A5.8, BAg1, silver alloy for refrigerant piping, unless otherwise indicated.

2.8 CONCRETE PIPE AND FITTINGS

- ### A. Reinforced-Concrete Sewer Pipe and Fittings, Elliptical: **ASTM C 507**, with bell-and-spigot ends for gasketed joints with **ASTM C 443**, rubber gaskets.

2.9 POLYETHYLENE PIPE AND FITTINGS

- A. Polyethylene (PE) pipe, (SDR-PR), HDPE (High Density Polyethylene), EMHW (Extra High Molecular Weight) 3408, ASTM F714, ASTM D3035, ASTM D3350, iron pipe size, DR 17, 100 PSI rating
 - 1. Fittings: Polyethylene butt fusion type, ASTM F1055, to match pipe dimensions and pressure classifications. Provide adapters as necessary for connection to dissimilar pipe and valves.
 - 2. Joints: Heat fusion as per ASTM 2657.

2.10 PVC PIPE AND FITTINGS

- A. Solid-Wall PVC Pipe: ASTM D 2665, drain, waste, and vent.
- B. Cellular-Core PVC Pipe: ASTM F 891, Schedule 40.
- C. PVC Socket Fittings: ASTM D 2665, made to ASTM D 3311, drain, waste, and vent patterns and to fit Schedule 40 pipe.
- D. PVC Schedule 80 Pipe: ASTM D 1785.
 - 1. PVC Schedule 80 Fittings: ASTM D 2467, socket type.
- E. Solvent Cements for Joining Plastic Piping:
 - 1. PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.

2.11 CPVC PIPING

- A. CPVC Pipe: ASTM F 441/F 441M, Schedule 40.
 - 1. CPVC Socket Fittings: ASTM F 438 for Schedule 40.
- B. Solvent Cements for Joining Plastic Piping:
 - 1. PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.

2.12 FOAM CONTROL SPRAY NOZZLES

- A. Basis-of-Design: Evoqua Water Technologies; model Flat Spray Nozzle, 3/8" Bore, 1/2" NPT Fitting.
- B. The nozzle shall be constructed of Delrin plastic with a large 1/2" NPT thread opening. Length of nozzle is 3" (overall) with 3/8" bore. Fitting is 1/2" NPT.

PART 3 - EXECUTION

3.1 EXCAVATION

- A. Excavating, trenching, and backfilling are specified in Division 2 Section "Earthwork."

3.2 PIPING APPLICATIONS

- A. Buried Gravity-Flow, Nonpressure Sewer Piping: Includes headworks building influent and effluent sewer piping:

1. **NPS 8 and larger:** Ductile-iron, mechanical-joint pipe and fittings.
 2. **Elliptical:** Reinforced-Concrete sewer pipe and fittings, elliptical, bell and spigot.
- B. Buried Force-Main, Pressure Piping: Includes existing building sewer force main extension, existing D.C. garbage facility force main extension, existing plant effluent line extension
1. **NPS 3 and larger:** Ductile-iron, push-on-joint pipe; and ductile-iron, mechanical-joint fittings. Use mechanical joint retainer gland with all mechanical joints.
- C. Wastewater Piping: Includes process waste stream piping, plant effluent (non-potable) piping and sewage piping, grit pump discharge piping, grit washer blowdown piping, grit washer discharge piping, 10 psi operating pressure; 25 psi test pressure:
1. **NPS ½ - 2 ½:**
 - a. Aboveground/Indoor: PVC Schedule 80 pipe, with PVC Schedule 80 Fittings, glued socket joints.
 - b. Aboveground/Outdoor: Schedule 40 galvanized steel pipe and galvanized cast iron or malleable iron fittings, threaded joints.
 - c. Belowground or within slabs: Polyethylene HDPE pipe.
 2. **NPS 3 and Larger:**
 - a. Aboveground: Flanged-joint ductile iron pipe with flanged joint fittings or Grooved-joint ductile iron pipe with grooved joint fittings.
 - b. Belowground or within slabs: Push-on-joint or mechanical joint ductile iron pipe and mechanical joint fittings. Use the fewest possible joints belowground and within floor slabs.
- D. Sludge Piping: Includes supernatant piping, secondary sludge (WAS/RAS) piping, primary sludge piping and thickened sludge piping. 100 psi operating pressure; 150 psi test pressure:
1. **NPS 2 ½ and Smaller:**
 - a. Aboveground/Indoor: PVC Schedule 80 pipe, with PVC Schedule 80 Fittings, glued socket joints.
 - b. Aboveground/Outdoor: PVC Schedule 80 pipe, with PVC Schedule 80 Fittings, glued socket joints or Schedule 40 galvanized steel pipe and galvanized cast iron or malleable iron fittings, threaded joints.
 - c. Belowground or within slabs: Polyethylene HDPE pipe.
 2. **NPS 3 and Larger:**
 - a. Aboveground: PVC Schedule 80 pipe, with PVC Schedule 80 Fittings, glued socket joints or Flanged-joint ductile iron pipe with flanged joint fittings or Grooved-joint ductile iron pipe with grooved joint fittings.
 - b. Belowground or within slabs: PVC Schedule 80 pipe, with PVC Schedule 80 Fittings, glued socket joints or Push-on-joint or mechanical joint ductile iron pipe and mechanical joint fittings. Use the fewest possible joints belowground and within floor slabs.
- E. Dewatered Sludge Piping: Includes dewatered sludge piping connected to the discharge fitting of the Sludge Cake Feed Pump. 250 psi operating pressure.

1. **NPS 2 and Smaller:**
 - a. Aboveground: PVC Schedule 80 pipe, with PVC Schedule 80 Fittings, glued socket joints.
- 2 **NPS 2-1/2 and Larger:**
 - a. Aboveground: PVC Schedule 80 pipe, with PVC Schedule 80 Fittings, glued socket joints or Schedule 10 Stainless-Steel Pipe, grooved joint, grooved joint fittings.
- F. Process Air Piping: Includes low-pressure air piping for aeration tanks and grit chamber air piping. 10 psi operating pressure; 25 psi test pressure:
 1. **NPS 2 and Smaller:**
 - a. Aboveground: Schedule 40 galvanized steel, pressure fittings, threaded joints.
 - 3 **NPS 2-1/2 through 4:**
 - a. Schedule 10 Stainless-Steel Pipe, grooved joint, grooved joint fittings.
 - 4 **NPS 5 and Larger:**
 - a. Schedule 10 Stainless-Steel Pipe, grooved joint, grooved joint fittings.
- G. Pump Seal Water Piping: Includes seal water supply piping for secondary sludge pumps and make-up water pump. 100 psi operating pressure; 150 psi test pressure:
 1. **NPS 2 and Smaller:**
 - a. Aboveground: Hard Copper Tube, Copper Pressure Fittings.
- H. Non-potable process water Piping: Includes all non-potable water or effluent water for process water in the plant. 100 psi operating pressure; 150 psi test pressure:
 1. **NPS ½ - 2 ½:**
 - a. Aboveground: Hard Copper Tube, Copper Pressure Fittings.
 - b. Belowground or within slabs: Polyethylene HDPE pipe or Soft Copper Tube, Brazed Copper Pressure Fittings or compression fittings.
 2. **NPS 3 and NPS 4:**
 - a. Aboveground: Hard Copper Tube, Copper Pressure Fittings.
 - b. Belowground or within slabs: Push-on-joint or mechanical joint ductile iron pipe and mechanical joint fittings. Use the fewest possible joints belowground and within floor slabs.
 3. **NPS 6 and Larger:**
 - a. Aboveground: Flanged-joint ductile iron pipe with flanged joint fittings or Grooved-joint ductile iron pipe with grooved joint fittings.

- b. Belowground or within slabs: Push-on-joint or mechanical joint ductile iron pipe and mechanical joint fittings. Use the fewest possible joints belowground and within floor slabs.
- I. Pumped filtrate drain and polymer piping: 100 psi operating pressure; 150 psi test pressure:
 - 1. **NPS ½ - 4:**
 - a. Aboveground: CPVC pipe and pressure fittings.
- J. Filtrate drain piping, gravity flow: 0 psi operating pressure; 5 psi test pressure:
 - 1. **NPS ½ - 4:**
 - a. Aboveground: CPVC pipe and pressure fittings.

3.3 GENERAL PIPING INSTALLATION

- A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of process piping. Location and arrangement of piping layout take design considerations into account. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- B. Install buried gravity-flow, nonpressure, piping according to the following:
 - 1. Install piping pitched down in direction of flow, at slope indicated.
 - 2. Install piping with **48-inch** minimum cover.
 - 3. Install PVC sewer piping according to ASTM D 2321 and ASTM F 1668.
 - 4. Install RCP sewer pipe according to ASTM C 1479.
- C. Install buried force-main, pressure piping according to the following:
 - 1. Install piping with restrained joints at fittings and at horizontal and vertical changes in direction. Use corrosion-resistant rods, pipe or fitting manufacturer's proprietary restraint system, or cast-in-place-concrete supports or anchors.
 - 2. Install piping with **48-inch** minimum cover.
 - 3. Install ductile-iron pressure piping according to AWWA C600.
- D. Clear interior of buried piping of dirt and superfluous material as work progresses. Maintain swab or drag in piping, and pull past each joint as it is completed. Place plug in end of incomplete piping at end of day and when work stops.
- E. Install air and drain piping with 1 percent slope downward in direction of airflow.
- F. Install eccentric reducers where piping is reduced in direction of flow, with bottoms of both pipes and reducer fitting flush.
- G. Install flexible pipe connectors at equipment connections.
- H. Install thermometer and pressure gage on process air discharge piping from each air blower; install according to Division 15 Section "Meters and Gages."

3.4 JOINT CONSTRUCTION

- A. Flanged Joints: ASME B16.1, Class 125.
- B. Mechanical Joints: AWWA C111, with restraining gland.

- C. Push-On Joints: AWWA C111, restraining type gaskets.
- D. Grooved Joints: Assemble joints with grooved-end-pipe or grooved-end-tube coupling housing, gasket, lubricant, and bolts according to coupling and fitting manufacturer's written instructions.
- E. Pipe Threads: ASME B1.20.1 for threaded pipe and pipe fittings.
- F. Fusion Weld Joints: As per pipe manufacturer's written instructions.

3.5 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment and machines to allow service and maintenance.
- C. Connect process piping to equipment. Use transition fitting to join dissimilar piping materials.

3.6 PIPING HANGERS AND SUPPORTS

- A. Refer to Division 40 Section "Hangers and Supports for Piping and Equipment" for piping support inside buildings, tunnels and vaults.

3.7 PAINTING

- A. Paint in accordance with Division 09 Section "Painting"

3.8 FIELD QUALITY CONTROL

- A. Pressure test process piping as follows:
 - 1. Fill piping with working fluid. Check components to determine that they are not air bound and that piping is full of water. Provide taps, temporary valves and caps as required for testing.
 - 2. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
 - 3. Leave new, altered, extended, or replaced piping uncovered and unconcealed until it has been tested and approved. Expose work that was covered or concealed before it was tested.
 - 4. Cap and subject piping to static water and/or air pressure indicated, without exceeding pressure rating of piping system materials. Isolate test source and allow to stand for two hours. Leaks and loss in test pressure constitute defects that must be repaired.
 - 5. Repair leaks and defects with new materials and retest piping or portion thereof until satisfactory results are obtained.
 - 6. Prepare reports for tests and required corrective action.

3.9 CLEANING

- A. Clean interior of piping systems. Remove dirt and debris as work progresses.

END OF SECTION 402300

SECTION 464331 - CIRCULAR SECONDARY CLARIFIER EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. There shall be furnished two (2) secondary clarifier mechanisms and appurtenances suitable for installation in existing concrete basins as shown on the contract drawings, including:

1. Hydraulic Center Drive Assembly.
2. Walkway Access Bridge.
3. Center Cage and Rake Arms.
4. Corner Sweep Mechanism.
5. Sludge Collection Drum and Adapter.
6. Center Column.
7. Energy Dissipating inlet.
8. Flocculating Feedwell.
9. Surface Scum Skimming Equipment.
10. Scum Baffle.
11. Scum Box.
12. Controls.

- B. Related Sections include the following:

1. Division 03 Section "Concrete Rehabilitation" for existing tank repair.
2. Division 26 for electrical connection specifications.

1.3 ACTION SUBMITTALS

- A. Shop Drawings: Show fabrication and installation details and scaled drawings for rectangular sludge collectors. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Contractor shall be responsible for field measuring existing facilities prior to shop drawing preparation. Field measurements shall be used in preparation of shop drawings.

- B. Wiring Diagrams.

- C. Product Data: Provide material descriptions and dimensions of components.

- D. Other Information Submittals:

1. Manufacturer's installation instructions.
2. Warranties
3. A list of the manufacturer's recommended special tools, spare parts and recommended lubricants to be supplied.

- E. Delegated-Design Submittal: Circular clarifier equipment.

1. Include analysis data indicating compliance with performance requirements and design data signed and sealed by the qualified professional engineer responsible for their preparation.
- F. Operation and Maintenance Manuals: Complete with manufacturer's instructions for equipment installation, equipment function, start-up procedures, operation, preventative maintenance, servicing and troubleshooting. Submit in accordance with Division 1.

1.4 INFORMATIONAL SUBMITTALS

- A. Include the following:
 1. Name and location of Project.
 2. Order number.
 3. Name of manufacturer.
 4. Name of Contractor.
 5. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including edition dates of each standard.
 6. Design Loads.
 7. Structural design drawing; Signed and sealed by a qualified professional engineer.
- B. Field quality-control reports.

1.5 OPERATION AND MAINTENANCE MANUALS

- A. Operation and maintenance manuals will be provided by the clarifier manufacturer at least two weeks prior to shipment of all major equipment components. Each manual shall be a bound, indexed binder with drawings and parts lists prepared specifically for this project rather than general instructions that are not designed for this project.
- B. At a minimum the manual shall contain:
 1. Certified as-built drawings (general arrangement and general arrangement details).
 2. Erection drawings.
 3. A complete bill of materials for the equipment including the weights of all structural steel components.
 4. Installation and maintenance instructions for the specific equipment including the erection sequence, maintenance and trouble-shooting check points, and complete lubrication procedures with recommended grades of lubricants.
 5. Cut sheets for all equipment items purchased from sub-vendors.
 6. A list of the clarifier manufacturer's recommended spare parts specifically denoting wear items, long delivery items, and all items convenient for stocking as optional replacement items.

1.6 REFERENCES

- A. American Society of Testing Materials (ASTM):
 1. A36 Structural Steel Specifications
 2. A992 Structural Steel Specifications
 3. 304 Bolt Specifications
 4. A123 Hot-Dip Galvanized Coatings
 5. A153 Hot-Dip Galvanized Bolts
 6. A48 Cast Iron Specifications

- 7. A536 Ductile Iron Specifications
- 8. A283C Steel Plate Specifications
- B. American Iron and Steel Institute (AISI), Heat Treated Steel Specifications
- C. American Gear Manufacturers' Association (AGMA), Gear Ratings
- D. American Welding Society (AWS), Current Standards
- E. Anti-friction Bearing Manufacturers' Association (AFBMA), Bearing Life Specifications
- F. National Electrical Manufacturer's Association (NEMA), Motor Design Standards and Standards for Control Enclosures

1.7 DELIVERY, STORAGE, AND HANDLING

- A. All parts shall be properly protected so that no damage or deterioration will occur from the time of shipment until installation is completed and the units and equipment are ready for operation.
- B. Protect from construction traffic and damage.
- C. Fabricated assemblies shall be shipped in the largest sections permitted by carrier regulations, properly match-marked for ease of field erection.
- D. All components shall be erected immediately upon receipt from the clarifier manufacturer or stored in strict conformance with storage recommendations provided by the clarifier manufacturer in the operations and maintenance manual.
- E. The mechanism shall be lubricated in strict accordance with the instructions of the clarifier manufacturer's field service representative. The required lubricants shall be provided by the contractor.

1.8 SPARE PARTS

- A. intent of this specification is to provide uninterrupted operation for a minimum period of two (2) years. To meet this objective the clarifier manufacturer shall supply any spare parts, excluding lubricants, that are required to meet this time frame. As a minimum, provide the following spare parts, per clarifier:
 - 1. One (1) sight glass for each main drive housing containing oil.
 - 2. One (1) set of neoprene skimmer wipers.

1.9 WARRANTY

- A. The equipment shall be warranted for a period of one (1) year from substantial completion of the clarifier not to exceed 18 months from shipment. Warrantee shall be against defects in workmanship and materials under normal use, operation and service. If the equipment should fail during the warranty period due to a defective part, it shall be replaced and the units restored at no expense to the owner.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design structural components of the circular secondary clarifier equipment.

- B. Structural Performance: The circular clarifier support shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according ASCE 7 – 10 “Minimum Design Loads for Buildings and Other Structures with Supplement No. 1”
1. Design Loads: Provide design for minimum loading requirements and appropriate load combinations, including calculated machinery loads and impact loads.
- C. Clarifier Performance:
1. The equipment shall be designed to effectively settle suspended solids and scrape the settled solids from the basin floor to a sludge thickening zone near the center of the tank. The thickened solids are then scraped to a sludge withdrawal sump as shown on the drawings. The clarified effluent shall be collected uniformly by the peripheral launder. Surface scum shall be collected by the scum skimming equipment and discharged through the scum withdrawal pipe.
2. Process Requirements for each Secondary Clarifier:
- a. Design Average Daily Flow: 3.2* MGD.
 - b. Design Peak Flow: 5.0* MGD.
 - c. *Additional RAS flow range from 1.6 MGD to 2.4 MGD at Design Average Daily Flow.
 - d. *Additional RAS flow range from 5.0 MGD to 7.5 MGD at Design Peak Flow.
 - e. Drive continuous torque: 30,000 ft-lb at 0.043 rpm
 - f. Drive momentary peak torque: 123,000 ft-lb
 - g. Mechanism rotation: Clockwise
 - h. Rake arm tip speed, constant: 8-12 ft/min
3. Design Requirements. The following information is for reference, actual measurements shall be taken and determined prior to the Shop Drawing Submittals
- a. Basin diameter: 80'-0" nominal.
 - b. Side water depth: 10'-0"
 - c. Tank freeboard: 1'-6"
 - d. Clarifier area floor slope: 1:12
 - e. Center column diameter: 30"
 - f. Feedwell diameter: Sized by Manufacturer.
 - g. Feedwell depth: Sized by Manufacturer.
 - h. High Performance Energy dissipating inlet (EDI) diameter: Sized by Manufacturer.
 - i. EDI submerged depth: Sized by Manufacturer.
 - j. Cage minimum size: 4'-0" square
 - k. Rake arm cage minimum size: 3'-10" square
 - l. Spiral blade height at tank wall: 8"
 - m. Spiral blade height near tank center: Sized by Manufacturer.
 - n. Rotating sludge drum diameter: Sized by Manufacturer.
 - o. Rotating sludge drum height: 24"
 - p. Scum trough width: As shown.

2.2 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide rectangular collectors as manufactured by OVIVO USA, LLC (Formerly Eimco Water Technologies) of Salt Lake City, Utah, Model C4-CMD Clarifier Mechanism; 80-foot Secondary Clarifier.

2.3 GENERAL

- A. Each clarifier mechanism shall be of the center-drive type, supported on a stationary influent column, with the flow entering at the bottom of the influent column and flowing upward to the inlet openings located at liquid level. The clarifier shall be designed to remove sludge uniformly from the bottom of the tank.

2.4 HYDRAULIC CENTER DRIVE ASSEMBLY

- A. The center drive assembly shall consist of a hydraulic motor, a primary reduction unit, and an enclosed final reduction unit consisting of a pinion and a gear/bearing. All components are directly coupled. The drive unit output torque shall be limited by a torque overload protection device.
- B. All gears and bearings shall be oil bath lubricated with the main bearing totally submerged in oil and the teeth of the main spur gear submerged at least 70 per cent in the oil bath. Oil pumps for lubrication or grease lubricated bearings are not considered appropriate for this application and will not be allowed. The oil reservoir for the main bearing and gear shall have a section of minimum depth 5 inches below the main bearing to positively prevent contamination of the main bearing and gears with condensate or other contaminants. Gear and bearing housings must also be fitted with oil level sight glasses and condensate drains. Condensate must be allowed to drain from a low point of the housing. Condensate and contaminants will not be allowed to drain through the lower pinion bearing.
- C. Drive components will be located via a machined, registered fit to preserve the alignment of key drive components under all load conditions. Inspection of the completed drive unit shall be accomplished at the clarifier manufacturer's shop, with reports of all tests and certifications of material hardness being made available for review at the Engineer's request prior to shipment to the job site.
- D. Major drive components, main gears and bearings must be designed to allow for separate and individual replacement by plant personnel to facilitate timely and economical repairs.
- E. The complete center drive assembly, including the overload protection device, shall be a regularly manufactured in-house product of the clarifier manufacturer. The center drive assembly is a key element in a successful clarifier installation; therefore, drive assemblies purchased from third party vendors will not be accepted.
- F. The primary reduction unit shall be a hydrostatic planetary unit driving the final gear reduction unit.
1. The primary reduction unit shall consist of a hydraulic gear pump and a hydraulic motor.
 2. The primary reduction unit shall have an integral hydraulic manifold that incorporates a hydraulic pressure relief valve to give protection against overload, a flow control valve, and a port for a hydraulic filter.
 3. All hydraulic components and hydraulic lines shall be enclosed in a stainless-steel housing of sufficient size to contain a minimum of five gallons of hydraulic oil. The housing shall serve as the reservoir for the hydraulic oil.
 4. A disposable spin-on type hydraulic filter shall be provided to filter the hydraulic oil.
 5. The hydraulic pump drive shaft must be vertical to permit vertical mounting of electric motor.

- G. The main drive unit shall consist of a pinion and main spur gear assembly. A single piece pinion shall be keyed to the primary reduction unit to transmit power to the spur gear. In order to maintain proper alignment between the pinion and the spur gear, the pinion will be supported by bearings both above and below the spur gear. The bearings shall be fitted into precision machined bearing pilots to positively insure bearing and gear alignment.
- H. The main spur gear material shall be high strength ductile iron per ASTM A536 grade 100-70-03 or equal. The gear shall have a nominal pitch diameter of 40 inches with a 6.0 inch face width or the equivalent nominal spur gear surface area of 754 square inches. Spur gear surface area is defined as the spur gear pitch diameter multiplied by the spur gear face width multiplied by 3.14.
- I. The main gear shall rotate and be supported on a ball bearing assembly provided with four replaceable liner strips fitted into the main gear and turntable base. Liner strips shall be special vacuum degassed carbon corrected alloy steel hardened to a Rockwell hardness of at least 43 to 46 RC. The turntable base shall be a minimum 1 inch thick to insure adequate structural rigidity to properly support the drive bearing and gear.
- J. The main gear and bearing shall be completely enclosed in an ASTM A-48 Class 40A cast iron housing provided with neoprene dust seals. In order to ensure the maximum possible base rigidity and vibration dampening, the gear housing shall be of full sidewall construction, integral with the base. Prior to assembly, the base shall be thoroughly inspected for seep holes or inclusions and given a hydrostatic test to insure no leaks are in the oil containment area. Shop inspection reports must be made available for review.
- K. The drive unit shall be equipped with an electro-hydraulic overload control device attached to and actuated by the hydraulic pressure in the hydraulic power unit (HPU). The pressure transducer shall provide a 4-20 mA signal for a digital torque meter. The digital meter shall readout in percent of the drive 100% duty torque as called out in Section 1.03. The pressure transducer shall also activate an alarm for warning of impending overload and a motor cutout switch for overload protection. The HPU shall be provided with a hydraulic bypass valve as a back-up safety device to protect the clarifier drive system and mechanism.
1. The respective settings in the overload control device shall be factory calibrated and set to the following settings:
 - a. Pressure transducer associated controls:
 - 1) Alarm: 40% of scale.
 - 2) Motor cutout: 85% of scale.
 - b. Hydraulic bypass valve:
 - 1) Back-up drive cutout: 100% of scale.
 2. The digital meter shall be mounted in a weatherproof NEMA 4X enclosure with a gasket-sealed, cover. Amperage sensing devices are not acceptable for torque overload protection due to their inability to react quickly enough to prevent damage to the drive. Overload devices with exposed linkage connections will not be accepted due to possible corrosion problems. Devices which react to rotational movement of the secondary reduction unit will not be allowed due to possible misalignment of gearing created by the movement of the reduction unit misalignment of gearing created by the movement of the reduction unit.
- L. The center drive unit shall be designed for the continuous torque rating as specified in section 2.1. The continuous torque shall be defined as the minimum torque at which the drive mechanism may operate continuously 24 hours per day, 365 days per year, for 20 years, at the specified sludge collector arm speed. Main gear and pinion calculations shall be based upon ANSI/AGMA 2001-C95 standards for rating the pitting resistance and bending strength of involute spur and helical gear teeth. Calculations shall clearly present the values used for the following design parameters:

1. Number of pinions
 2. Actual face width
 3. Tooth geometry (I and J factors)
 4. Load distribution factor
 5. Allowable contact stress
 6. Allowable bending stress
 7. Pinion pitch diameter
 8. Hardness ratio factor
 9. Elastic coefficient
 10. Life factor
- M. The load distribution factor shall be determined by the empirical method. For parameters which are material dependent, such as allowable contact stress, the calculations shall include a complete description of material and heat treatment used.
- N. Worm gearing shall be designed and rated to equal or exceed the specified continuous torque and life. The basis for rating shall be ANSI/AGMA 6034-B92 standards for durability rating and design of worm gear reducers.
- O. The continuous torque rating for the drive unit shall be the lowest value determined for the gearing.

2.5 WALKWAY ACCESS BRIDGE

- A. The clarifier shall be provided with a 36 inch clear, open width walkway extending from the tank wall to the center drive platform. The walkway shall be supported at the center by the drive unit and supported on the opposite end by the tank wall. As a minimum the walkway shall be designed to safely withstand all dead loads plus a live load of 100 pounds per square foot with a maximum deflection of 1/360 of the entire span. The walkway shall consist of two (2) beams or truss, sufficiently braced to resist the specified design loads. The contractor shall block out or otherwise modify the tank wall to accommodate the walkway as shown on the clarifier manufacturer's shop drawings. The walkway decking shall be 1-1/4 inch aluminum I-Bar grating.
- B. A center drive operations platform shall be provided. It shall be a minimum of 10 feet square to provide clearance around the center assembly and drive control for maintenance and service. The drive platform shall be decked with 1/4 inch aluminum checkered floor plate and have sufficient structural steel supports to meet the specified design load conditions.
- C. Provide handrails with toe plate along both sides of the walkway and around the center drive platform. The handrailing shall be 1-1/2 inch diameter aluminum pipe, 2-rail design, with fittings factory assembled to posts. Rails are to be shipped to the job site in stock lengths for cutting and fitting. The toe plate shall be a 4 inch x 1/4 inch plate or a 4 inch tall aluminum extruded channel. Truss supports meeting OSHA requirements may be used in lieu of handrails.

2.6 CLARIFIER CENTER CAGE AND RAKE ARMS

- A. The center cage shall be of steel box truss construction, with connections for the two (2) sludge removal arms, rotating sludge collection drum and feedwell supports. The top of the cage shall be bolted to the main gear which shall rotate the cage with the attached arms and feedwell. The minimum angle size used for construction of the cage and rake arms shall be 2 inch x 2 inch x 1/4 inch members.
- B. The clarifier mechanism shall include two (2) sludge removal arms of steel truss construction, with steel spiral rake blades and adjustable 20 gauge 304 stainless steel squeegees. The rake blades shall provide complete raking of the basin floor twice per revolution.

- C. The rake blades shall consist of a minimum 3/16 inch thick steel plate. The blades shall be constructed to a logarithmic spiral curve with a constant 30 degree angle of attack. Blade depth shall vary. Each rake truss support arm shall be provided with the necessary outrigger bracing and other blade support structures, to ensure that the complete blade can be properly located and adjusted in the field.
- D. The rake blades shall terminate in the center to within 1 inch of the rotating sludge collection drum. The 1 inch space shall be sealed with a neoprene seal.
- E. The structural calculations for the rake arm shall include an analysis of the torsional loads from the spiral curve blade.
- F. The cage and rake arms shall be designed such that calculated stresses do not exceed the AISC allowable stress at twice the drive 20 year AGMA continuous torque rating.

2.7 CORNER SWEEP MECHANISM

- A. At the outer end of each existing sludge removal arm, there shall be provided a pivoting pantograph-type raking mechanism for raking beyond the end of each arm as it traverses the corners of the tank.
- B. Each corner blade mechanism shall consist of two (2) pivoted frames attached to the end of the rake arm on the inner end and supporting a corner raking blade on the outer end.
- C. The corner sweep raking blade and pivot arms shall be designed and attached to the rake arms in such a way that constant contact and continuous force is applied to the existing guide ring. Corner sweep rake blades shall be attached to the pivot arms in such a way that, regardless of its position during rotation of the mechanism, it will displace settled sludge toward the center of the tank.
- D. The corner sweep shall be a spring actuated arm design, incorporating the following components:
 - 1. Pivoting support arms
 - 2. Spring
 - 3. Water lubricated UHMW bearings
 - 4. Urethane wheel to minimize wear on the tank wall over time
 - 5. Corner sweep rake blade with adjustable squeegee
 - 6. Guide ring (if existing - to be reused)

2.8 SLUDGE COLLECTION DRUM AND ADAPTER DEVICE

- A. A rotating sludge collection drum shall be provided to collect settled solids raked to the center by the rotating spiral blades. The collected sludge shall be discharged from the tank by way of the RAS sludge pipe as shown on the contract drawings.
- B. The sludge collection drum shall rotate with the center cage and shall be provided with sludge collection ports located directly in front of each rotating spiral rake blade. The ports shall be sized to collect thickened sludge from the bottom most dense sludge layer to maximize underflow solids concentration.
- C. The rotating sludge drum shall be constructed of ¼ inch steel plate. A neoprene seal shall be provided to seal against the center column. A stainless steel seal shall be provided to seal against the tank floor.
- D. A stationary influent/sludge return adapter device shall be furnished which shall serve as both a support base for the center influent column and an inlet manifold for the existing sludge return pipe. The adapter shall be equipped with at least three radial sludge return branches. Sludge shall enter the collection ports of the rotating drum and then one of the three stationary return branches which joins to the existing central RAS pipe as shown on the drawings. Alternate solutions to access the

concentric RAS piping contained within the influent pipe, such as tank floor excavation, are expressly forbidden.

2.9 CENTER COLUMN

- A. A stationary center column shall be provided which shall serve as the influent pipe. One end shall have a 1-1/4 inch support flange for bolting to the foundation with a minimum of eight (8) 1-1/4 inch diameter anchor bolts as shown on the plans. A similar flange shall be provided at the top of the column for supporting and securing the center drive assembly. Minimum center column thickness shall be 1/4".
- B. Influent openings shall be provided in the upper portion of the column to allow unrestricted passage of the flow into the energy dissipating feedwell. Influent velocity shall be reduced by providing a total inlet port area a minimum of 135 percent of the center column cross sectional area.

2.10 HIGH PERFORMANCE ENERGY DISSIPATING INLET (EDI)

- A. The clarifier shall be equipped with an inner energy dissipating inlet well (EDI) located inside the rotating feedwell. The EDI shall be designed to dissipate the energy of the incoming flow thereby inducing flocculation of the feed solids.
- B. Flow shall enter the EDI through ports in the center column. The EDI discharge is set above the discharge ports of the column. Flow from the center column is first deflected by the wall of the EDI then back upon itself by a rim extending into the EDI below the EDI discharge area. This disrupts any jetting and disburse the flow into a homogeneous energy level as it rises upwards towards the EDI discharge area at the top. Circumferential, vertical discharge vanes along the top of the EDI shall release flow, a full 360 degrees, uniformly and tangentially into the feedwell. US Patent number 7,243,802 B2.
- C. The EDI shall:
 - 1. Eliminate flow streams jetting into the feedwell.
 - 2. Uniform flow around its full 360 degree circumference.
 - 3. Produce a controlled tangential flow which promotes flocculation.
 - 4. Minimize the depth of the inlet flow and thus avoid scouring of the sludge blanket.
 - 5. Create an evenly tapered velocity profile in the clarification zone.
 - 6. Increase the active clarification volume and retention efficiency through the use of tangential discharge from the feedwell.
- D. The EDI shall include a bottom plate extending to within one inch of the center column. The entire EDI shall be constructed of 3/16 inch plate. The total EDI depth specified in Article 1.04 shall include freeboard, with sufficient area in the openings for floating material to pass.
- E. The bottom plate of the EDI shall be provided with properly sized drain holes.

2.11 HIGH PERFORMANCE ENERGY DISSIPATING INLET (EDI)

- A. The clarifier shall be equipped with a EquaFlo 360 Clarifier Energy Dissipating Inlet.
- B. The high performance EDI well shall be located inside the rotating flocculation feedwell. The dispersion well shall be designed to dissipate the energy of the incoming flow by way of evenly spaced tangentially oriented vanes along the entire circumference of the EDI.

- C. The outlet vanes shall impart a tangential flow into the outer flocculating feedwell and shall have bottom plates to prevent short circuiting.
- D. The bottom plate of the EDI shall be provided with properly sized drain holes.

2.12 FLOCCULATING FEEDWELL

- A. The feedwell shall be supported by structural members attached to the center rotating cage. The feedwell shall be fabricated from 3/16 inch steel plate with upper and lower reinforcing rim angles as required and stiffeners as required. A minimum of four (4) scum ports, 4 inches high x 16 inches long, shall be provided equally spaced around the feedwell periphery to allow scum to exit from the feedwell at water level. Scum ports shall be free to allow scum to escape with an adjustable, angled baffle plate to impart a tangential direction of the flow exiting the scum port.

2.13 SURFACE SCUM SKIMMING EQUIPMENT

- A. Surface scum skimming equipment shall be furnished with the clarifier mechanism. It shall be arranged to have the surface scum swept along an angled skimmer blade to the skimmer assembly, attached at the end of the blade, for discharge to the scum box as shown on the plans. The surface of the clarifier shall be swept twice per revolution.
- B. The skimmer blade shall be tangential to the rotating feedwell and be supported by vertical supports from the rake arm. The skimmer assembly shall be a pivoting aluminum skimmer device equipped with manual out-of-service lock out. The skimmer shall have replaceable neoprene rubber wipers on all three sides to form a pocket to trap the scum and discharge the scum into the scum box.
- C. The scum box shall be supported from the tank wall and connected to a six (6) inch scum line, as shown on the contract drawings.
- D. The clarifier equipment manufacturer shall furnish a flush valve assembly for automatic flushing of the scum box and scum pipe. The flush valve assembly shall allow approximately 2 to 5 gallons of clarified effluent to enter the box as the skimmer assembly passes over the scum box. It shall consist of an actuator bar and a pivoting assembly that will open a valve. A counterweight shall close the valve after the flush cycle ends.

2.14 SCUM BAFFLE

- A. See Section 06253 - Fiberglass Reinforced Products for materials of construction.
- B. The scum baffle plates shall consist of 12 inch deep x 1/4 inch thick FRP sections supported from the tank wall by a combination of fabricated type 316 stainless steel and FRP angle brackets secured with 304 stainless steel cinch anchor bolts and hex nuts, allowing for vertical and radial adjustment. In the area of the scum box the baffle shall extend 24 inches deep starting approximately 6 feet preceding and ending 6 feet following the scum box.

2.15 SCUM BOX

- A. Provide a scum box consisting of type 316 stainless steel sheet and angle.
 - 1. Fabricate units from stainless steel shapes, plates, and sheets of welded construction as indicated. Fabricate to sizes, shapes, and profiles indicated to perform the necessary function and as necessary to receive adjacent construction.

2.16 PAINTING AND SURFACE PREPARATION

- A. All non-submerged steel shall be sandblasted to SSPC-SP-6 specifications and given one coat of Tnemec Series N69 epoxy primer 4-6 MDFT. All submerged steel shall be sandblasted to SSPC-SP-10 specifications and given one coat of Tnemec Series N69 epoxy primer 4-6 MDFT.
- B. Prior to assembly of the drive unit, the castings shall have been sandblasted and thoroughly cleaned to remove any foreign particles in the drive base. After assembly, the drive mechanism shall be solvent cleaned and power wire brushed as needed prior to application of manufacturer's standard primer.
 - 1. The drive unit shall receive a surface preparation of SSPC-SP-06 and shall be finish coated with two (2) coats of Tnemec N69 and one (1) coat of Tnemec Endura-shield series 73.
- C. Gear motors shall be furnished with manufacturer's standard enamel.

2.17 ANCHORS AND SUPPORT

- A. Steel framing and supports shall be in accordance with Section 055000 - Metal Fabrications.
- B. Except where specifically indicated otherwise, all plates and structural members designated for submerged service shall have a minimum thickness of 1/4 inch. All structural steel will conform to ASTM A-36 requirements and steel plate will conform to ASTM A283C requirements. All anchor bolts and assembly fasteners shall be 304 stainless steel. Handrail, skimmer, and rake blade squeegee fasteners shall be 304 stainless steel.
- C. Anchors: All bolts, anchors and support steel shall be provided by the manufacturer and shall be Type 316 stainless steel.

2.18 CONTROLS

- A. Each clarifier drive system shall have a dedicated control system. The control system shall be supplied by the manufacturer. It shall provide total automatic machine operation with protection against overload conditions, which might damage the equipment.
- B. The control system shall be rated for the following classifications:
 - 1. Main control cabinet NEMA-4X, 304 stainless steel cabinet.
- C. Motion Failure Alarm Unit: An external equipment mounted motion failure alarm, (alternately known as "zero speed" or "under-speed" switch) to detect drive failure shall be utilized. Each collector system drive unit shall be equipped with a motion failure alarm unit. The location and mounting details shall be as recommended by the collector system manufacturer.
- D. Emergency Shutdown: The collector system is to be provided with a cable operated OSHA safety stop switch. The trip switch shall immediately stop collector systems when the switch is actuated.
 - 1. Electronic Motor Overload/Trip: Each collector system motor starter shall incorporate a solid state electronic motor starter with integral motor overload.
 - 2. The starter/overload shall be furnished by the party responsible for the collector system electrical controls.
- E. Thermal Protection: An "overload/blockage" indicating light shall be provided. The overload protection shall be sized according to the motor nameplate full load rating. This component shall be equipped with a manual reset and pad-lockable stop button. When the selector switch is on

“AUTO” or “MANUAL” mode, the protection circuit shall cut the power off to the motor and to the control circuit of the motor starter, should the following conditions occur:

1. Overheat of the motor;
 2. Short circuiting;
 3. Single phasing.
- F. Jamming Protection: A current metering system shall protect the system against jamming. A continuous current reading (CMT) shall be monitored by an adjustable relay (CMR). The motor starting current being higher than the setting of the CMR, the jamming protection shall be put out of service by a time delay (TCM), for a predetermined adjustable motor start period, long enough to allow the current to fall below the CMR setting when it reaches its normal full load level. This component shall be equipped with an alarm indicator light and a manual reset push button. Should this system be energized, the “overload/blockage” light shall be activated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install all equipment in accordance with the drawings, approved shop drawings, and the manufacturer's installation instructions. Install level and plumb, with clearances for service and maintenance.
- B. Pipe all submersed grease fittings to an accessible location above the grating acceptable to Owner.
- C. Align, adjust, and connect in accordance with the manufacturer's instructions and leave in proper working condition.
- D. Installation shall include furnishing the required oil and grease for initial operation. The grades for oil and grease shall be in accordance with the manufacturer's recommendations.

3.2 FIELD TESTING

- A. Perform the following field tests and inspections and prepare test reports:
 1. Verify that shipping, blocking, and bracing are removed.
 2. Verify that equipment units are secure on mountings and supporting devices and that connection to pipes and electrical components are complete.
 3. Verify that cleaning and adjusting are complete.
 4. Perform a field test for the clarifier collector equipment and confirm operation of equipment.
- B. Torque Test:
 1. The clarifier mechanism shall be field torque tested. The purpose of the torque test is to verify the structural integrity of the mechanism structural steel design and center drive unit. The testing shall be carried out under the supervision of the equipment manufacturer's representative and as approved by the Engineer before the mechanism is accepted and placed into operation.
 2. The torque test shall consist of securing the rake arms by cables to anchor bolts installed by the contractor in the tank floor at locations specified by the equipment manufacturer. A load shall be applied to the scraper arm in small increments by means of a ratchet lever and cylinder connected to the cable assembly. The magnitude of the applied load shall be

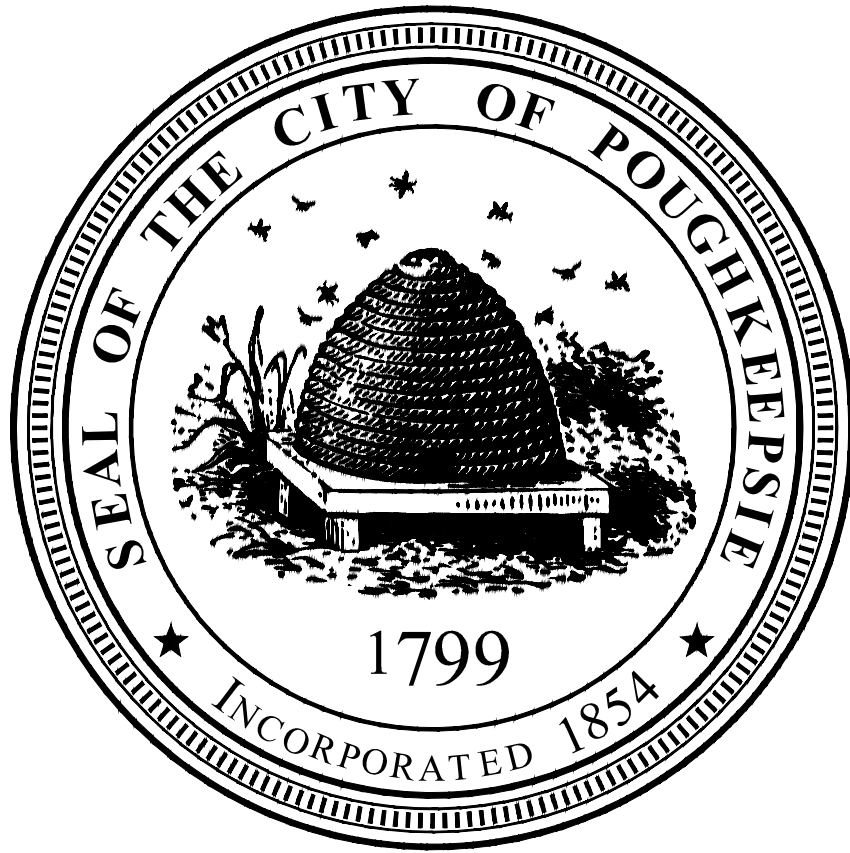
measured by calculating the torque from the distance of the line of action of each cable to the center line of the mechanism. A reading shall be taken at the drive design torque.

3. The manufacturer's service representative shall verify that the alarm, motor cut out, and back up safety motor cut-out switches are properly set and are in proper operation to protect the clarifier mechanism as specified.

3.3 FIELD QUALITY CONTROL

- A. A qualified representative of the manufacturer shall inspect and approve the installation as part of the equipment commissioning.
- B. Retain a qualified field service technician of the manufacturer for a minimum period of one (1) day to perform the following services:
 1. Equipment Calibration:
 - a. Assist with performance of equipment set up and calibrations.
 2. Equipment Installation:
 - a. Assist with start-up and adjusting of completed installation.
 3. Training:
 - a. Instruct plant personnel in the operating and maintenance of the equipment provided under this item.
 - b. All procedures shall be covered including preventative maintenance, method of controlling equipment, and troubleshooting.

END OF SECTION 464331



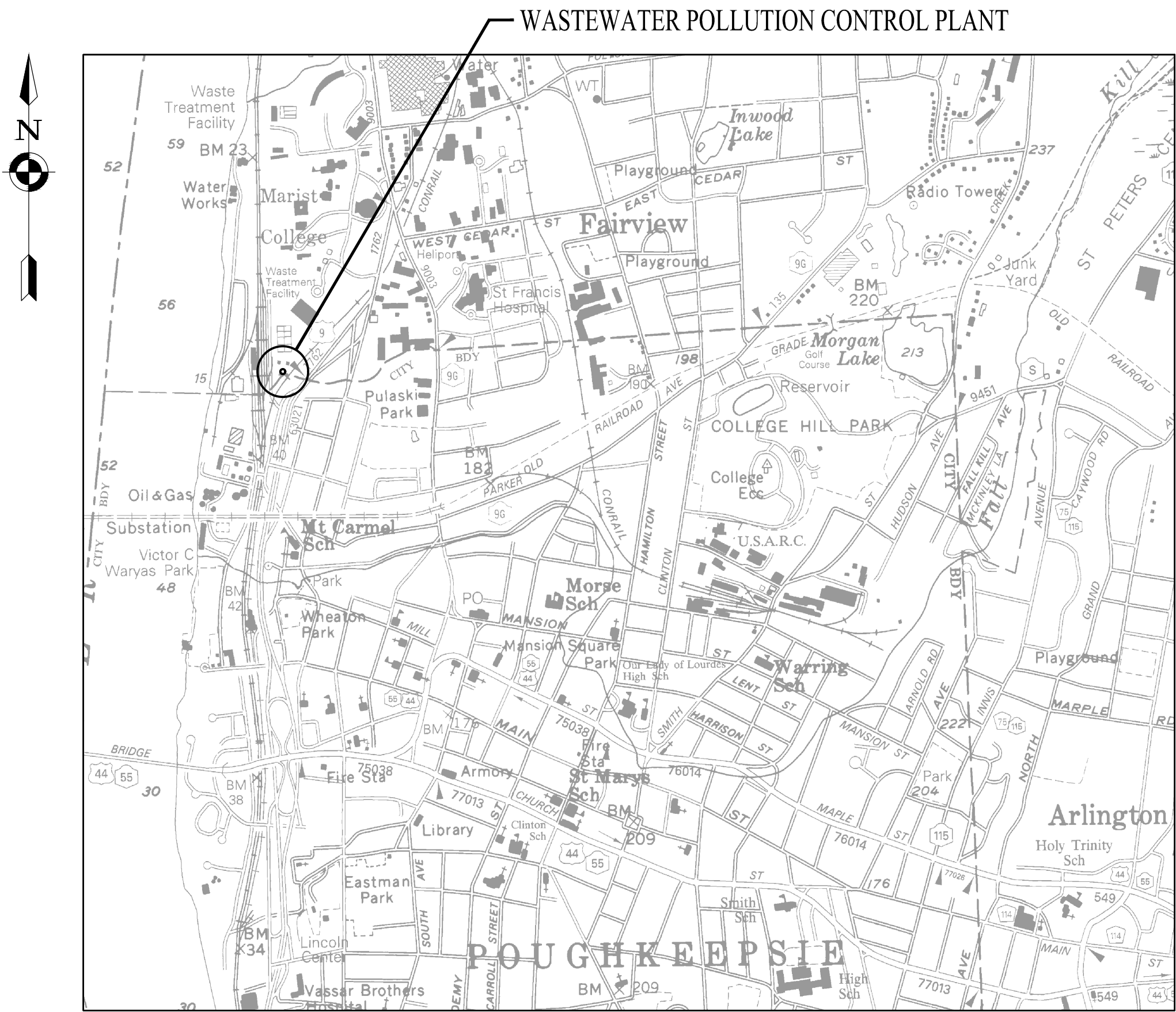
CITY OF POUGHKEEPSIE
ENGINEERING DEPARTMENT

WPCP PLANT SECONDARY CLARIFIERS IMPROVEMENTS

NOVEMBER 1, 2020

WATER POLLUTION CONTROL PLANT

CITY OF POUGHKEEPSIE, DUTCHESS COUNTY, NEW YORK STATE



LOCATION MAP
NOT TO SCALE

DRAWING INDEX:

GENERAL:
G-001 COVER SHEET

PROCESS:
PR-000 SECONDARY CLARIFIERS IMPROVEMENTS KEY PLAN
PR-100 SECONDARY CLARIFIERS IMPROVEMENTS DEMOLITION PLAN AND SECTION
PR-101 SECONDARY CLARIFIERS IMPROVEMENTS CONCRETE REHABILITATION PLAN
PR-200 SECONDARY CLARIFIERS IMPROVEMENTS NEW WORK PLAN AND SECTION
PR-700 SECONDARY CLARIFIERS IMPROVEMENTS MISCELLANEOUS PLANS AND DETAILS
PR-701 SECONDARY CLARIFIERS IMPROVEMENTS SCUM BAFFLE PLANS AND DETAILS

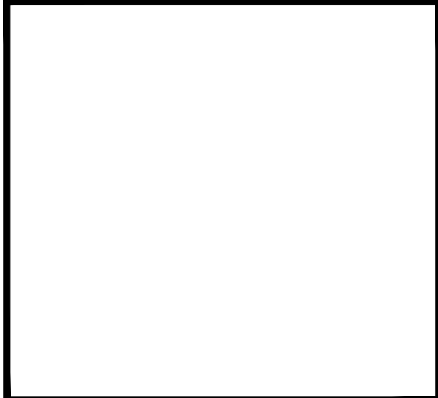
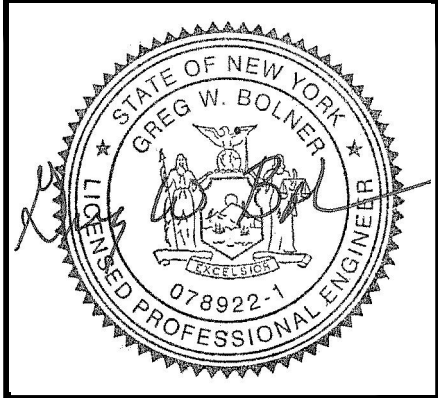
ELECTRICAL:
E-000 ELECTRICAL LEGEND AND ABBREVIATION SHEET
E-102 SECONDARY CLARIFIERS ELECTRICAL DEMOLITION PLAN
E-202 SECONDARY CLARIFIERS ELECTRICAL NEW WORK PLANS



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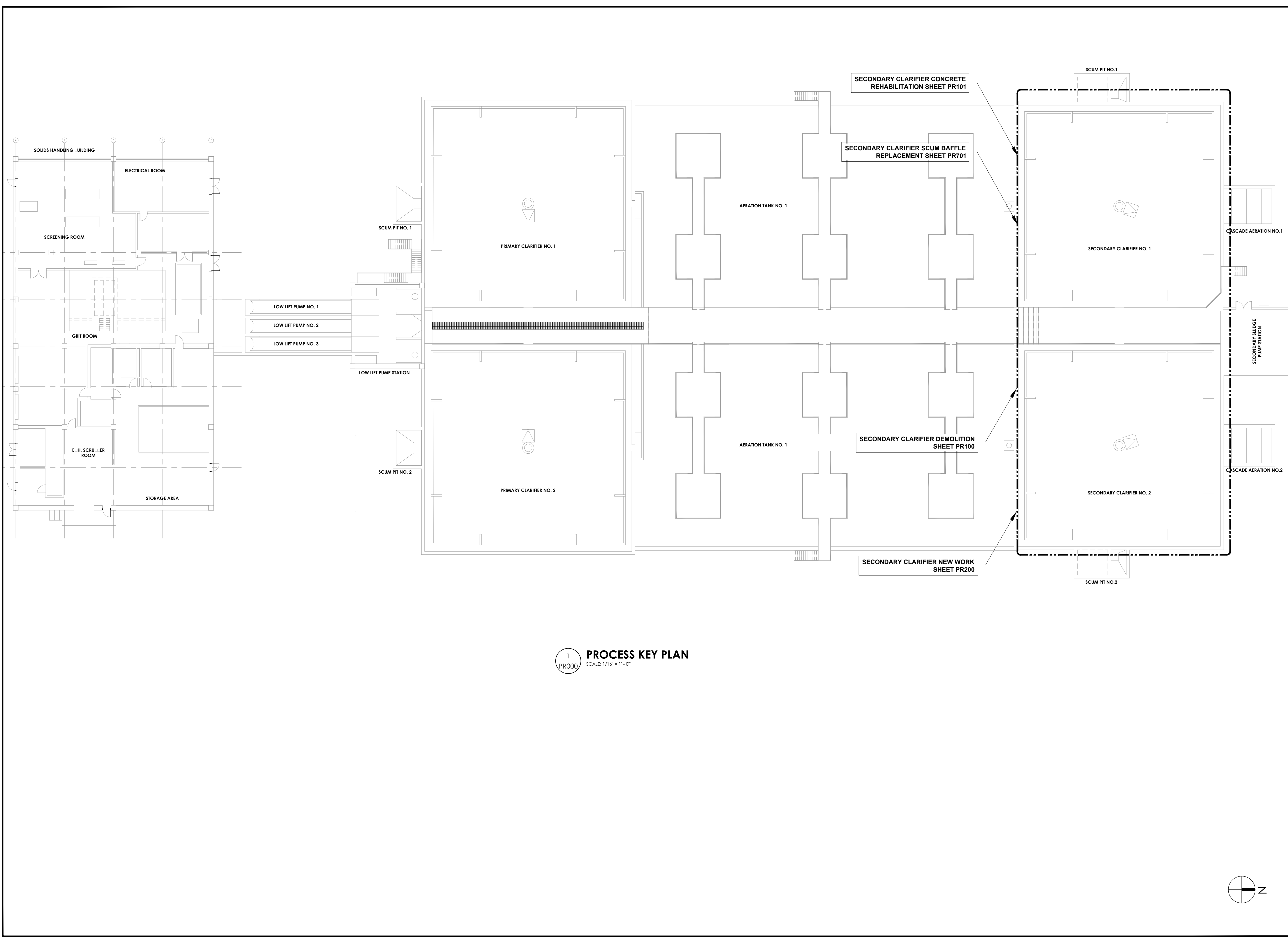


CITY OF POUGHKEEPSIE
ENGINEERING DEPARTMENT
WATER POLLUTION CONTROL PLANT
SECONDARY CLARIFIERS IMPROVEMENTS
CITY OF POUGHKEEPSIE, NEW YORK

DATE 11/1/2020	DRAWN RT	CHECKED GB
SCALE AS SHOWN		
SHEET TITLE SECONDARY CLARIFIERS IMPROVEMENTS COVER SHEET		

PROJECT NUMBER 12422.06
WPCP G001 DRAWING NUMBER

Drawing Name: S:\Projects\Poughkeepsie_C\Sewer Rehab\DWG\08 CAD\AutoCAD\Civil\02\secondary clarifier separate 201110\PR0000.dwg
Date last accessed: 11/30/2020 8:52 AM
Date last plotted: 2/9/2021 10:05 AM
Plotted By: Robert Travis



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WATER POLLUTION CONTROL PLANT
SECONDARY CLARIFIERS IMPROVEMENTS
CITY OF Poughkeepsie, New York

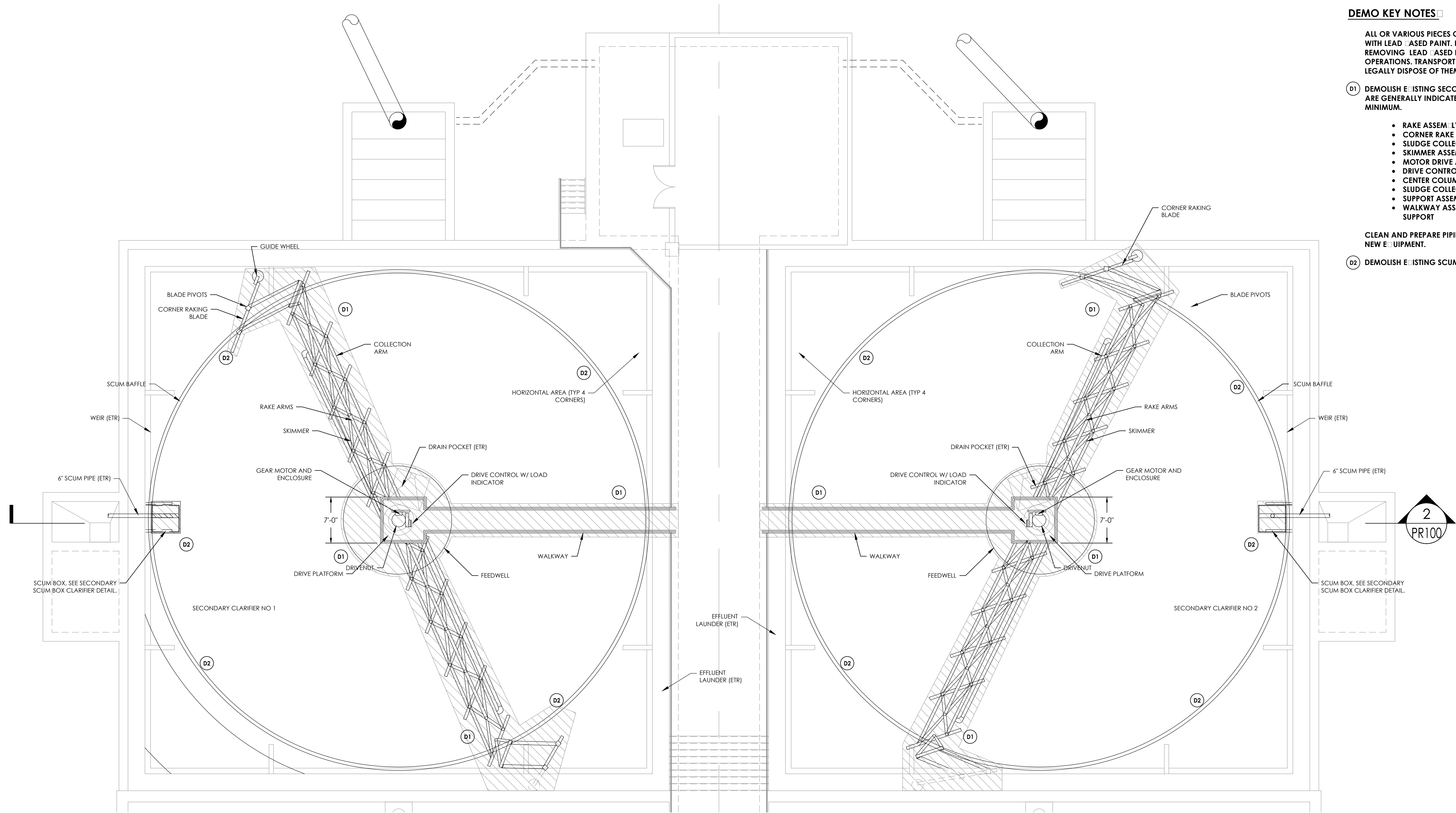
DATE	DRAWN	CHECKED
11/1/2020	RT	GB

SCALE	SHEET TITLE
AS SHOWN	SECONDARY CLARIFIER IMPROVEMENTS KEY PLAN

PROJECT NUMBER
12422.06

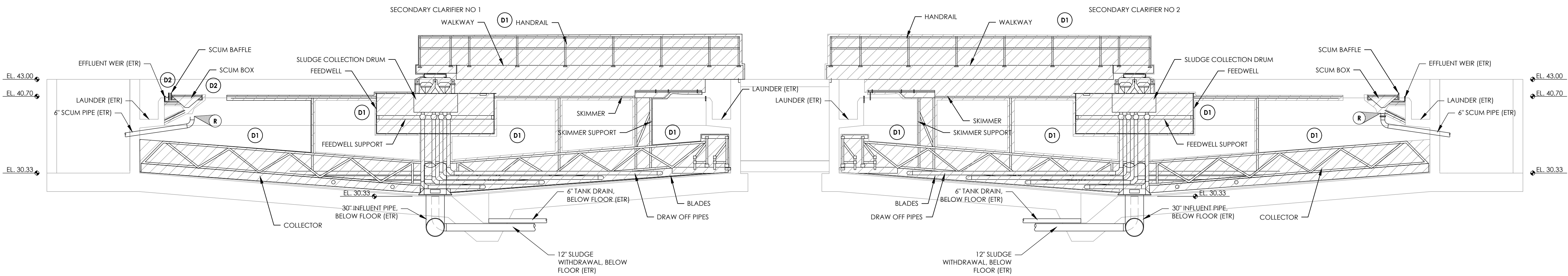
WPCP
PR000
DRAWING NUMBER

THIS A VIFICATION OF THE NEW YORK STATE EDUCATION LAW AND THE COMMISSIONER'S REGULATIONS FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, ENGINEER OR LAND SURVEYOR, TO ALTER ANY ITEM IN ANY WAY. IF ANY ITEM BEARING THE SEAL OF AN ARCHITECT, ENGINEER OR LAND SURVEYOR IS ALTERED, THE ALTERING PARTY SHALL APPEAR TO THE SEAL THEIR SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



1
PR100
SCALE: 1/8" = 1'-0"

SECONDARY CLARIFIER DEMOLITION PLAN



2
PR100
SCALE: 1/8" = 1'-0"

SECONDARY CLARIFIER DEMOLITION SECTION

DEMO KEY NOTES

ALL OR VARIOUS PIECES OF THE EXISTING CLARIFIER EQUIPMENT MAY BE COATED WITH LEAD BASED PAINT. FOLLOW PROCEDURES OUTLINED IN SPECIFICATIONS FOR REMOVING LEAD BASED PAINT IN AREAS WHICH WILL BE AFFECTED BY CUTTING OPERATIONS. TRANSPORT DEMOLISHED MATERIALS OFF OWNER'S PROPERTY AND LEGALLY DISPOSE OF THEM.

D1 DEMOLISH EXISTING SECONDARY CLARIFIER EQUIPMENT IN ITS ENTIRETY. REMOVALS ARE GENERALLY INDICATED BY HATCHED AREAS AND WILL INCLUDE AT A MINIMUM.

- RAKE ASSEMBLY
- CORNER RAKE ASSEMBLY
- SLUDGE COLLECTION PIPING
- SKIMMER ASSEMBLY
- MOTOR DRIVE ASSEMBLY
- DRIVE CONTROL ASSEMBLY
- CENTER COLUMN ASSEMBLY
- SLUDGE COLLECTION DRUM
- SUPPORT ASSEMBLY INCLUDING UPPER AND LOWER CAGE
- WALKWAY ASSEMBLY INCLUDING RAILING AND STRUCTURAL STEEL SUPPORT

CLEAN AND PREPARE PIPING AND EQUIPMENT TO REMAIN FOR CONNECTION TO NEW EQUIPMENT.

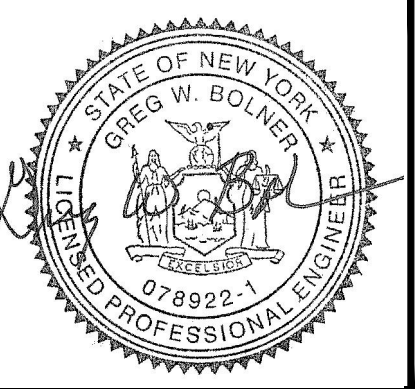
D2 DEMOLISH EXISTING SCUM COLLECTION PIPING, SCUM Baffles AND SUPPORT.



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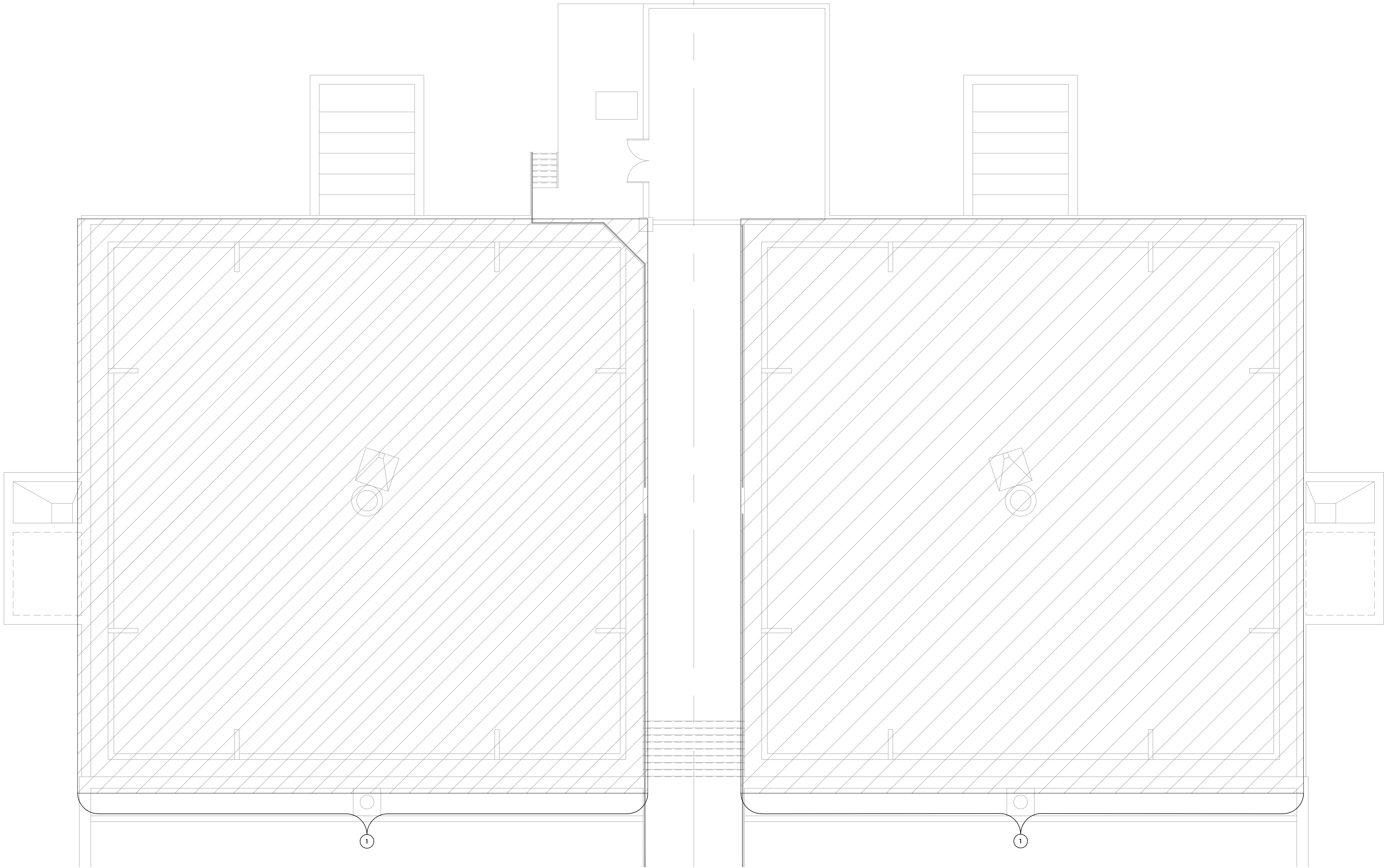


CITY OF Poughkeepsie
ENGINEERING DEPARTMENT
WATER POLLUTION CONTROL PLANT
SECONDARY CLARIFIERS IMPROVEMENTS

CITY OF Poughkeepsie, NEW YORK

DATE	DRAWN	CHECKED
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SCALE	AS SHOWN	
SHEET TITLE	SECONDARY CLARIFIERS IMPROVEMENTS DEMOLITION PLAN AND SECTION	

PROJECT NUMBER
12422.06
WPCP
PR100
DRAWING NUMBER



1 PROVIDE CONCRETE REHABILITATION OF THE SECONDARY CLARIFIER CONCRETE TANKS AND TROUGHS. THE SCOPE OF WORK SHALL INCLUDE UNIT PRICE ITEMS:

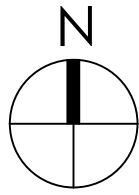
- REMOVAL OF DETERIORATED CONCRETE AND SUBSEQUENT PATCHING AND REBUILDING.
- EPOXY CRACK INJECTION.
- EXPANSION JOINT REPAIR.

PROVIDE CONCRETE REHABILITATION IN ACCORDANCE WITH DIVISION 3 REQUIREMENTS.

1
PR101

CONCRETE REHABILITATION PLAN

SCALE: 1/8" = 1'-0"

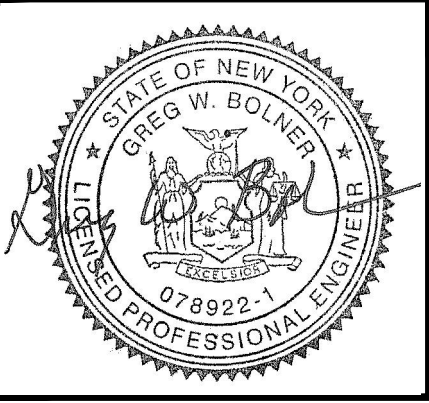




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CITY OF Poughkeepsie
ENGINEERING DEPARTMENT

WATER POLLUTION CONTROL PLANT
SECONDARY CLARIFIERS IMPROVEMENTS

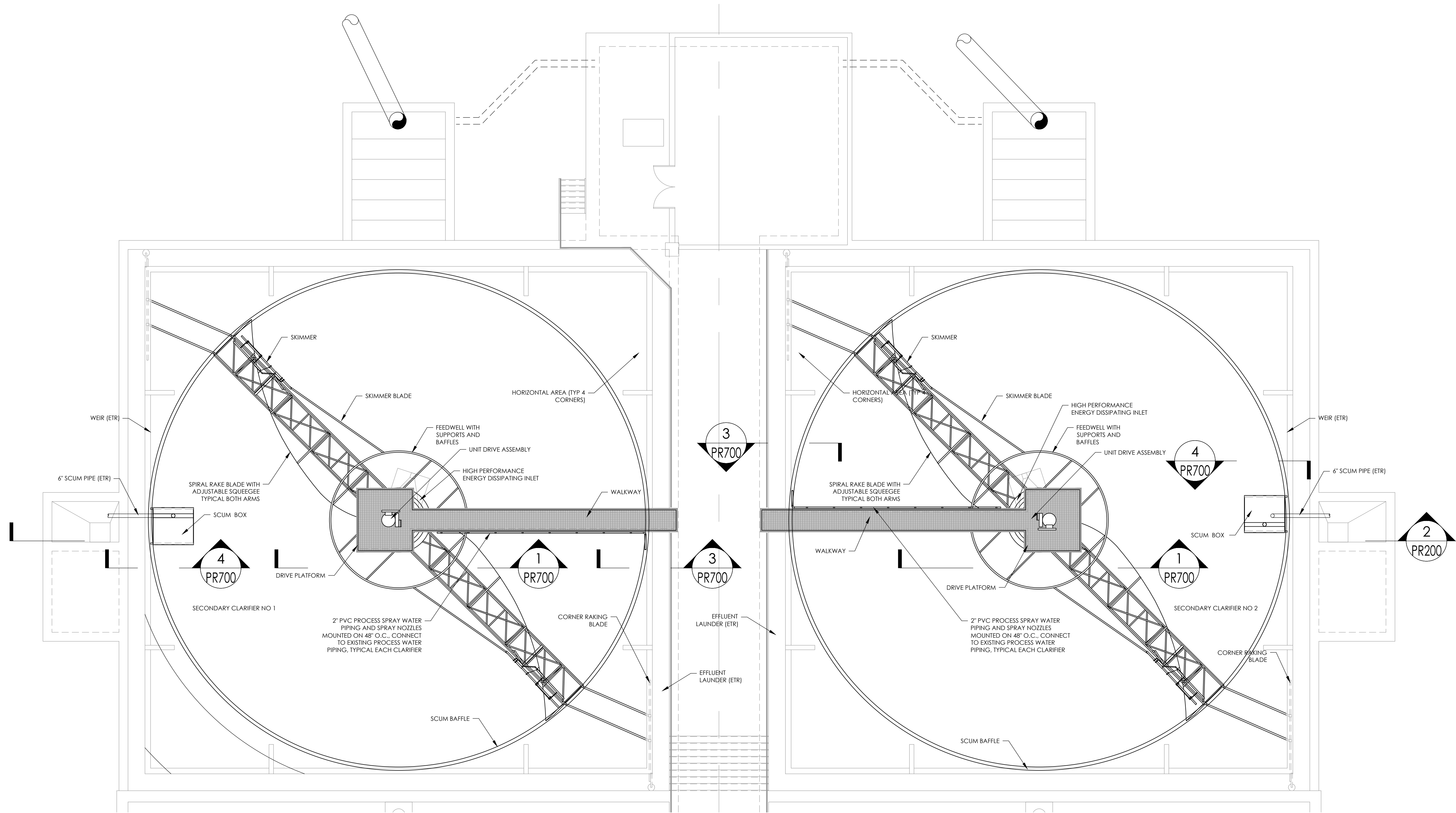
CITY OF Poughkeepsie, NEW YORK

DATE 11/1/2020	DRAWN RJT	CHECKED RJT
SCALE: AS SHOWN		
SHEET TITLE SECONDARY CLARIFIER IMPROVEMENTS CONCRETE REHABILITATION PLAN		

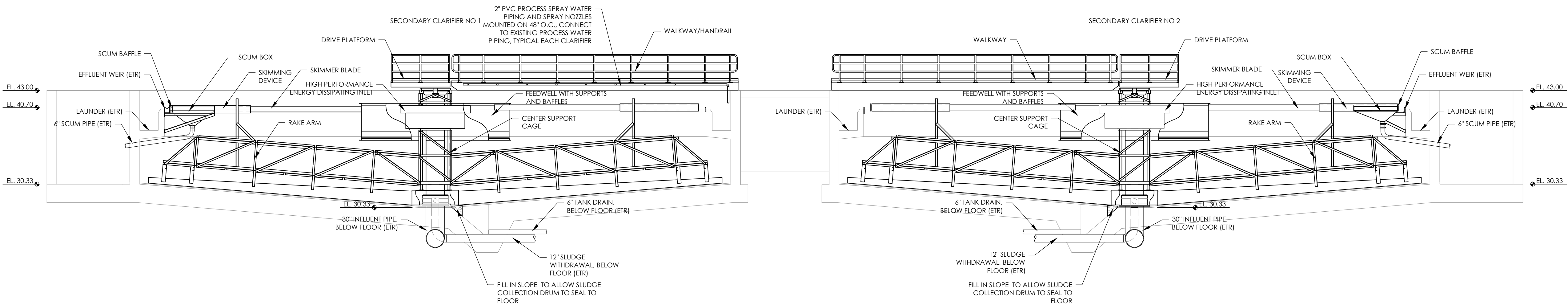
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WPCP
PR101

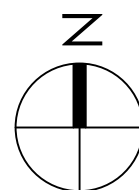
DRAWING NUMBER



1 SECONDARY CLARIFIER NEW WORK PLAN
SCALE: 1/8" = 1'-0"



2 SECONDARY CLARIFIER NEW WORK SECTION
SCALE: 1/8" = 1'-0"



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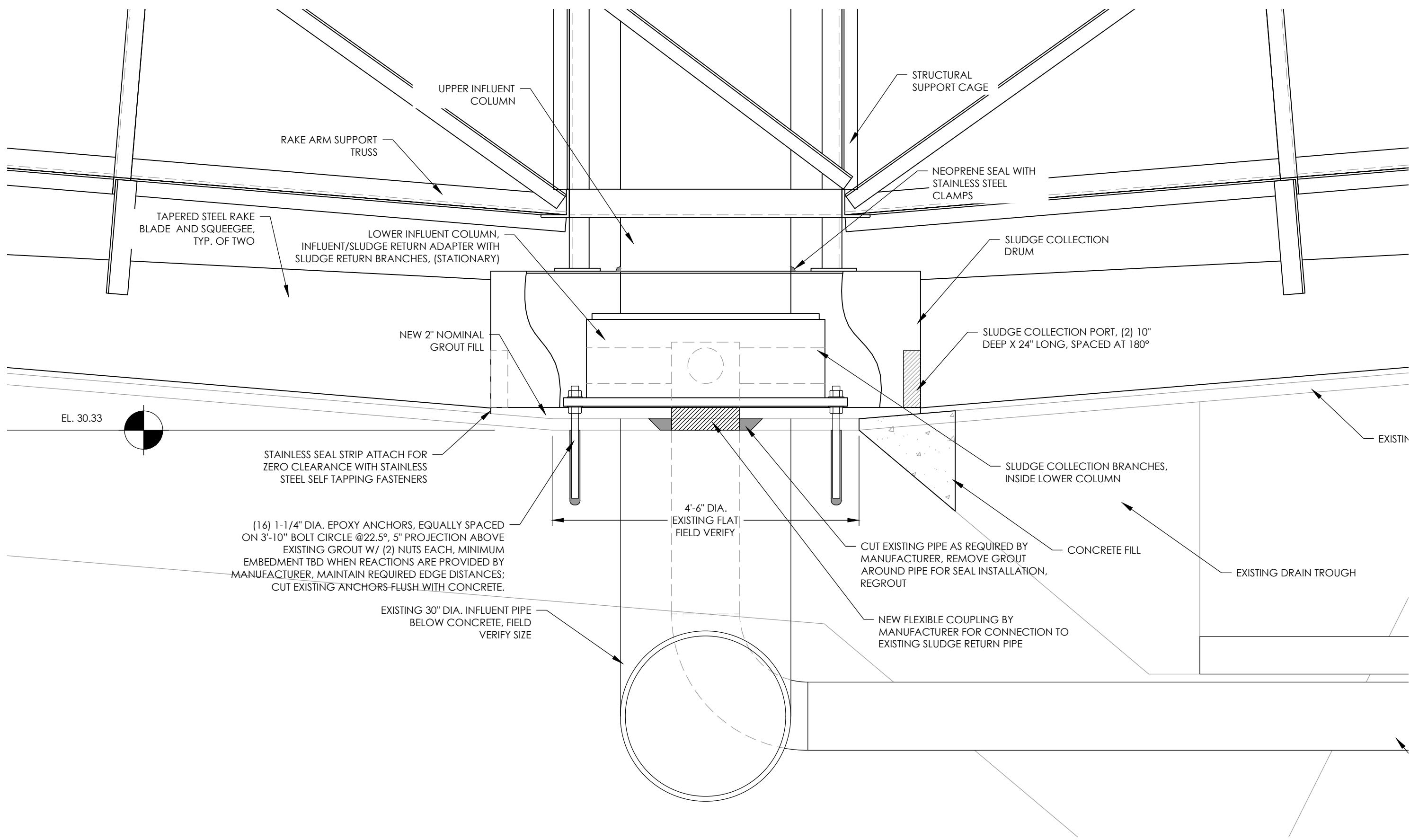
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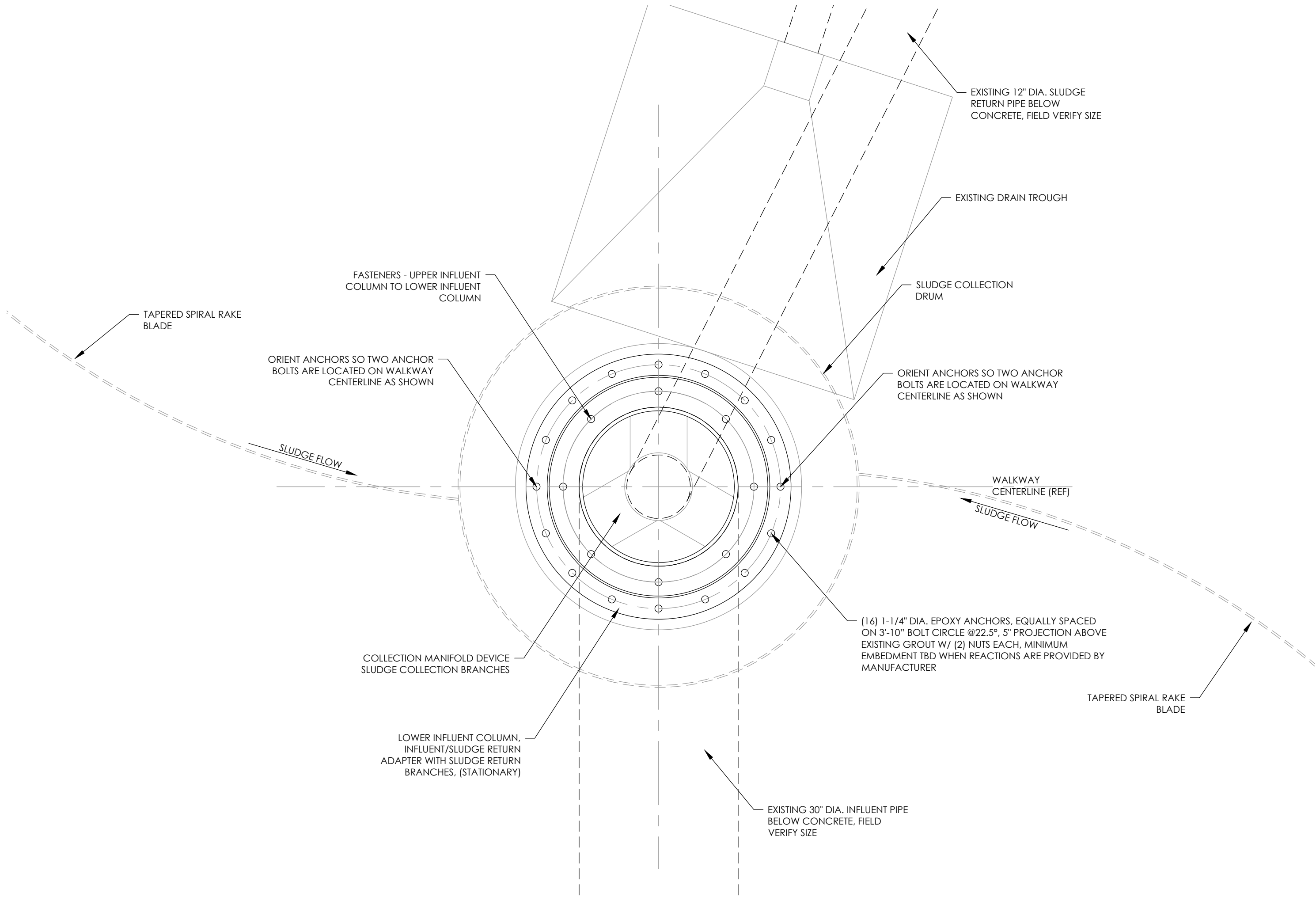
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DATE	DRAWN	CHECKED
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SCALE AS SHOWN		
SHEET TITLE		
SECONDARY CLARIFIER IMPROVEMENTS NEW WORK PLAN AND SECTION		

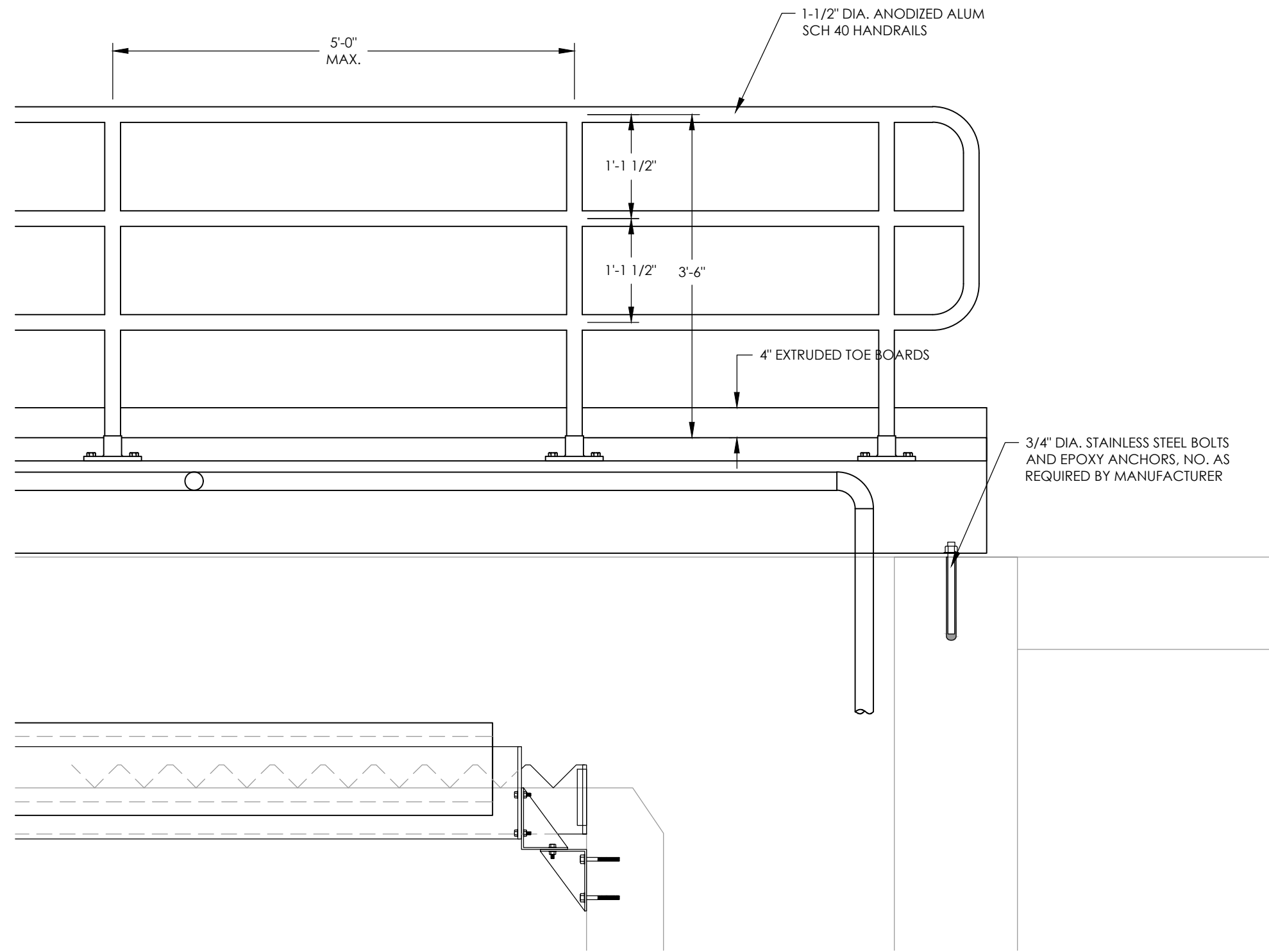
PROJECT NUMBER
12422.06
WPCP PR200
DRAWING NUMBER



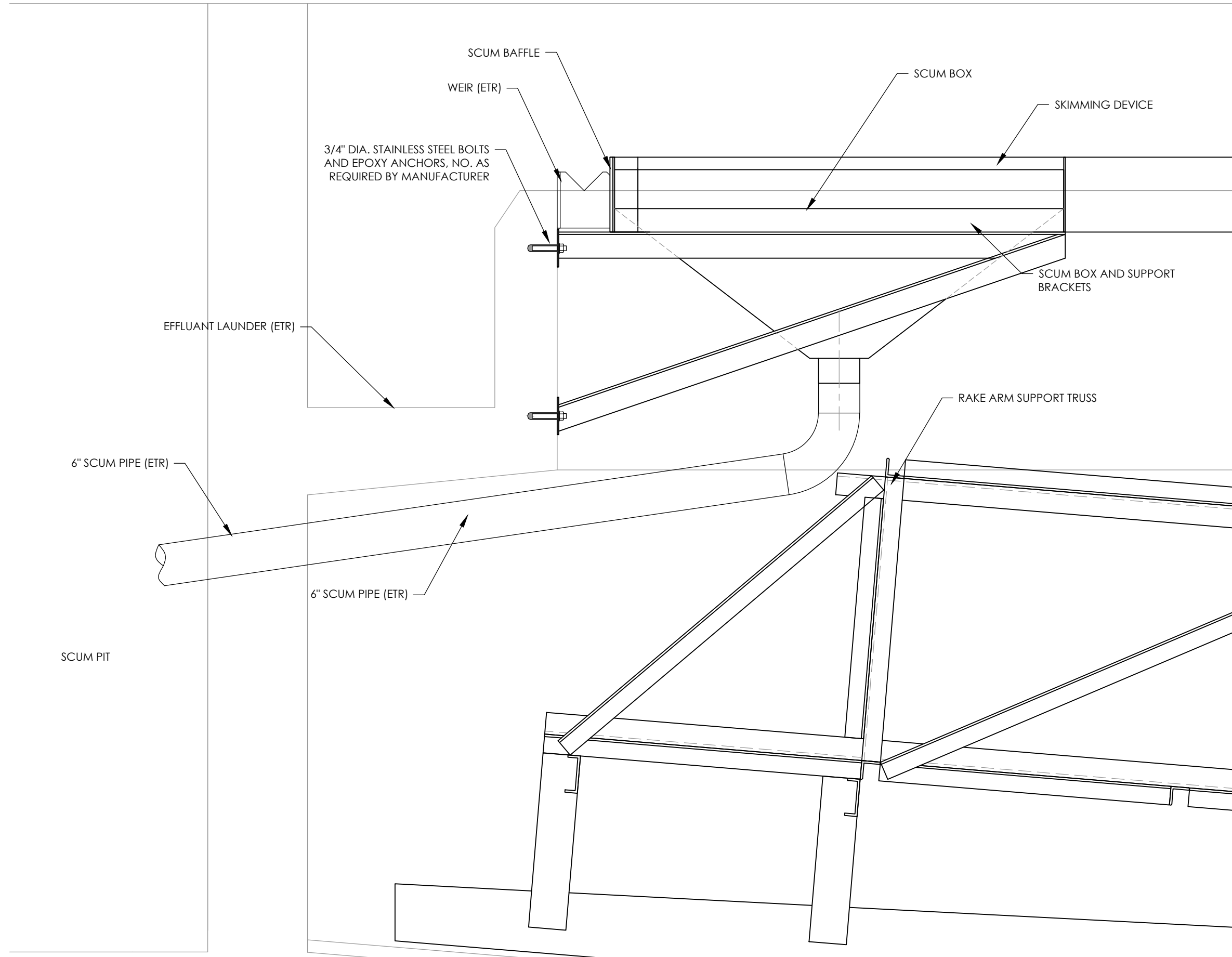
1 SECONDARY CLARIFIER LOWER SUPPORT SECTION
SCALE: 3/4" = 1'-0"



2 SECONDARY CLARIFIER LOWER SUPPORT PLAN
SCALE: 3/4" = 1'-0"



3 WALKWAY ANCHOR HANDRAIL DETAIL
SCALE: 3/4" = 1'-0"



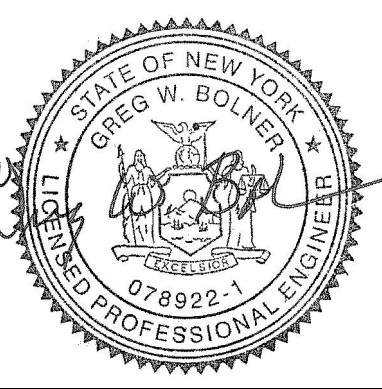
4 SCUM DETAIL
SCALE: 3/4" = 1'-0"



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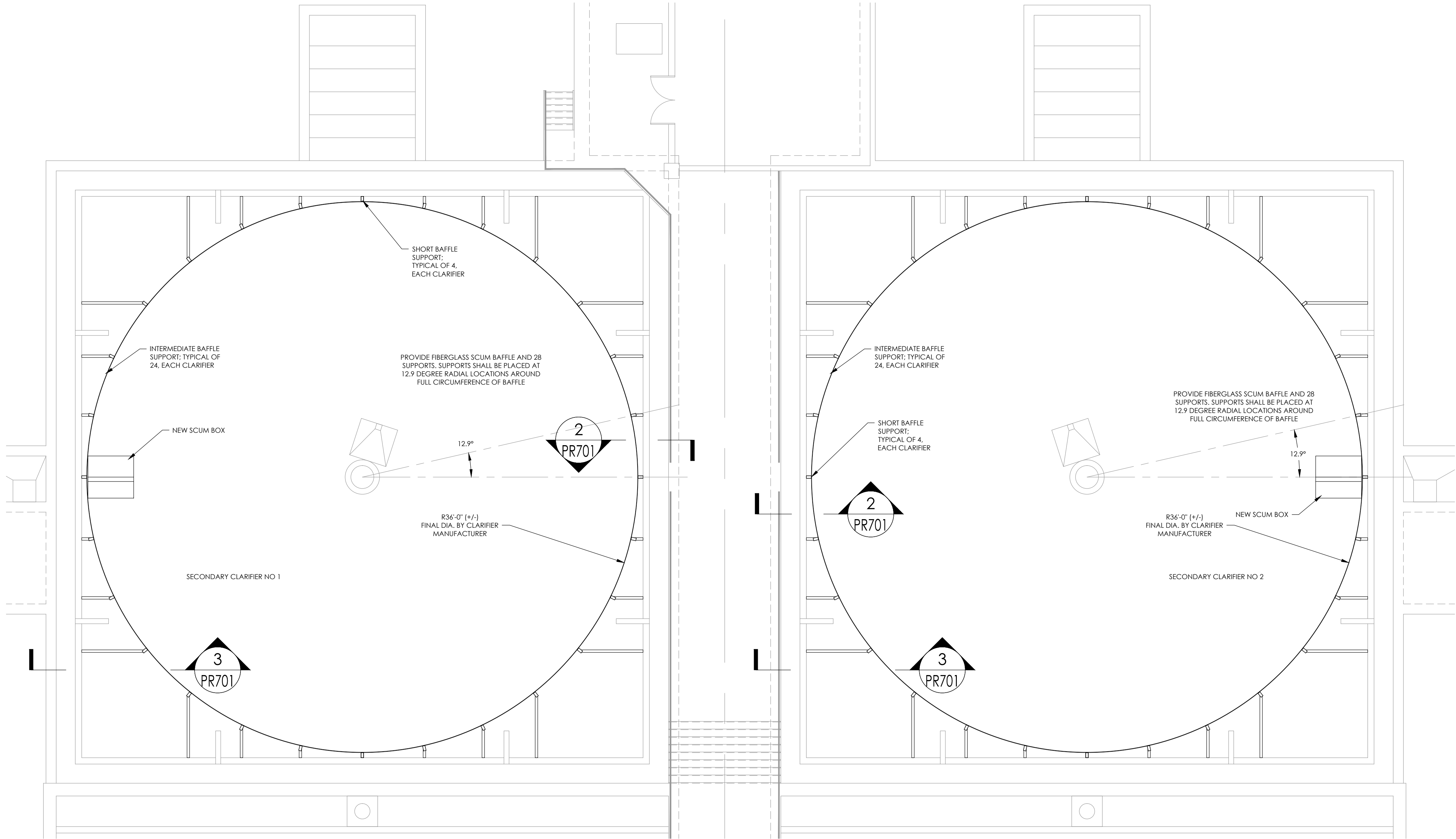
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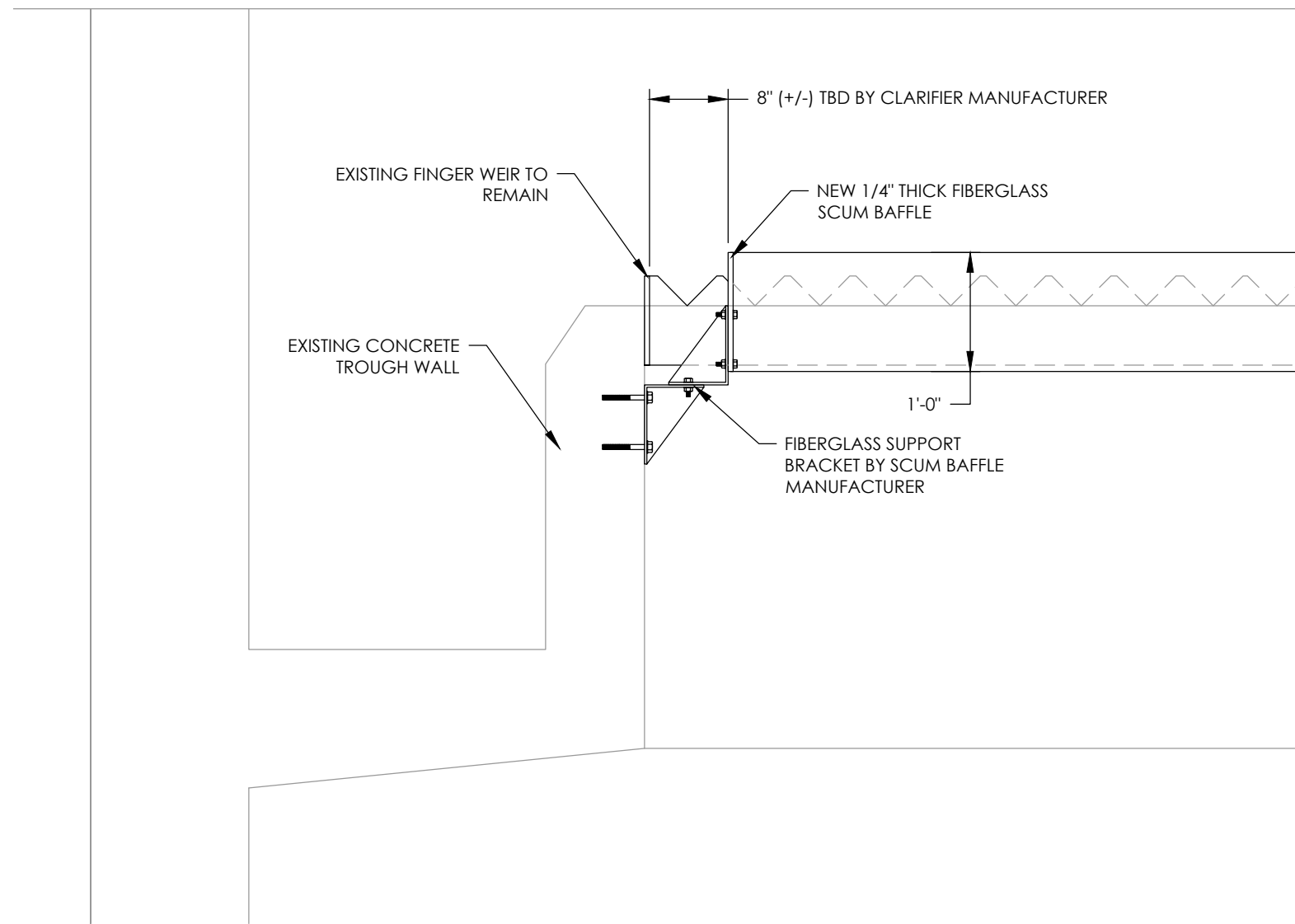
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11/1/2020	RT	GB
SCALE	AS SHOWN	
SHEET TITLE	SECONDARY CLARIFIER IMPROVEMENTS MISCELLANEOUS PLANS AND DETAILS	

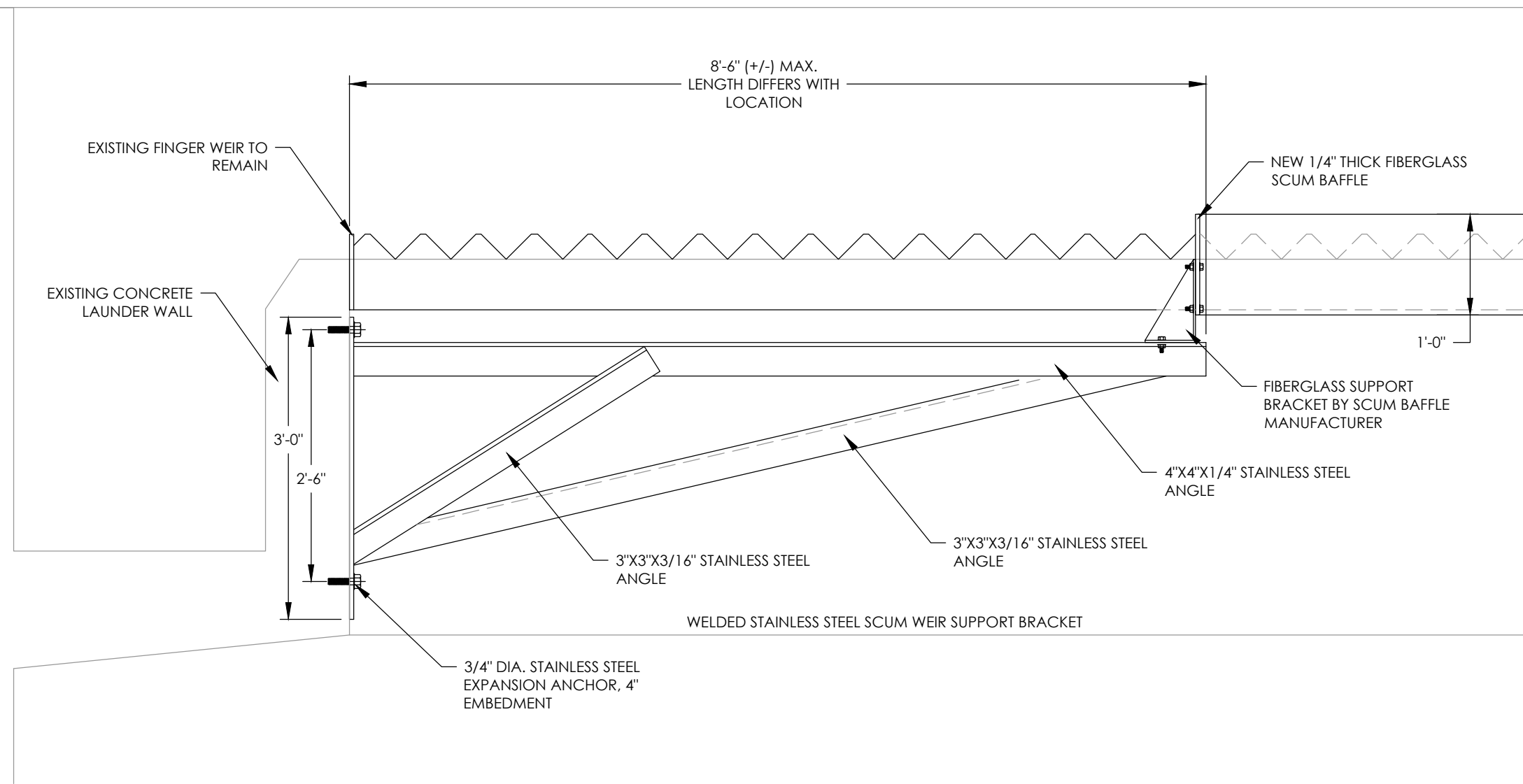
PROJECT NUMBER
12422.06
WPCP
PR700
DRAWING NUMBER



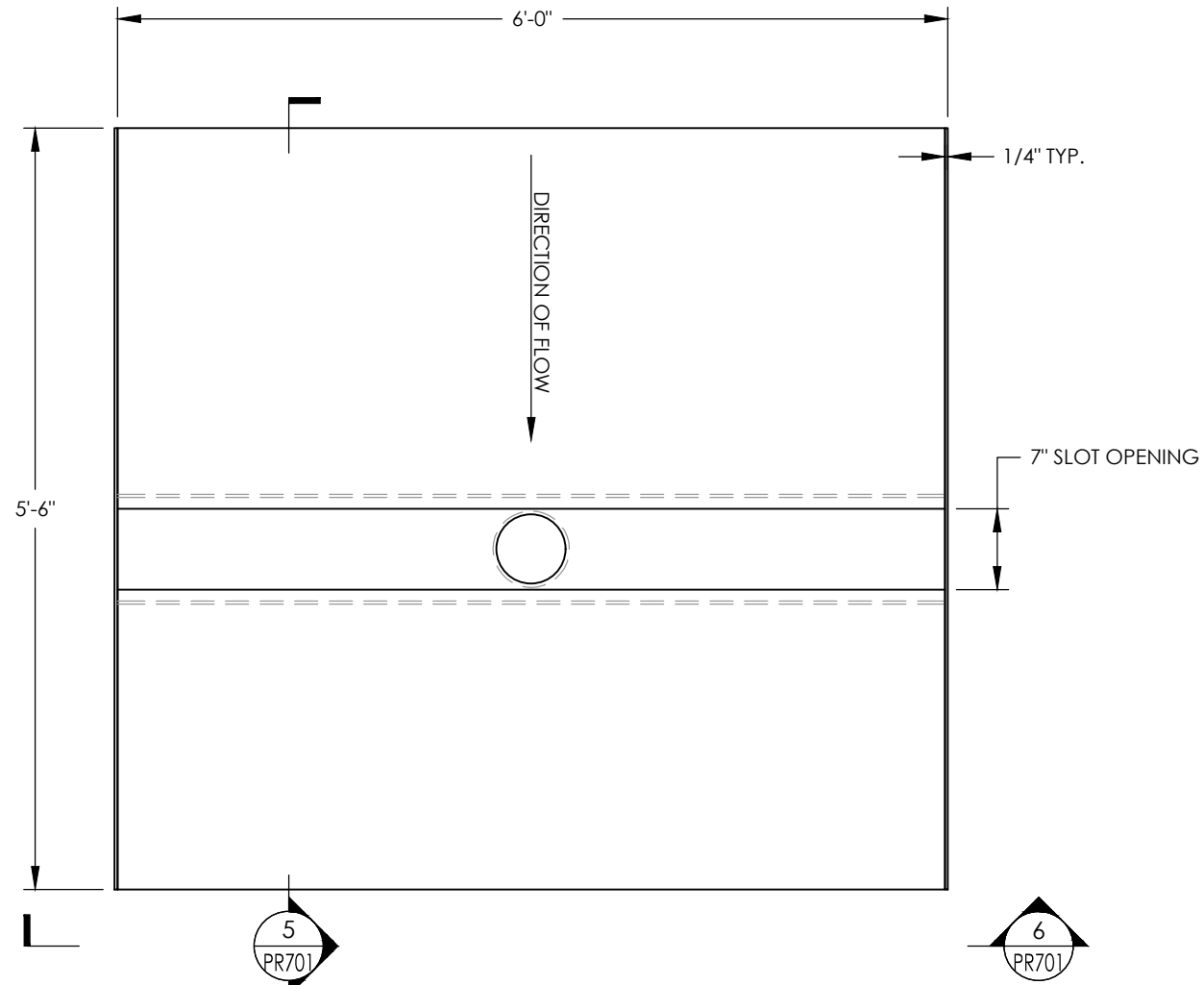
1 SECONDARY CLARIFIER SCUM BAFLE SUPPORT PLAN
SCALE: 1/8" = 1'-0"



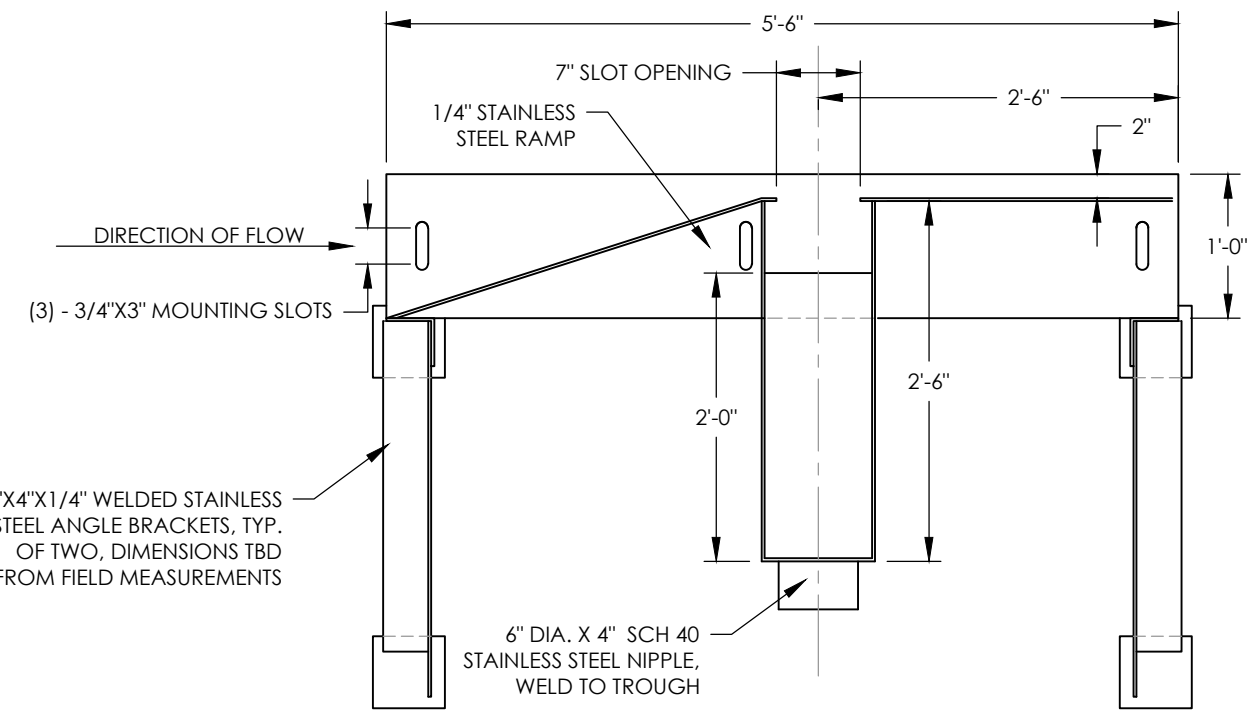
2 SCUM BAFLE SHORT SUPPORT
SCALE: 3/4" = 1'-0"



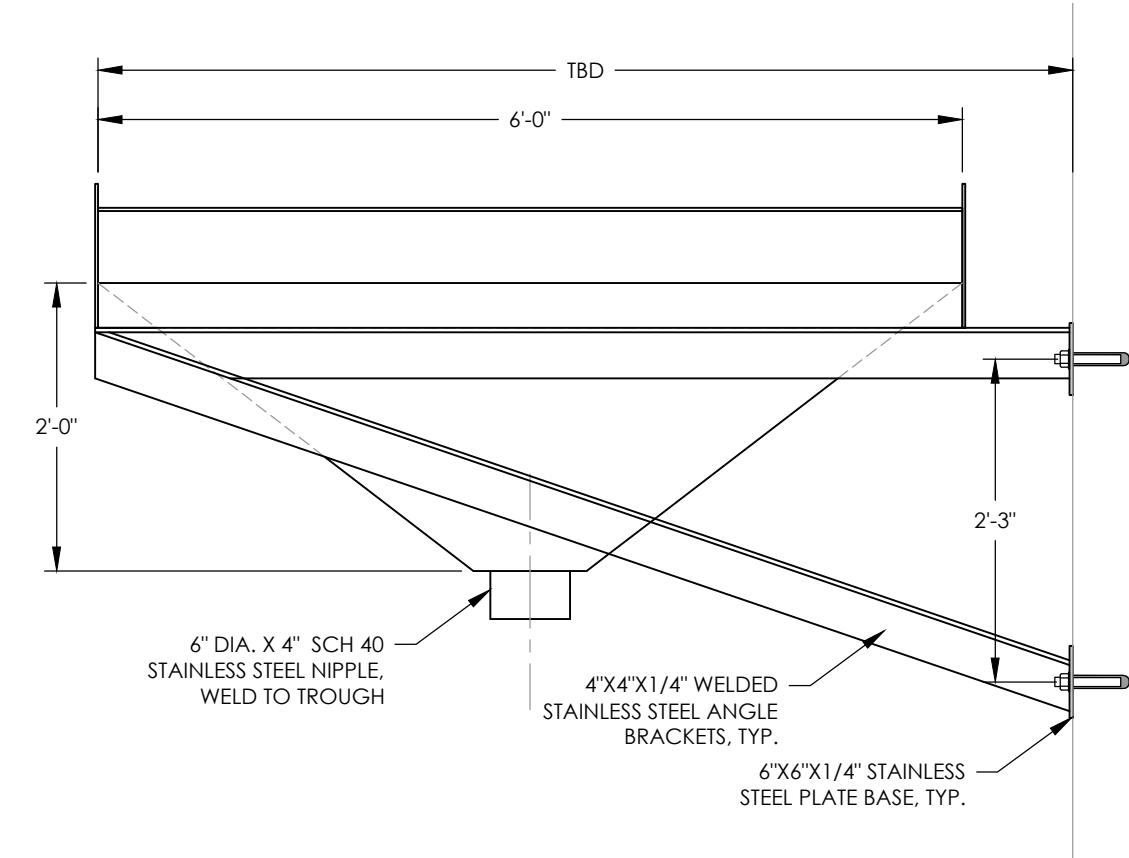
3 SCUM BAFLE INTERMEDITE SUPPORT
SCALE: 3/4" = 1'-0"



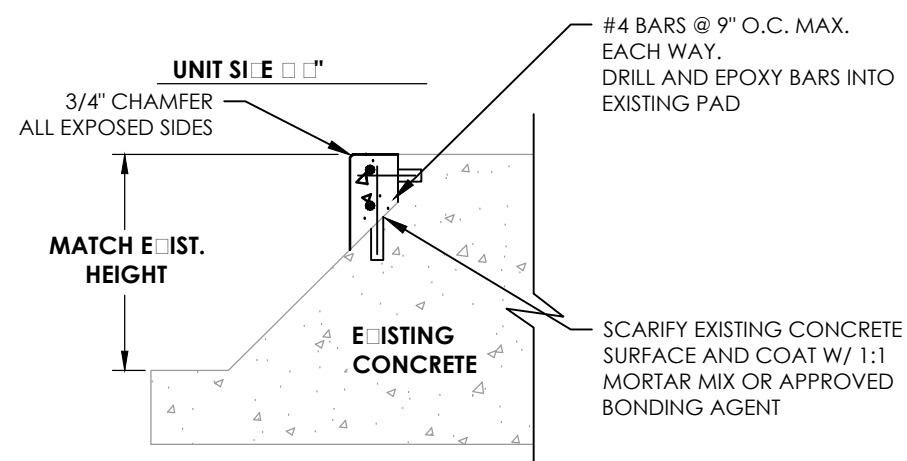
4 SCUM BOX PLAN
SCALE: 3/4" = 1'-0"



5 SCUM BOX SECTION
SCALE: 3/4" = 1'-0"



6 SCUM BOX ELEVATION
SCALE: 3/4" = 1'-0"



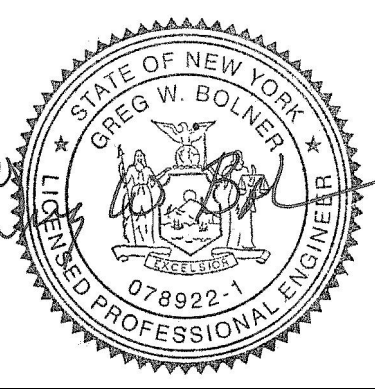
7 CONCRETE FILL DETAIL
SCALE: NO SCALE



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SHEET TITLE	SECONDARY CLARIFIER IMPROVEMENTS SCUM BAFLE PLANS AND DETAILS	

PROJECT NUMBER	12422.06
WPCP PR701	
DRAWING NUMBER	

WIRING LEGEND

S.	SWITCH
(NONE)	SINGLE POLE TOGGLE SWITCH
2	TWO POLE TOGGLE SWITCH
3	THREE WAY TOGGLE SWITCH
4	FOUR WAY TOGGLE SWITCH
WP	SINGLE POLE WEATHER PROOF SWITCH
K	SINGLE POLE KEYED SWITCH
K2	TWO POLE KEYED SWITCH
K3	THREE WAY KEYED SWITCH
K4	FOUR WAY KEYED SWITCH
P	SINGLE POLE SWITCH WITH PILOT LIGHT
TM	SINGLE POLE SWITCH WITH ONE HOUR TIMER
T	THERMAL SWITCH
TP	THERMAL SWITCH WITH PILOT LIGHT
M	MOMENTARY CONTACT SWITCH
S _{II}	ROMAN NUMERAL DESIGNATES NUMBER OF SWITCHES
S ₃	LOWER CASE LETTER DESIGNATES SWITCH LEG
⊕	SINGLE RECEPTACLE
	PLUG MOLD
⊕ ₂	DUPLEX RECEPTACLE
⊕ ₄	QUADRAPLEX RECEPTACLE
⊕ _S	SPECIAL RECEPTACLE
GFI	GROUND FAULT CIRCUIT INTERRUPTER
WP	WEATHER PROOF IN-USE COVER
SS	SURGE SUPPRESSION
C	COUNTER HEIGHT
TR	TAMPER RESISTANT, UL LISTED
IG	ISOLATED GROUND
RT	RAIN TITE
E	EMERGENCY
X	TYPE X [SEE RECEPTACLE SCHEDULE]
PP	POWER POLE
	RECESSED FLOOR MOUNTED DUPLEX RECEPTACLE
	SURFACE MOUNTED FLOOR RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE
C	CONDUIT
W	EXPOSED LOW VOLTAGE WIRING
	HORIZONTAL NON-METALLIC WIREWAY WITH DATA JACK OUTLETS AND ISOLATED GROUND TYPE DUPLEX RECEPTACLES
	VERTICAL NON-METALLIC WIREWAY WITH DATA JACK OUTLETS AND ISOLATED GROUND TYPE DUPLEX RECEPTACLES
WM	WIRE MOLD
JB	JUNCTION BOX
F	FIRE SYSTEM
S	SECURITY SYSTEM
	DISCONNECT SWITCH
	DISCONNECT SWITCH - WEATHER PROOF (NEMA 3R)
	FUSED DISCONNECT SWITCH
	COMBINATION FUSED DISCONNECT/ MAGNETIC STARTER SWITCH
HOA	HAND/OFF/AUTO
SS	START/STOP
M	MANUAL STARTER
VSD	COMBINATION VARIABLE SPEED DRIVE AND DISCONNECT
VSD	VARIABLE SPEED DRIVE
ST/SP	PUSHBUTTON - START, STOP
ST/SP/PL	PUSHBUTTON - START, STOP, WITH PILOT LIGHT
UP/DN/SP	PUSHBUTTON - UP, DOWN, STOP
EP-1	MOTOR WITH DESIGNATOR
TC	TIME CLOCK
WH	WATER HEATER
HD	HAND DRYER, HARD WIRED
T	THERMOSTAT
HVP1-6	BRANCH CIRCUIT HOME RUN WITH PANEL NAME AND CIRCUIT NUMBER, QUANTITY OF ARROWHEADS DENOTES QUANTITY OF BRANCH CIRCUITS
GFI BKR.	GFI TYPE BREAKER
A.F. BKR.	ARC FAULT BREAKER
	BRANCH CIRCUIT WIRING, PROVIDE QUANTITIES OF CONDUCTORS REQUIRED FOR CIRCUITING AND SWITCHING AS INDICATED
	POWER LEG ONLY (NO SWITCH LEG BETWEEN ROOMS)
	HARDWIRE CONNECTION
	CONDUIT RISER UP
	CONDUIT RISER DOWN
	TRANSFORMER
K	TYPE "K" TRANSFORMER
	MUSHROOM HEAD PUSH BUTTON (EMERGENCY STOP)
	EMERGENCY BREAK GLASS STATION
	GROUNDING ROD

SINGLE LINE DIAGRAM LEGEND

	EARTH GROUND
	CHASSIS GROUND
	TRANSFORMER - KVA, PRIMARY AND SECONDARY VOLTAGE INDICATED, CONNECTIONS, K-RATING, AND SHIELD SPECIFIED
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	FUSE
	DISCONNECT/LOADBREAK SWITCH
	CIRCUIT BREAKER
	CIRCUIT BREAKER DRAWOUT MOUNTED (LOW VOLTAGE)
	AUTOMATIC TRANSFER SWITCH (NORMAL POSITION SHOWN)
	METER
	ENCLOSED CIRCUIT BREAKER
	LIGHTNING ARRESTER
	FUSED DISCONNECT SWITCH
	PANEL 208-120V 225A
	PANELBOARD- RATINGS AS SPECIFIED IN SINGLE LINE DIAGRAM AND ON PANELBOARD SCHEDULE

FIRE/LIFE SAFETY LEGEND

	FIRE ALARM PULL STATION
	FIRE ALARM BELL
	FIRE ALARM HORN
	FIRE ALARM HORN AND STROBE COMBINATION
	FIRE ALARM HORN AND STROBE COMBINATION, WEATHER PROOF
	FIRE ALARM SPEAKER
	FIRE ALARM SPEAKER - CEILING MOUNTED
	FIRE ALARM SPEAKER AND STROBE COMBINATION
	FIRE ALARM STROBE
	FIRE ALARM STROBE - CEILING MOUNTED
	SMOKE DETECTOR
	SMOKE DETECTOR WITH GUARD
	CARBON MONOXIDE DETECTOR
	NATURAL GAS SENSOR
	HEAT DETECTOR
	COMBINATION SMOKE/HEAT DETECTOR
	HEAT DETECTOR - 190° FIXED TEMPERATURE
	HEAT DETECTOR - EXPLOSION PROOF
	BEAM SMOKE DETECTOR TRANSMITTER
	BEAM SMOKE DETECTOR RECEIVER
	DUCT DETECTOR
SA	INDICATES INSTALLATION IN SUPPLY AIR
RA	INDICATES INSTALLATION IN RETURN AIR
	REMOTE TEST STATION FOR DUCT DETECTOR
	FIRE ALARM SHUT DOWN RELAY
	FIRE DOOR HOLD OPEN
	TAMPER SWITCH
	FLOW SWITCH
	FIRE SUPPRESSION ANSUL SYSTEM CONNECTION
	SMOKE DAMPER RELAY CONNECTION
SD/FD	SMOKE DAMPER AND FIRE DAMPER
SD	SMOKE DAMPER
	CONTROL MODULE, ADDRESSABLE
	AREA OF RESCUE CALL STATION
	AREA OF RESCUE MASTER TELEPHONE STATION

LIGHT FIXTURE LEGEND

	LIGHTING FIXTURE (SEE LIGHTING FIXTURE SCHEDULE FOR LETTER DESIGNATION AND DESCRIPTION OF FIXTURES)
	EMERGENCY AND/OR NIGHT LIGHT LIGHTING FIXTURE
	EXIT LIGHTING FIXTURE UNIVERSAL MOUNT, SINGLE/DOUBLE FACE (WHERE USED, ARROW INDICATES CHEVRON DIRECTION)
	BATTERY POWERED EMERGENCY LIGHT
	EMERGENCY LIGHT REMOTE HEAD
	TRACK LIGHTING
	POLE MOUNTED LIGHTING (QUANTITY AND ORIENTATION OF HEADS AS SHOWN)
	OCCUPANCY SENSOR - CEILING MOUNTED
	OCCUPANCY SENSOR - WALL MOUNTED
	LIGHTING CONTACTOR
	PHOTOCELL
	AMBIENT LIGHT SENSOR
S.	SWITCH
LV	LOW VOLTAGE 1-4 BUTTON STATION (CONNECT TO LIGHTING CONTROL STATION)
OS	OCCUPANCY SENSOR SWITCH
D	DIMMER (INCANDESCENT)
D3	THREE WAY DIMMER (INCANDESCENT)
DF	DIMMER (FLUORESCENT)

PANEL LEGEND

	EXISTING ELECTRICAL PANEL
	NEW ELECTRICAL PANEL
MDP	MAIN DISTRIBUTION PANEL
LVP	LOW VOLTAGE PANEL
HVP	HIGH VOLTAGE PANEL
LP	LIGHTING CONTROL PANEL
IG	ISOLATED GROUND PANEL
MSB	MAIN SWITCH BOARD
MCC	MOTOR CONTROL CENTER
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
ATS	AUTOMATIC TRANSFER SWITCH
	ELECTRICAL SYSTEMS PANEL
SACP	SECURITY ALARM CONTROL PANEL
FACP	FIRE ALARM CONTROL PANEL
FA	PUBLIC ADDRESS CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL

ELECTRICAL PANEL BOARD LABELING PLACARD

LINE 1 - PANELBOARD NAME: PP1 [EXAMPLE]
LINE 2 - VOLTAGE AND PHASE:480/277V-3PH-4W [EXAMPLE]
LINE 3 - WHERE PANELBOARD IS FED FROM: FF MSB BREAKER # 14 [EXAMPLE]

GENERAL ELECTRICAL NOTES

- ALL WORK TO BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NFPA 70).
- CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND COORDINATE WITH EXISTING EQUIPMENT PRIOR TO BIDDING.

BUILDING:

- ALL CONDUIT AND WIRING TO BE CONCEALED IN WALLS, FLOOR, OR ABOVE CEILINGS UNLESS OTHERWISE NOTED OR APPROVED BY THE ARCHITECT/ENGINEER. ALL DEVICE OUTLET BOXES SHALL BE RECESSED UNLESS OTHERWISE NOTED OR APPROVED BY THE ARCHITECT/ENGINEER. WHERE APPROVED OR NOTED, SURFACE METAL RACEWAY AND DEVICE BOXES SHALL BE USED IN- LIEU OF CONDUIT AND CONCEALED BOXES AT NO EXTRA COST TO THE OWNER.
- ALL CONDUIT ROUTES SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL FIELD VERIFY FINAL ROUTE.
- CONDUIT RUNS SHOWN ARE SCHEMATICAL AND DO NOT INDICATE THE NECESSARY FITTINGS AND JUNCTION BOXES THAT ARE INCLUDED IN THE SCOPE OF THE WORK.

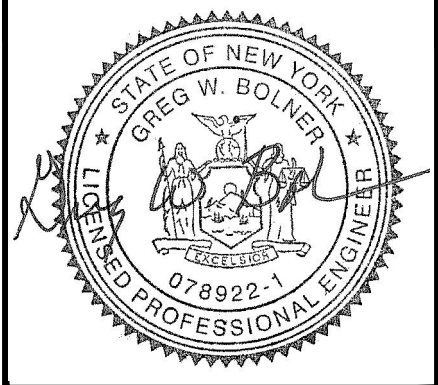
GROUNDING:

- ALL METAL RACEWAYS, INCLUDING CONDUIT, WIRE TROUGHS, WIREMOLD, ETC., SHALL BE GROUNDED. ALL CONNECTIONS IN METAL RACEWAYS SHALL BE COMPLETED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUS PATH TO GROUND THROUGHOUT THE ENTIRE LENGTH OF THE RACEWAY.



Clark Patterson Lee
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			BY	ISSUED FOR BID
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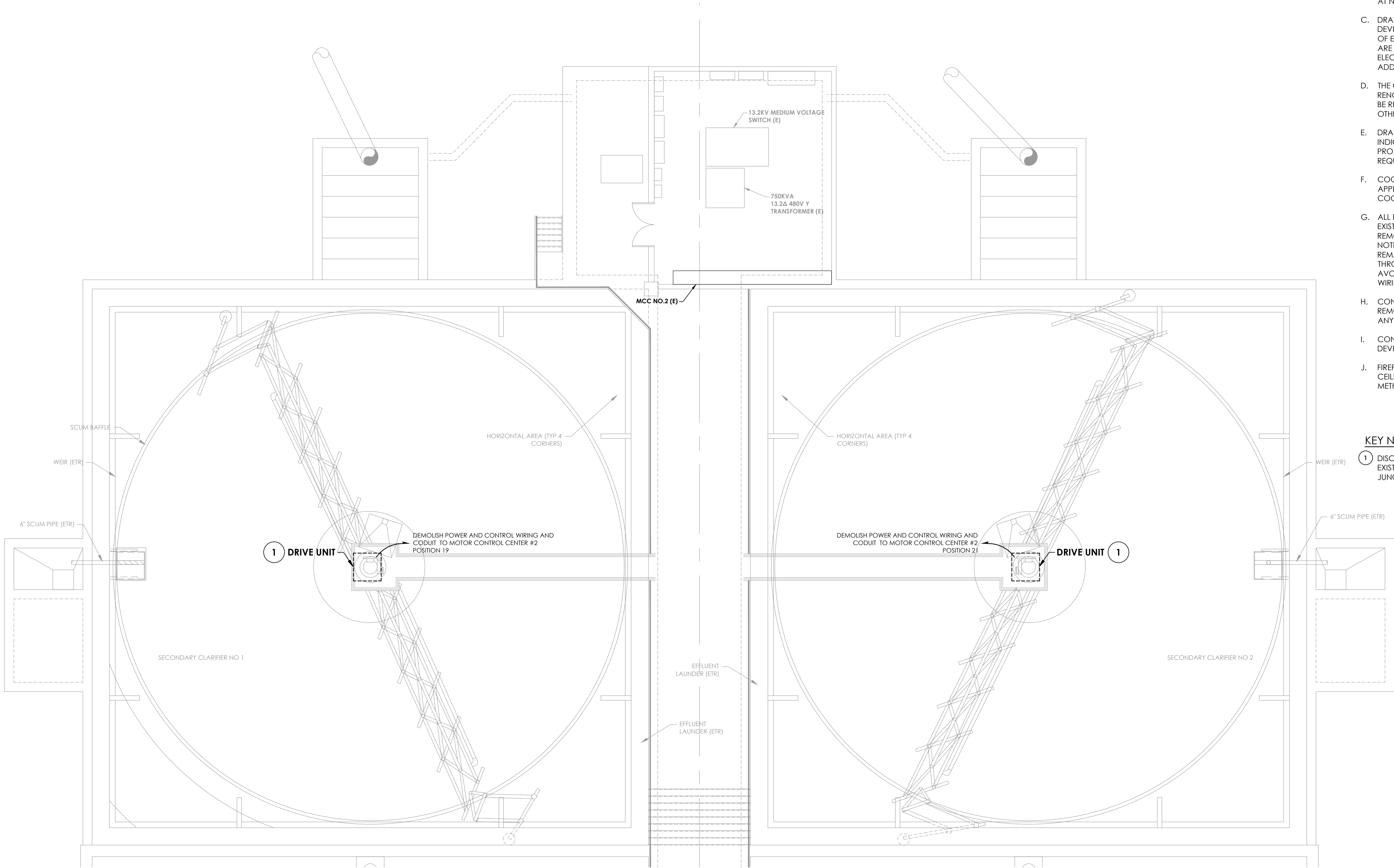


CITY OF Poughkeepsie
ENGINEERING DEPARTMENT
WATER POLLUTION CONTROL PLANT
SECONDARY CLARIFIERS IMPROVEMENTS
CITY OF Poughkeepsie, NEW YORK

DATE	DRAWN	CHECKED
11/1/2020	RT	GB
SCALE AS SHOWN		
SHEET TITLE		
ELECTRICAL LEGEND AND ABBREVIATION SHEET		

PROJECT NUMBER
12422.06
WPCP
E000
DRAWING NUMBER

Drawing Name: S:\Projects\Poughkeepsie_C\ Sewer Reliab\DWG\08 CAD\AutoCAD\Civil\02\Secondary Clarifier separate 201110\E102.dwg
Date last accessed: 11/30/2020 9:06 AM
Date last plotted: 2/9/2021 10:17 AM
Plotted By: Robert Travis



1
E102
SECONDARY CLARIFIER DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- A. ALL ITEMS SHOWN ARE TO BE REMOVED UNLESS LABELED AS (E) EXISTING TO REMAIN. ANY DEVICE, AS WELL AS ITS ASSOCIATED CIRCUITING, AND CONDUIT, LABELED "(E)" SHALL REMAIN, UNLESS OTHERWISE NOTED.
- B. INFORMATION ON DRAWINGS WAS OBTAINED THROUGH FIELD OBSERVATION AND AS-BUILT DOCUMENTATION. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY DEVICES AND CABLING THAT MAY NOT BE SHOWN ON DRAWING AT NO ADDITIONAL COST TO OWNER.
- C. DRAWINGS ARE GRAPHICAL REPRESENTATIONS OF APPROXIMATE EQUIPMENT AND DEVICE LOCATIONS. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXACT EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATION AND EXISTING BUILDING DOCUMENTS. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE CONTRACTOR IS RESPONSIBLE AT NO ADDITIONAL COST.
- D. THE CONTRACTOR SHALL REMOVE THE EXISTING ELECTRIC IN AREAS OF NEW RENOVATIONS TO ACCOMMODATE NEW CONSTRUCTION. REROUTING OF EXISTING MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR INTERFERENCE WITH OTHER NEW WORK AS NOTED IN THE FOLLOWING NOTES.
- E. DRAWINGS INDICATE SPECIFIC ITEMS TO BE REMOVED AND/OR RELOCATED IN ORDER TO INDICATE GENERAL SCOPE. ADDITIONAL ITEMS NOT INDICATED, BUT NECESSARY FOR PROJECT RENOVATIONS, SHALL BE REMOVED, RELOCATED AND/OR REROUTED AS REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.
- F. COORDINATE DEMOLITION OF EQUIPMENT, DEVICES, ETC. WITH OTHER DISCIPLINES AS APPLICABLE. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS AND NOTES FOR COORDINATION.
- G. ALL ITEMS (DEVICES, FIXTURES, ETC.) SHOWN ARE TO BE REMOVED UNLESS LABELED AS EXISTING TO REMAIN - (E). THESE ITEMS AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE CONTROL PANEL/PANELBOARD UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING, TO FEED THROUGH TO THESE REMAINING ITEMS. RELOCATE ANY CIRCUITS THAT REMAIN, TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.
- H. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL ITEMS AND/OR EQUIPMENT BEING REMOVED AS PART OF THE PROJECT. THE OWNER SHALL HAVE THE RIGHT OF RETAINING ANY ITEMS BEING REMOVED.
- I. CONTRACTOR SHALL PROVIDE NEW COVERPLATES ON ALL UNUSED FLUSH MOUNT DEVICE BOXES UPON COMPLETION OF PROJECT.
- J. FIREPROOFING AND/OR FIRE STOP MATERIALS REMOVED FROM FIRE RATED WALLS AND CEILINGS AS A RESULT OF DEMOLITION SHALL BE RE-INSTALLED USING AN APPROVED METHOD AS DESCRIBED IN ASSOCIATED PROJECT SPECIFICATIONS.

KEY NOTES:

- 1 DISCONNECT AND REMOVE EXISTING GEAR MOTOR. DISCONNECT AND REMOVE EXISTING START/STOP BUTTON, POWER AND CONTROL WIRING AND CONDUIT, AND JUNCTION BOX BACK TO MOTOR CONTROL CENTER #2.

Clark Patterson Lee
ARCHITECTURE | ENGINEERING | PLANNING

50 FRONT STREET, SUITE 202
NEWBURGH, NEW YORK 12550
TEL (845) 567-6700
FAX (845) 567-9614
www.clarkpatterson.com

REVISIONS		DESCRIPTION	BY	DATE	ISSUED FOR BID
NO.	1		RT	02/09/2021	

STATE OF NEW YORK
GREG W. BOLNER
78922-1
REGISTERED PROFESSIONAL ENGINEER

**CITY OF Poughkeepsie
ENGINEERING DEPARTMENT**

**WATER POLLUTION CONTROL PLANT
SECONDARY CLARIFIERS IMPROVEMENTS**

CITY OF Poughkeepsie, NEW YORK

DATE	DRAWN	CHECKED
11/1/2020	RT	GB

SCALE: AS SHOWN

SHEET TITLE
**SECONDARY CLARIFIERS
ELECTRICAL DEMOLITION
PLAN**

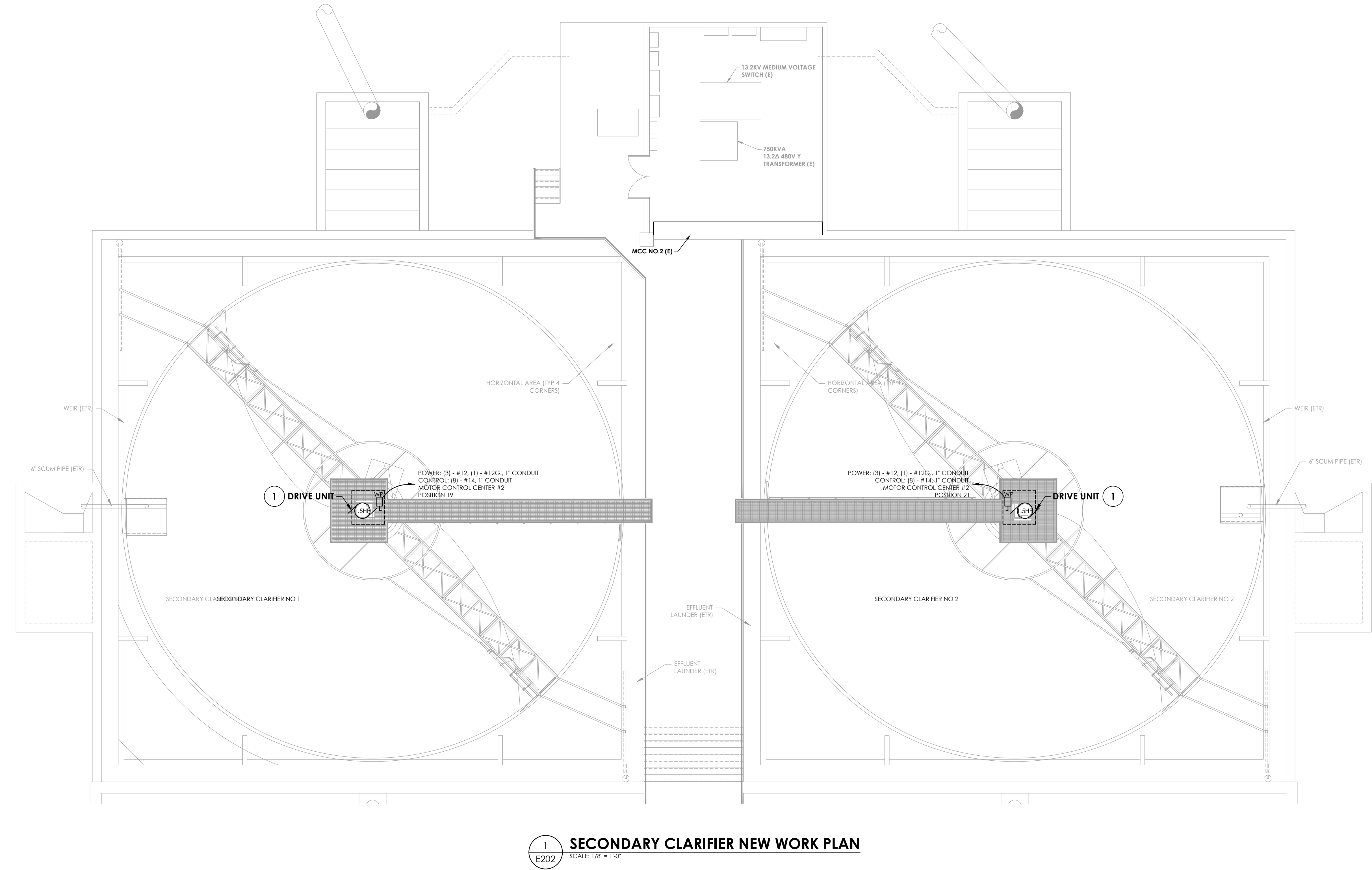
PROJECT NUMBER
12422.06

**WPCP
E102**

DRAWING NUMBER

THIS A VICATION OF THE NEW YORK STATE EDUCATION LAW AND THE COMMISSIONER'S REGULATIONS FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, ENGINEER OR LAND SURVEYOR, TO ALTER ANY ITEM IN ANY WAY, IF ANY ITEM BEARING THE SEAL OF AN ARCHITECT, ENGINEER OR SURVEYOR IS ALTERED. THE ALTERING PARTY SHALL APPEAL TO THE BOARD THEIR SEAL AND THE VIFICATION WILL BE VOID. THE SEAL OF SUCH A PERSON, AND A SPECIFIC DESCRIPTION OF THE ALTERATION

Drawing Name: S:\Projects\Poughkeepsie_C\Sewer ReliabD\Design\08 CAD\AutoCAD\Civil\C2\secondary clarifier separate 201110\E202.dwg Date last accessed: 12/9/2020 4:19 PM Date last plotted: 2/9/2021 10:19 AM Plotted By: Robert Travis

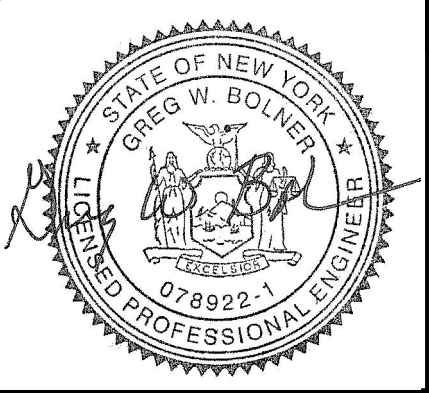


KEY NOTES:
1 NEW GEAR MOTOR, PROVIDED BY OTHERS. PROVIDE NEW CONDUIT, WIRE, JUNCTION BOXES, START/STOP BUTON AND NON-FUSED DISCONNECT AT EACH GEAR MOTOR. ROUTE CONDUIT THROUGH TUNNEL TO MOTOR CONTROL CENTER LOCATION. PATCH ALL WALL PENETRATIONS.

Clark Patterson Lee
ARCHITECTURE | ENGINEERING | PLANNING

50 FRONT STREET, SUITE 202
NEWBURGH, NEW YORK 12550
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www.clarkpatterson.com

REVISIONS NO.	DATE	BY	DESCRIPTION
1	02/09/2021	RT	ISSUED FOR BID



CITY OF PoughKEEPSIE
ENGINEERING DEPARTMENT
WATER POLLUTION CONTROL PLANT
SECONDARY CLARIFIERS IMPROVEMENTS
CITY OF PoughKEEPSIE, NEW YORK

DATE 11/1/2020	DRAWN RT	CHECKED GB
SCALE AS SHOWN		
SHEET TITLE SECONDARY CLARIFIERS ELECTRICAL NEW WORK PLANS		

PROJECT NUMBER
12422.06

WPCP
E202
DRAWING NUMBER

Bid Proposal Sheets

UNIT BID FORM OF PROPOSAL – GENERAL CONSTRUCTION
BASE BID

WATER POLLUTION CONTROL PLANT SECONDARY CLARIFIER IMPROVEMENTS-
RFB-COP-04-21-01

ITEM NO./DESCRIPTION	EST. QTY.	PAYMENT UNIT	WRITTEN AMOUNT	IN FIGURES	TOTAL PRICE BID
1. Provide all materials, supplies, equipment, and other facilities as required for construction of City of Poughkeepsie WPCP Secondary Clarifier Improvements – General Construction and Electrical Construction, including all incidentals, as indicated in the Contract Specifications and in the Contract Drawings. Excluding Unit Price and Allowance Items.	1	L.S.			
2. Unit Price G1 – Epoxy Crack Injection	100	L.F.			
3. Unit Price G2 – Concrete Repair	50	C.F.			
4. Unit Price G3 – Concrete Expansion Joint Repair	200	L.F.			

Base Bid Grand Total: _____

Company Name:	
Contact Person:	Title:
Company Address:	
Phone Number:	Cell Number:
Email Address:	
DUNS Number:	

END OF SECTION 039300

REFERENCES (PLEASE FILL OUT)

RFB-COP-04-21-01

WPCP Secondary Clarifier Improvements

Project: _____

Type of Work: _____

Location: _____

Project Value: _____

Contact Person: _____

Phone Number: _____

Project: _____

Type of Work: _____

Location: _____

Project Value: _____

Contact Person: _____

Phone Number: _____

Project: _____

Type of Work: _____

Location: _____

Project Value: _____

Contact Person: _____

Phone Number: _____

City of Poughkeepsie
RFB-COP-04-21-01

WPCP Secondary Clarifier Improvements
Bid Addendum Acknowledgement Sheet

All addenda, the receipts of which are hereby acknowledged by inserting the dates of each addendum next to the appropriate numbers, have been included in this Bid and are listed below. Failure to properly acknowledge the addenda as set forth below may result in rejection of the bid.

Addendum Number	Addendum Date
Addendum No. 1	
Addendum No. 2	
Addendum No. 3	
Addendum No. 4	
Addendum No. 5	
Addendum No. 6	
Addendum No. 7	

Vendor Name: _____

CITY OF POUGHKEEPSIE

Purchasing Department

BID PROPOSAL FORM

Bid submitted by: _____

The undersigned hereby designates as his office to which such notice of acceptance may be mailed, telegraphed, or delivered:

The vendor hereby agrees to the provisions of Section 103-a of the General Municipal Law which requires that upon the refusal of a person, when called before a Grand Jury to testify concerning any transaction, or contract had with the State, any political subdivision thereof, a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract,

(a) "such person, and any firm partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or any public department, agency or official thereof, for goods, work or services, for a period of five years after such refusal, and

(b) any and all contracts made with any municipal corporation or any public department, agency or official thereof, since the effective date of this law, by such person, and by any firm, partnership or corporation of which he is a member, partner, director or officer may be cancelled or terminated by the municipal corporation without incurring any penalty or damages on account of such cancellation or termination, but any moneys owing by the municipal corporation for goods delivered or work done prior to the cancellation or termination shall be paid."

The vendor does hereby certify that he or it is under no such impediment or disqualification from bidding created under Section 103-b of the General Municipal Law of the State of New York.

As required by Section 139-d of the New York State Finance Law, the bidder certifies that:

- (a) the bid has been arrived at by the bidder independently and has been submitted without collusion with any other vendor of materials, supplies, or equipment of the type described in the invitation for bids, and
- (b) the contents of the bid have not been communicated by the bidder, nor, to its best knowledge and belief, by any of its employees or agents, to any person not an employee or agent of the bidder or its surety on any bond furnished herewith prior to the official opening of the bid. The signature of the Contractor to this contract shall be deemed a specific subscription to the certificate required pursuant to Section 139-d of the State Finance Law and the Contractor affirms that the statements therein contained are true under the penalties of perjury."
- (c) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

Signed _____

By _____
(President)

Dated _____

If a corporation, give the State of Incorporation, using the phrase "corporation organized under the laws of _____."

If a partnership, give names of partners, using also the phrase "co-partners trading and doing business under the firm name and style of _____."

If an individual using a trade name, give individual name, using also the phrase "an individual doing business under the firm name and style of _____."

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the City receive information that a Bidder/Contractor is in violation of the above- referenced certification, the County will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the County shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

The County reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she is the _____ of the _____ Corporation and that neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

SIGNED

SWORN to before me this

_____ day of _____, 2021

Notary Public: _____

City of Poughkeepsie
Apprenticeship Program Requirement

"The City of Poughkeepsie requires that any contractor or subcontractor have, prior to entering into a construction contract with the City of Poughkeepsie with a value in excess of \$100,000.00, apprenticeship agreements appropriate for the type and scope of work to be performed, which have been registered with the NYS Commissioner of Labor in accordance with Article 23 of the Labor Law and shall provide the City of Poughkeepsie with satisfactory evidence of registration with the New York State Commissioner of Labor by the deadline to submit its bid package for the construction contract on which it is bidding;"

Attached is evidence of an approved apprenticeship program registered by the NYS Department of Labor

Check One: _____ Yes _____ NO

SIGNATURE

DATE

COMPANY NAME

TELEPHONE

EMAIL ADDRESS

EXHIBIT B



POUGHKEEPSIE, NY

Technical Memorandum

APR 2024

City of Poughkeepsie WWTP Secondary Clarifier Evaluation



City of Poughkeepsie WWTP Secondary Clarifier Evaluation

Poughkeepsie, NY

Prepared for Veolia Water North America Operating Services, LLC

April 2024

Christopher N. Pierce, PE
New York Engineering License # 070556
Date: April 1, 2024

Prepared By:

Wright-Pierce Engineering Consultants,
P.C.

6 Executive Park Drive, Suite B
Clifton Park, NY 12065
888.621.8156 | wright-pierce.com

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Appendix A OVIVO Proposal

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Section 1 Introduction

The City of Poughkeepsie Water Pollution Control Plant (WPCP) is operated by Veolia Water North America Operating Services, LLC (Veolia). The WPCP was constructed in 1972 and generally consists of preliminary screening and grit removal, primary settling, aeration, secondary settling, and chlorine disinfection. The facility has undergone various improvement projects including an aeration tank and chlorine system modification in 2004, a secondary clarifier weir modification in 2008, and in 2020 a secondary clarifier upgrade was started.

1.1 Background

The secondary clarifier project's goal is to replace the mechanisms in the two secondary clarifiers at the WPCP. The existing draft tube sludge collection mechanisms are original from the 1972 upgrade and are being replaced with new spiral blade mechanisms provided by Ovivo. One secondary clarifier was upgraded in November of 2022 and the second secondary clarifier is still utilizing the original draft tube mechanism. Veolia has reported significant differences in the operation of the two final clarifiers since the new spiral blade mechanism was placed in service. These differences between the operation of the two clarifiers include:

- The spiral blade clarifier mechanism introduces additional head loss causing more flow to be directed to the original draft tube clarifier.
- The performance of the spiral blade mechanism deteriorates at flow greater than ± 5 mgd.
- The WPCP has historically achieved a return activated sludge (RAS) concentration of approximately 1% on average. This RAS concentration is still achieved in the original draft tube clarifier, however, the RAS concentration in the new spiral blade clarifier typically achieves approximately 0.7% solids concentration.
- The truss arms on the new clarifier interfered with the density current baffles that were installed in the secondary clarifiers as part of the 2008 weir modification project. Because of this, the existing density current baffles had to be raised higher on the clarifier effluent launder walls.
- The rotational speed of the new clarifier mechanism is faster than in the old clarifier. The old mechanism rotates once every 28 minutes. When the new clarifier was brought online, it rotated once every 16 minutes. The drive unit was replaced, and the speed has been decreased to rotate once every 20 minutes.
- Plant staff have questioned whether the design flow rates provided in the specifications for the new spiral blade mechanisms are sufficient based on current plant flows.

1.2 Objectives

Because of these issues, the second spiral blade mechanism has not been installed. Currently the Poughkeepsie WPCP is operating with one spiral blade mechanism and one draft tube mechanism. Prior to installing the second spiral blade mechanism, the City and Veolia would like to evaluate the potential causes of the issues identified above and determine whether:

- They can proceed with the installation of the second spiral blade mechanism without impacting operations or permit compliance.
- They can modify the spiral blade mechanisms to address the causes of these issues.
- They should replace the spiral blade mechanisms with new secondary clarifier mechanisms.

Veolia retained Wright-Pierce Engineering Consultants, P.C. (WPEC) to review the design criteria and shop drawing submittals for the new spiral blade mechanisms and evaluate causes and potential solutions.

1.3 Approach

To evaluate the issues identified with the new spiral blade clarifiers mechanism, WPEC utilized the following approach:

1. The design criteria provided to the manufacturer for the spiral blade clarifier was compared with existing flow data at the Poughkeepsie WPCP provided by Veolia. These criteria were also compared with the original WPCP design flow criteria indicated on the 1972 Record Drawings.
2. The sizing of the existing 80-foot square clarifier tanks were compared with typical design criteria to determine if the tanks were overloaded.
3. Hydraulic calculations from the secondary clarifier effluent weirs upstream to the discharge of the low lift pumps were developed to evaluate headloss differences between the new spiral blade mechanism and the original draft tube clarifier mechanism. These calculations were also used to assess velocities within specific components of the spiral blade mechanism.
4. Dispersed and flocculated suspended solids testing was conducted on each secondary clarifier to determine if there were differences in the flocculation and settling of the mixed liquor that may be attributable to the mechanisms.
5. Based on the issues identified with the new spiral blade clarifier mechanism, contact the manufacturer to discuss the ability to modify the mechanism to alleviate these issues.

The results of these evaluations as well as our recommendations for next steps are presented in the following sections of this report.

Section 2 Design Criteria Evaluation

2.1 Design Flows

Veolia staff have reported that the new spiral blade clarifier mechanism appeared to perform well at flows up to approximately 5 mgd but that as flows increased, they noticed a decrease in performance of the new spiral blade clarifier mechanism. Based on this, Wright-Pierce compared the design flow data provided to the spiral blade clarifier manufacturer with the current and design flow data at the Poughkeepsie WWTP.

Veolia provided WPEC with nearly three years of plant operating data. These data included individual daily values for influent total daily flow and maximum instantaneous flow. In addition, nearly three years of monthly average data were provided for influent and RAS flows, mixed liquor suspended solids (MLSS) concentrations, RAS concentration and sludge volume index (SVI). Approximately 2 years of the data is from prior to the installation of the new spiral blade mechanism and one year after the new spiral blade mechanism was installed. Table 2-1 shows the individual total daily flow rates both before and after the installation of the clarifier. The average daily flows are higher after the clarifier upgrade, but the maximum day is similar. The maximum day flows are limited by the capacity of the low-lift pump station which is approximately 18 mgd.

Table 2-1 Total Daily Flow Data Pre and Post Clarifier Upgrade

Flow Condition	Minimum Day, mgd	Annual Average, mgd	Peak Day, mgd
Original 1972 Design Criteria	--	8	18
Actual WPCP Flows Prior to Upgrade ¹	2.2	7.3	18.2
Actual WPCP Flows Following Upgrade ²	4.3	8.4	18.1
Design Criteria Provided to Clarifier Manufacturer ³	--	6.4	8.4

1. Pre-Clarifier Upgrade data was calculated from Jan 2021 through October 2022.
2. Post Clarifier Update data was calculated from November 2022 through November 2023.
3. From RFB # COP-04-21-01 WPCP Secondary Clarifiers Addendum No. 2 dated May 18, 2021

WPEC also plotted the actual total daily flows and peak flows over this three-year period and compared these flows with the design annual average and design peak flows with two clarifiers online provided to the spiral blade mechanism manufacturer. These data are presented in Figures 2-1 and 2-2, respectively.

Figure 2-1 Total Daily Flow and Clarifier Mechanism Design Average Flow

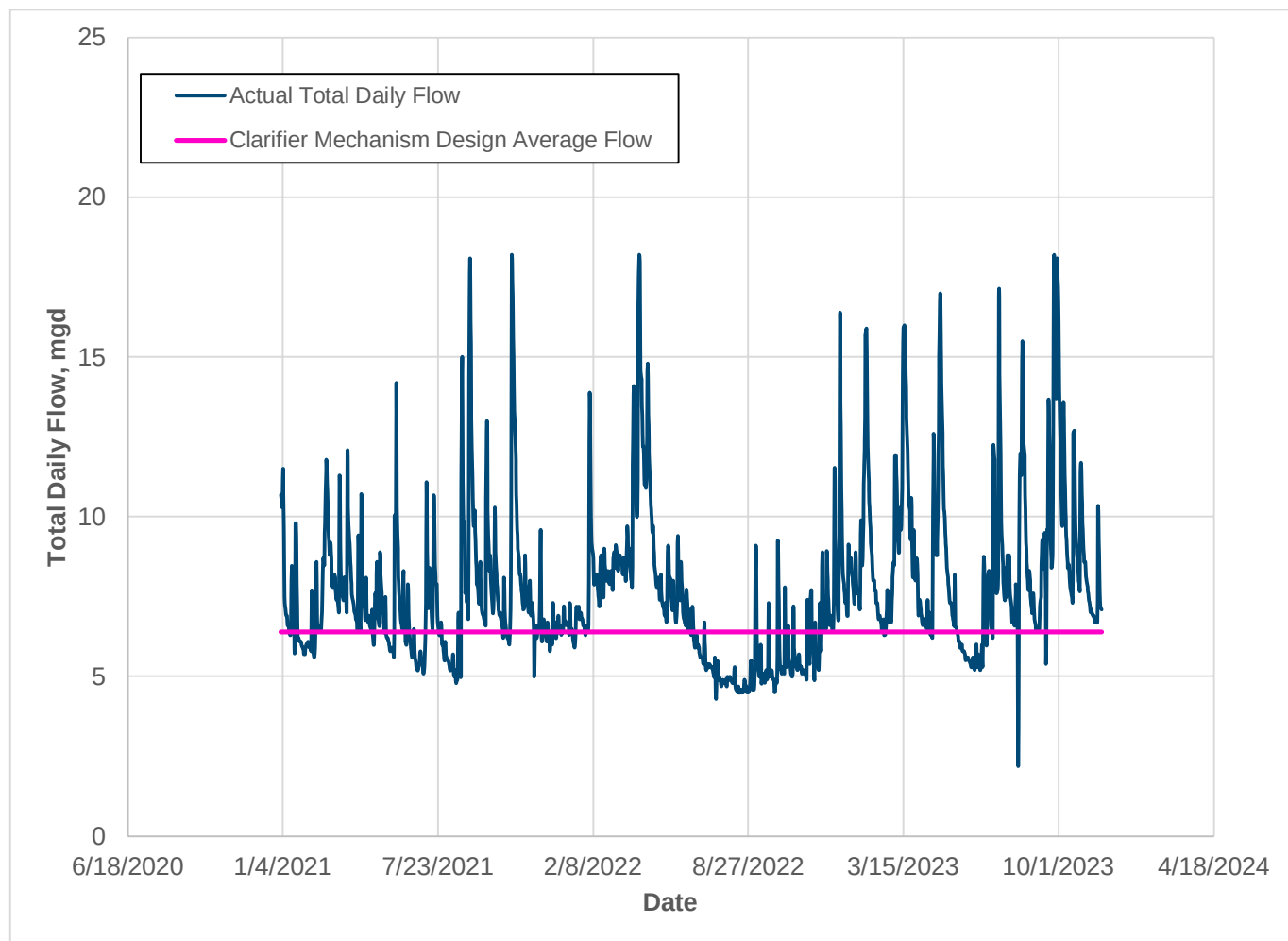
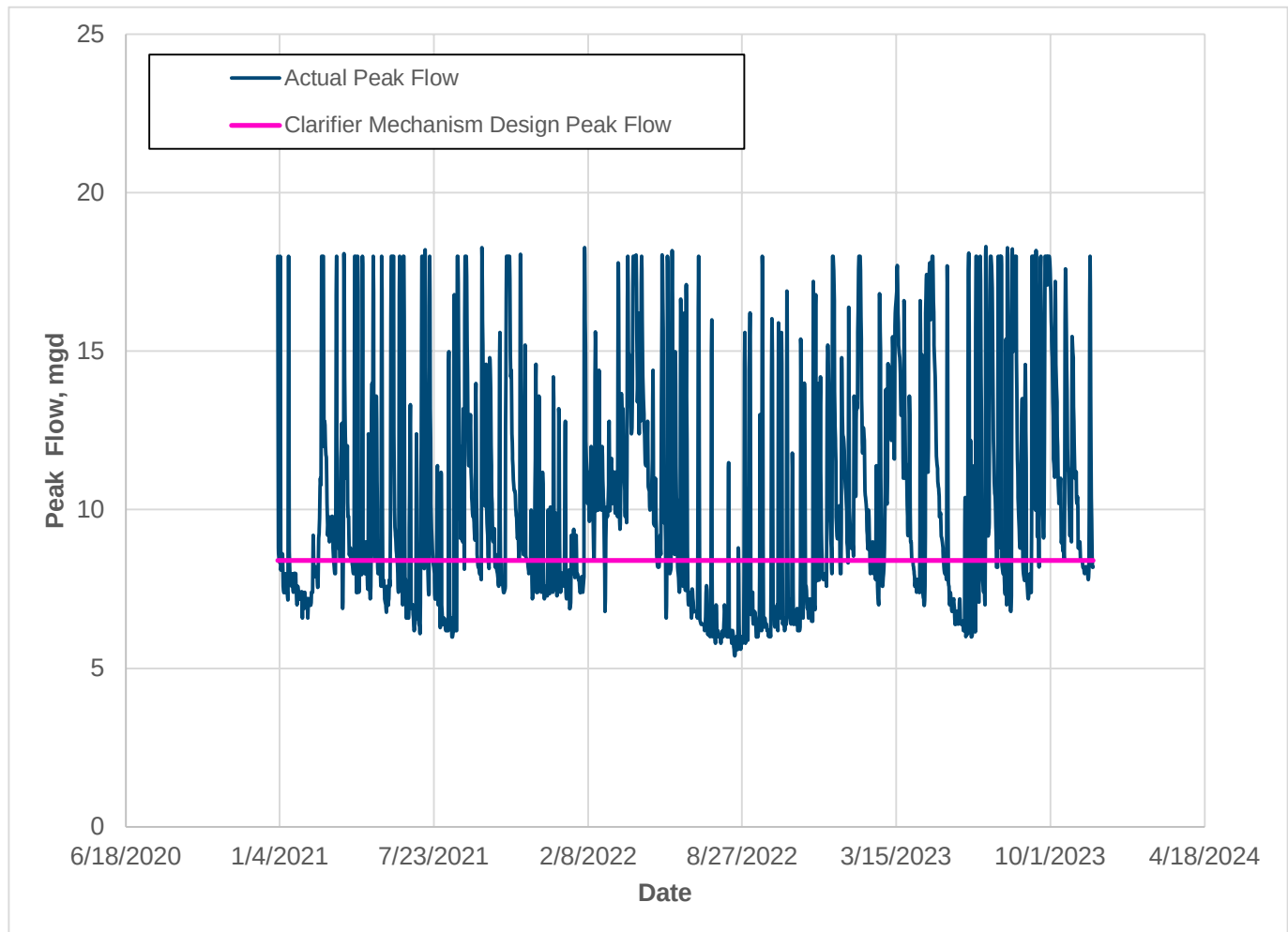


Figure 2-2 Peak Flow and Clarifier Mechanism Design Peak Flow



As can be seen in Figures 2-1 and 2-2, the average and peak flow design criteria provided to the spiral blade clarifier manufacturer is typically below the actual daily flow and actual peak flows experienced at the Poughkeepsie WPCP. Based on this, various components of the spiral blade clarifier mechanism are likely undersized for actual flows. Higher velocities through these various components may be contributing to reduced performance of the spiral blade clarifier at higher flow rates. These issues are discussed in more detail as part of the hydraulic evaluation presented below.

2.2 Existing Clarifier Sizing

In addition to evaluating the design criteria utilized for the design of the spiral blade mechanisms, WPEC also conducted an evaluation of the existing secondary clarifier tanks. Current design criteria presented in various guidance documents including Ten States Standards, the New England Interstate Water Pollution Control Commission (NEIWPCC) TR-16 Guides for the Design of Wastewater Treatment Works (TR-16), and the Water Environment Federation (WEF) Manual of Practice No. FD-8, Clarifier Design (MOP FD-8) have been updated since the Poughkeepsie WPCP was first constructed in the early 1970s. We compared the size of the current 80-foot square secondary clarifiers with current design standards.

To evaluate these design criteria, WPEC reviewed monthly plant operating data for the period January 2021 through November 2023. A summary of these data are presented in Table 2-2 and were used in comparing the sizing of the existing secondary clarifiers with current design standards.

Table 2-2 Clarifier RAS, MLSS, and SVI Data

	Monthly Average		Minimum Month	Maximum Month
Plant Flow, mgd	7.71		4.73	11.95
RAS, mgd	2.3		1.6	3.2
MLSS, mg/L	2,173		1,224	2,644
SVI, mL/g	142		67	302
RAS Conc., mg/L	8,781		6,781	11,598

2.2.1 Typical Design Standards

The current secondary clarifier operating conditions are presented in Table 2-3 along with current design standards from Ten States Standards, TR-16, and MOP FD-8.

Table 2-3 Comparison with Typical Design Standards

	Current Value	Ten State Standards	TR-16	MOP FD-8
Total Surface Area, ft ²	12,800	--	--	--
Side Water Depth, ft	10	>12	16	16
Surface Overflow Rates, gpd/ft ²				
• Avg. Daily Flow (8 mgd)	625	--	--	400 to 700
• Max. Month (12 mgd)	940	--	--	--
• Peak Hour Flow (18 mgd)	1,400	1,200	1,100-1,400	1,000-1,200
Solids Loading Rates, lb/d/ft ²				
• Avg. Daily Flow (8 mgd)	15	--		20 to 30
• Max. Month (12 mgd)	21	--		--
• Peak Hour Flow (18 mgd)	30	40	Varies	--

1. Surface Overflow Rates based on both clarifiers in service. TR-16 values are for MLSS = 2,500 mg/L with SVIs between 200 and 150
2. Solids Loading Rates for MLSS = @2,200 mg/L, RAS = 2.5 mgd

Based on the information presented in Table 2-3, it appears that the existing secondary clarifiers are generally within current design criteria with the following exceptions:

- The side water depth of the existing clarifiers is only 10 feet. This was common at the time the original WPCP was designed but is very shallow by current design standards.
- The surface overflow rate at peak hour flows is at the upper end or slightly beyond typical design parameters. These parameters are based on several assumptions about how well the sludge settles. As has been demonstrated at the Poughkeepsie WPCP, the original secondary clarifiers have been able to maintain effluent permit compliance at these higher surface overflow rates.

2.2.2 State Point Analysis

Another method to evaluate the capacity of a secondary clarifier is called the State Point Analysis. This method utilizes both the overflow rate as well as the underflow rate of the clarifier and considers the mixed liquor settleability as measured by the Sludge Volume Index (SVI) to determine the settling flux curve. The intersection of the overflow rate and underflow rate lines is called the State Point for that particular clarifier for specific operating conditions. If the state point is below the settling flux curve, the operation of the clarifier is considered normal, or underloaded. If the state point is above the settling flux curve, the clarifier may be overloaded and fail through loss of solids over the effluent weir.

To determine if the Poughkeepsie secondary clarifier surface area is adequate for the current flows and mixed liquors, a State Point analysis was conducted using the data from Table 2-2. Two analyses were conducted, one at average daily flow conditions and the other at peak hour flow conditions. The results of these two analyses are presented in Figures 2-3 and 2-4, respectively.

The state point analysis presented in Figure 2-3 is based on the following operating conditions:

- Average Daily Flow 8 mgd
- MLSS Concentration 2,200 mg/L
- RAS Flow Rate 2.5 mgd
- Sludge Volume Index 150 mL/g

The state point analysis presented in Figure 2-4 is based on the following operating conditions:

- Average Daily Flow 18 mgd
- MLSS Concentration 2,500 mg/L
- RAS Flow Rate 3.2 mgd
- Sludge Volume Index 150 mL/g

Figure 2-3 State Point Analysis- Average Daily Flow

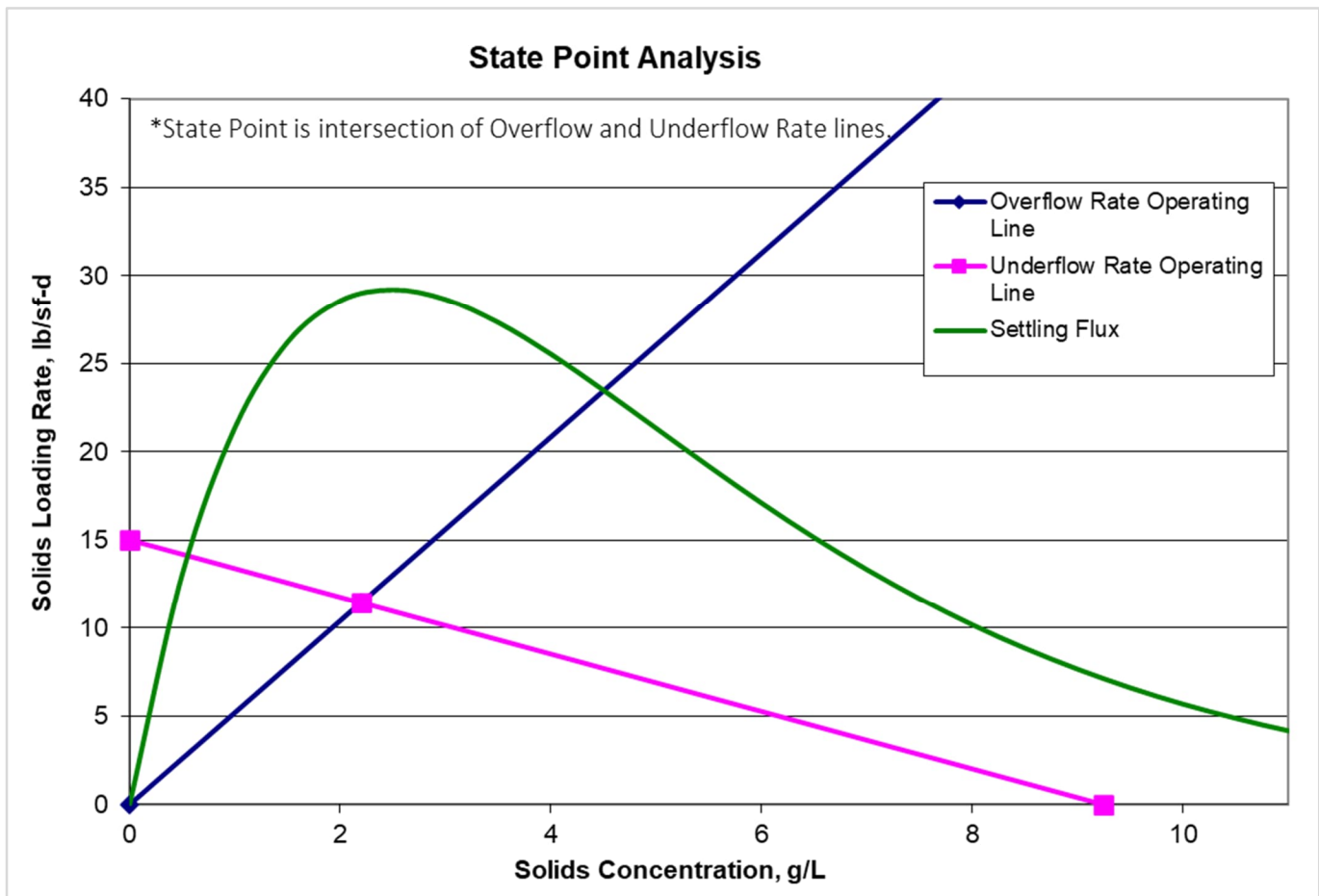
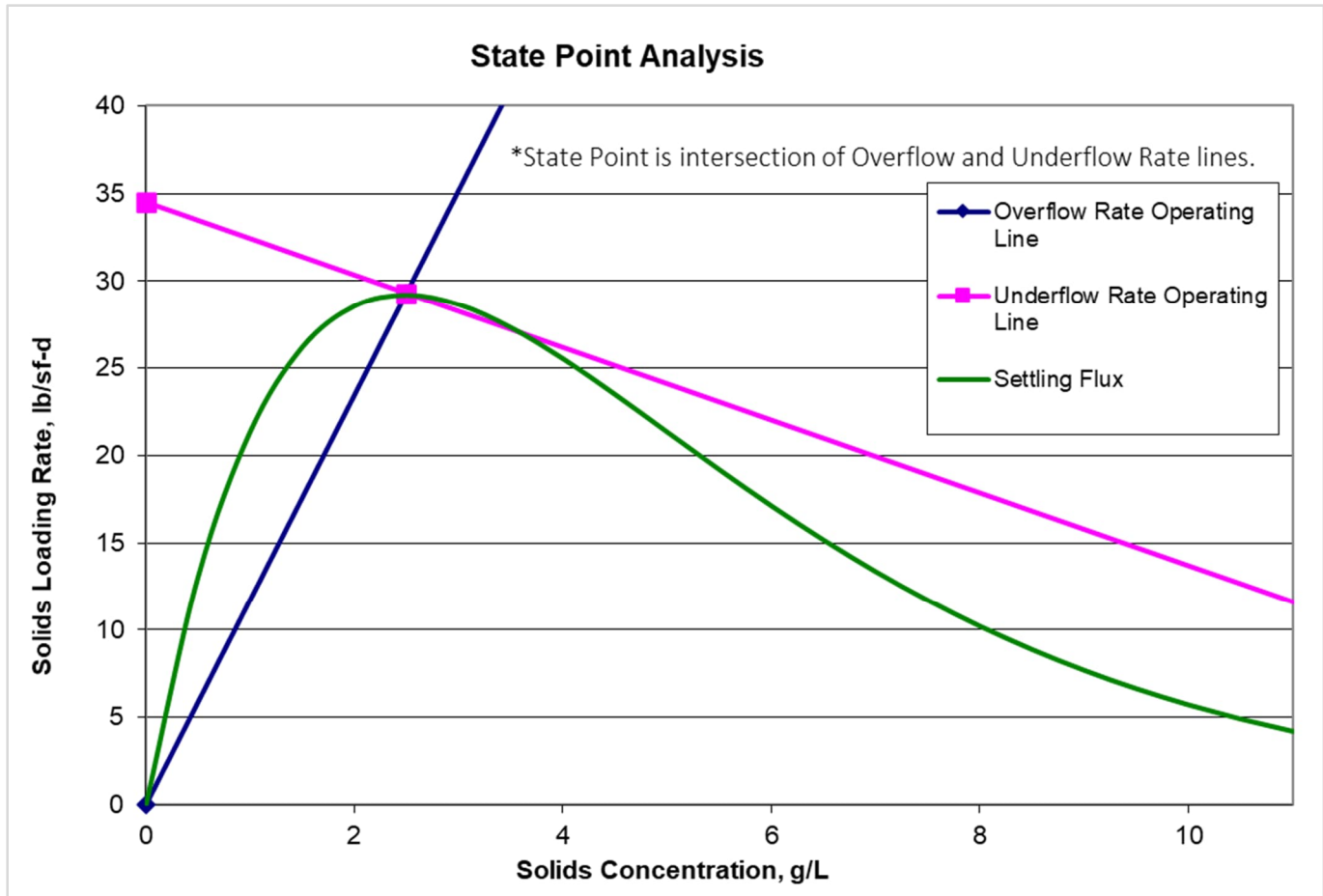


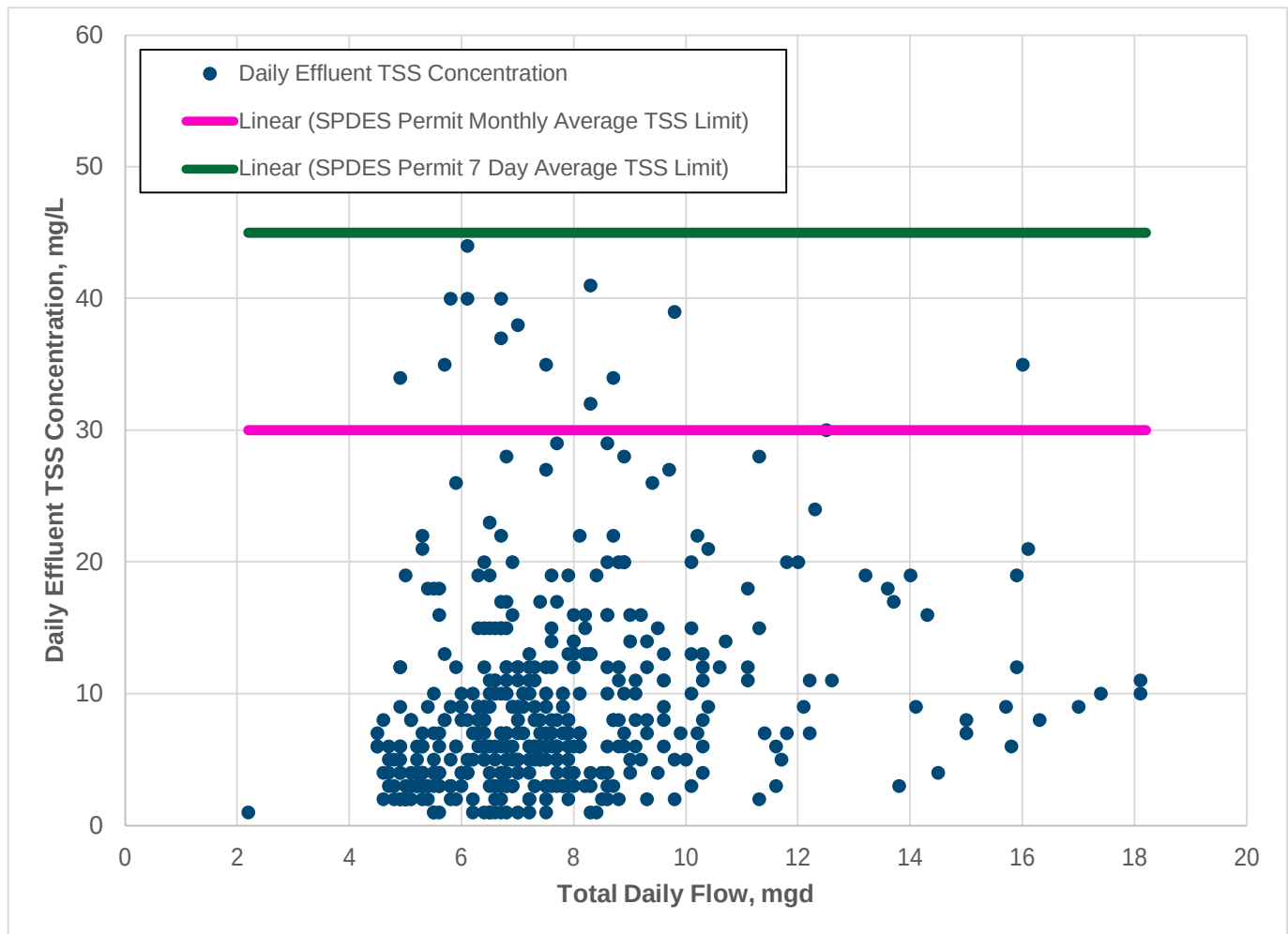
Figure 2-4 State Point Analysis- Peak Hour Flow



At the average month, the calculated state point is well below the settling flux curve indicating that the clarifiers are considered normal or “underloaded.” However, at peak flow, the state point is slightly above the settling flux curve indicating that under these operating conditions, the clarifiers are overloaded or in failure. In addition, the underflow rate operating line is above the settling flux curve indicating potential thickening failure in the clarifier. The operating conditions assumed to develop this state point analysis may not be accurate. Reducing the MLSS concentration and increasing the RAS flow rate under peak flow conditions would lower the state point and underflow rate operating line to fall below the settling flux curve.

A review of the effluent TSS data over the three year data review period was also conducted to determine if the existing clarifiers can achieve the permit TSS limits under all flow conditions. The effluent TSS concentration was plotted against the total daily flows in is presented in Figure 2-5. The monthly average and weekly average effluent TSS concentration permit limits of 30 mg/L and 45 mg/L, respectively are also shown in Figure 2-5.

Figure 2-5 Effluent TSS Concentration versus Total Daily Flow



While there were several days where the individual daily TSS concentration exceeded 30 mg/L, these instances occurred when total daily flows were below 10 mgd, with a single exception. In addition, the WPCP did not violate the monthly average or maximum week effluent TSS permit limits during the period when these data were evaluated. Based on the actual clarifier performance plotted in Figure 2-5 and the results of the state point analysis is consistent with the comparison with typical design criteria. Based on these evaluations, the existing clarifiers, while shallow by current standards, appear to be adequately sized for existing conditions. As noted, at peak hour flows, the state point analysis indicates that the clarifier is overloaded, however, the existing clarifiers have performed well for many years with these operating conditions and there does not appear to be any significant benefit to trying to construct additional secondary clarifiers or replacing the existing clarifiers with larger, deeper units due to difficult site constraints and costs.

2.3 Design Criteria Summary

As is typical of WPCPs constructed in the early 1970s, the secondary clarifiers at the Poughkeepsie WPCP are shallow than current design standards and may become slightly overloaded at peak hour flows. However, the WPCP has experienced these peak hour flows continuously for many days in a row over the last several years without significant permit compliance issues. Therefore, the secondary clarifiers appear to be adequately sized for current conditions. However, the design criteria provided to the spiral blade mechanism manufacturer, presented in Table 2-1 and shown in Figures 2-1 and 2-2, is significantly lower than the actual average and peak flows experienced at the WPCP.

Section 3 Clarifier Mechanism Evaluation

As noted in Table 2-1, the design flow criteria provided to the spiral blade clarifier mechanism manufacturer are lower than both the current flows experienced at the WPCP and the original 1972 design criteria that was used to size the old draft tube clarifier mechanism. Wright-Pierce reviewed the equipment shop drawing submittal for the spiral blade clarifier mechanism to evaluate what impacts higher flows would have on the performance of the secondary clarifiers. The evaluation was conducted based on the original design flow rates of 8 mgd annual average and 18 mgd peak flow with both clarifiers in operation. An evaluation was also done to determine the hydraulic capacity of one clarifier at the peak flow of 18 mgd.

The following items associated with the new spiral blade clarifier mechanism were identified for further evaluation:

- Truss arm sizing resulting in relocation of density current baffle.
- Sizing of the energy dissipating inlet ports.
- Sizing of the influent column.

In addition, the impact of these differences on the WPCP hydraulic profile and on sludge settling characteristics was also evaluated. The results of these evaluations are presented below.

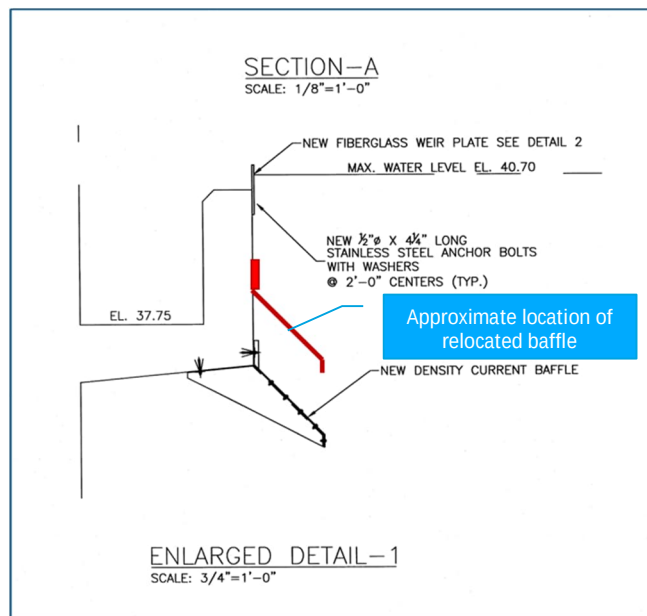
3.1 Spiral Blade Clarifier Design

3.1.1 Clarifier Truss Arm

As noted in Section 2, the clarifier tanks are shallow by current design standards with a side water depth of 10 feet. The clarifiers also have an inboard effluent launder. As part of an upgrade completed in 2008, density current baffles were added at the bottom of the inboard launder. We understand that when these baffles were added, the original draft tube clarifier truss arms had to be modified to fit below the density current baffles.

When the new spiral blade clarifier mechanism was installed, the size of the truss support arms was such that they did not fit beneath the density current baffles. Because of this, the density current baffles were relocated from the bottom of the launder to the side of the launder wall. This is depicted in Figure 3-1. The red baffle is an estimated location of where the design baffle was relocated when the new clarifier was installed. The new location of the density current baffles is likely much less effective than the original location in terms of effluent solids loss. This change is likely contributing to reduced clarifier performance.

Figure 3-1 Density Current Baffles



3.1.2 Energy Dispersion Well

The spiral blade clarifier design utilizes an energy dispersion inlet well. The manufacturer indicated that the size of this well is typically designed to have a ten second residence time. In addition, the inlet ports in the center column and the deflection baffles around the top of the energy dispersion well are designed to reduce the velocity (energy) of the mixed liquor entering the clarifier. The design criteria provided to the manufacturer was an average flow of 3.2 mgd and a peak flow of 4.2 mgd per clarifier. Based on discussions with Ovivo, if the clarifier is to receive an average flow of 4 mgd and a peak flow of 9 mgd per clarifier, the energy dispersion well would likely need to be larger with additional ports to provide the proper energy dissipation. The increase in velocity entering the clarifier may result in shearing of the floc particles and disturbance of the sludge blanket at higher flows.

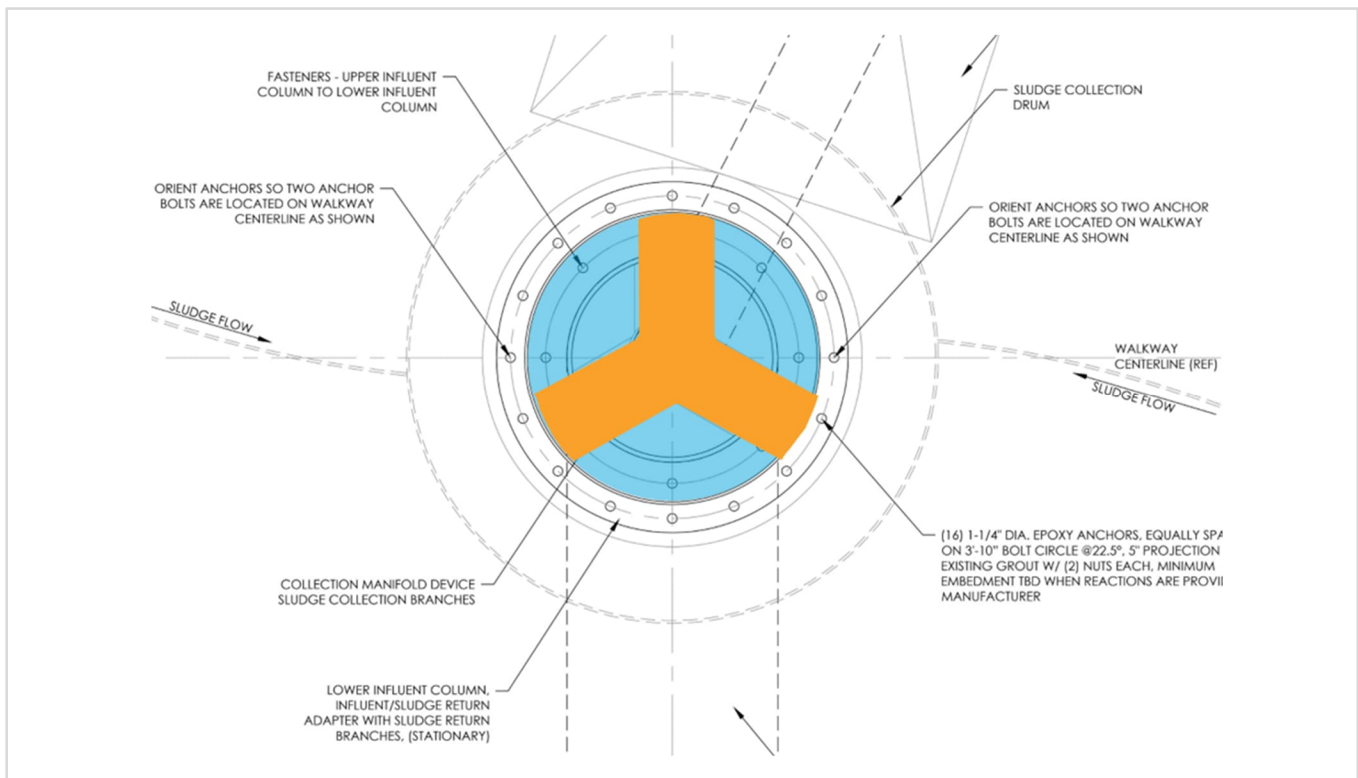
Figure 3-2 Energy Dispersion Well and Feedwell



3.1.3 Influent/Sludge Adaptor Ring

The original draft tube clarifier is equipped with a 36-inch diameter center column riser pipe with a 12-inch RAS pipe within the center column. The spiral blade mechanism was designed with a smaller 30-inch riser pipe. Although the spiral blade mechanism eliminates the need for the 12-inch RAS pipe inside the center column, the annual space available in the spiral blade center column is only about 82% of the available annular space of the draft tube mechanism. In addition, the spiral blade mechanism includes a sludge adaptor ring at the bottom of the center column. The configuration of this sludge adaptor ring blocks off part of the riser pipe and introduces additional head loss compared with the draft tube mechanism. Figure 3-3 depicts the influent sludge adaptor ring. The sections shaded orange are the sludge adaptor pipe branches and the area in blue shows where the influent is restricted to. The smaller piper rise diameter and sludge adaptor ring contribute to the additional headloss through the spiral blade mechanism. This is resulting in more flow currently going to the old clarifier.

Figure 3-3 Depiction of Influent/Sludge Adaptor Ring



3.2 Hydraulic Evaluation

Due to the differences between the spiral blade mechanism and draft tube mechanism designs, particularly the sludge adaptor ring and the riser pipes, a hydraulic profile was developed from the secondary clarifier effluent weirs upstream to the discharge of the low lift pumps. The hydraulic profile was calculated based on an average daily flow of 8 mgd and a peak hour flow of 18 mgd, based on the 1972 design drawings. It was assumed that all pipes were clean. The hydraulic calculations were done under two different scenarios. The first is based on the original draft tube mechanisms being installed with both clarifiers, the “old design”. The second scenario is based on the new spiral blade mechanisms being installed in both clarifiers, the “new design”. The difference in the hydraulic grade lines between these two scenarios was determined to evaluate the impact the new spiral blade clarifiers would have on the flow through the WPCP.

With both trains online there is a slight increase in the hydraulic grade line elevations at both the average and peak flow in the aeration tank effluent channel, 0.11’ and 0.45’ respectively (Table 3-1). Based on this, the differences in the center column riser pipe diameter and the sludge adaptor ring result in additional headloss but likely don’t impact the hydraulic grade line in upstream unit processes with both trains on line. The hydraulic analysis also indicated that the sludge adaptor ring is the primary cause of the additional headloss.

Table 3-1 Hydraulic Grade Line with all Trains in Service

Location	Hydraulic Grade Line Elevations, ft.					
	Old Design		New Design		Difference	
	Avg.	Peak	Avg.	Peak	Avg.	Peak
Secondary Clarifier	40.81	40.85	40.81	40.85	0	0
Aeration Tank Effluent Channel	41.01	41.54	41.12	41.99	0.11	0.45
Aeration Tank	43.95	44.00	43.95	44.00	0	0
Primary Clarifier Effluent Launder	45.45	46.13	45.45	46.13	0	0
Primary Clarifier	47.11	47.15	47.11	47.15	0	0
Downstream of Low Lift Pumps	41.20	47.5	47.20	47.50	0	0

The original 1972 design drawings also indicate that the WPCP was designed to hydraulically pass 18 mgd through one train when the other train is offline for maintenance. While the WPCP would likely not meet effluent permit requirements under this extreme condition, it should be able to pass the flow without overtopping any tanks. Therefore, a second round of hydraulic calculations was done assuming only one train is in service at a peak flow of 18 mgd. As show in Table 3-2, when only one train is online at peak flow the increase in the hydraulic grade line elevations with the spiral blade mechanisms is 1.84’ at the aeration tank effluent channel. This results in the

aeration tank effluent weir being surcharged and the water surface elevation in the aeration tanks increasing by approximately and 1.33'. Under this condition, the primary clarifier effluent weirs are also submerged.

Table 3-2 Hydraulic Grade Line with One Train in Service

Location	Hydraulic Grade Line Elevations, ft.					
	Old Design		New Design		Difference	
	Avg.	Peak	Avg.	Peak	Avg.	Peak
Secondary Clarifier	40.84	40.90	40.81	40.90	0	0
Aeration Tank Effluent Channel	41.53	43.49	41.12	45.33	0.11	1.84
Aeration Tank	43.95	44.10	43.95	45.43	0	1.33
Primary Clarifier Effluent Launder	45.45	46.64	45.45	46.64	0	0
Primary Clarifier	47.14	47.20	47.11	47.20	0	0
Downstream of Low Lift Pumps	47.49	49.66	47.20	49.68	0	0

3.3 Flocculation Evaluation

As noted above, it is suspected that the spiral blade mechanism design results in higher than anticipated velocities entering the clarifier center well which may impact performance. To assess the impact of these increased velocities, dispersed suspended solids (DSS) and flocculated suspended solids (FSS) testing was conducted on each clarifier. Dispersed suspended solids is measured by collecting the flow entering the center well of the clarifier and allowing it to settle for 30 minutes in a specialized sampling apparatus. The supernatant is then collected and analyzed for total suspended solids. A second sample is collected at the outer edge of the clarifier by the weir using a similar procedure. The flocculated suspended solids testing is conducted by collecting a sample of the mixed liquor and allowing it to flocculate for 30 minutes in a lab stirrer and then allowing it to settle for 30 minutes. The supernatant is analyzed for total suspended solids to determine the FSS concentration.

The center well DSS and Mixed Liquor FSS show no significant difference between the old and new clarifier designs. The spiral blade clarifier (new clarifier) effluent weir DSS is higher than that draft tube clarifier (old clarifier). Typically, it is expected that the effluent DSS would not be lower than the FSS because the FSS is theoretically conducted under ideal laboratory conditions. It is likely that when this testing was done, plant flows were not excessive and both clarifiers were performing reasonably well. However, the effluent DSS measured in the west clarifier (spiral blade) was greater than the effluent DSS measured in the east clarifier (draft tube) during both rounds of testing. This likely indicates that the higher energy experienced by the mixed liquor entering the spiral blade clarifier is resulting in some deflocculation and loss of dispersed solids over the clarifier weir when compared with the draft tube clarifier mechanism.

Table 3-3 DSS/FSS/ESS Testing between New and Old Clarifier

Clarifier	Center Well DSS, mg/L	Effluent Weir DSS, mg/L	Mixed Liquor FSS, mg/L
First Round of Sample			
West Secondary (Spiral Blade Clarifier)	9	6	7
East Secondary (Draft Tube Clarifier)	10	2	7
Second Round of Sampling			
West Secondary (Spiral Blade Clarifier)	13	5	5
East Secondary (Draft Tube Clarifier)	12	1	5

Section 4 Conclusions and Recommendations

4.1 Conclusions

Based on the evaluation of the existing secondary clarifiers and the differences between the new spiral blade mechanism and older draft tube mechanism, the following conclusions have been developed.

4.1.1 Existing Secondary Clarifier Tanks

- The existing secondary clarifier tanks are shallow based on current design standards but are similar to other secondary clarifiers designed around the same time.
- Prior to this upgrade, the existing secondary clarifiers performed well and WPCP operations staff indicated that they were able to meet their discharge permit requirements at sustained peak flows of 18 mgd.
- State Point Analysis indicates that the existing clarifiers are appropriately sized for average daily flows but may be stressed at sustained peak flows of 18 mgd. In addition, the State Point Analysis indicated that increased return activated sludge pumping capacity may provide some benefit at peak flows. However, based on a review of nearly three years' of effluent data, the WPCP has consistently complied with its effluent TSS limits.
- The existing clarifiers are part of the overall primary clarifier/aeration tank/secondary clarifier structure. In addition, the site is very tight with limited room for additional tankage. Installation of larger, deeper secondary clarifiers would be difficult and costly. Because the existing secondary clarifiers have a history of meeting permit requirements at sustained peak flows, modifications to the existing tankage or addition of new deeper secondary clarifiers is not cost-effective.

4.1.2 Differences between Spiral Blade and Original Draft Tube Clarifiers

- The original draft tube clarifiers were designed to accept annual average flows of 8 mgd and sustained peak flows of 18 mgd.
- The new spiral blade clarifiers were design to accept annual average flows of 6.4 mgd and sustained peak flows of 8.4 mgd. It is unclear why these different design criteria were used.
- Based on the lower design flows provided to the spiral blade clarifier manufacturer, it appears that the following components of the spiral blade clarifier may be undersized:
 - Influent riser pipe/center column.
 - Energy dispersion inlet well and feedwell
 - Spiral blade depth
- The sizing of the influent riser pipe/center column and energy dispersion inlet well and feed well adds additional hydraulic headloss compared with the original draft tube mechanisms, increases the velocity of the mixed liquor entering the clarifier, and may contribute to some deflocculation at higher flows that can result in the loss of dispersed suspended solids. The sludge adapter ring in the path of the influent flow is also contributing to additional headloss in the spiral blade mechanism.
- The depth of the spiral blade is typically sized in proportion to the amount of solids loading on the clarifier. Because the design flows are less than actual flows, the design solids loading for the spiral blade mechanisms are likely lower than the actual solids loading rates. If the depth of the blade is too shallow, it may stir the top of the sludge blanket resulting in reduced settling performance.
- With both secondary clarifiers on line, the additional headloss by the spiral blade clarifiers may not have a significant impact on the upstream hydraulic grade line as the aeration tank effluent weir is not expected to surcharge at peak flows of 18 mgd. However, with one secondary clarifier offline, the additional headloss associated with the spiral blade mechanism would result in the aeration tank effluent weir being surcharged and an increase in the water surface elevation in the aeration tanks and primary clarifiers. This would also

increase the discharge pressure that needs to be overcome by the aeration blowers, however, this condition is not expected to occur very often.

- The relocation of the density current baffles to higher up on the wall of the effluent launder may be contributing to the reduced performance of the west clarifier. This location is much less effective at reducing the density currents and limiting the loss of solids in the clarifier.
- There are several factors that are likely contributing to the performance differences observed by WPCP staff between the new spiral blade mechanism and the original draft tube mechanism including:
 - Reduced RAS concentration in the spiral blade clarifier may be a result of several factors including:
 - the top of the spiral blade being below the top of the sludge blanket may cause a stirring effect and shear the top of the blanket which reduces compaction
 - the increased velocities entering the feedwell at higher flows. If these velocities are directed downward they may disturb the sludge blanket nearer to the center column where the sludge is withdrawn.
 - Increased effluent solids concentrations at higher flows may be caused by:
 - Relocation of the density current baffles in the spiral blade clarifier but not in the draft tube clarifier.
 - Deflocculation or floc shear due to higher energy entering the spiral blade clarifier versus the draft tube clarifier.
 - The above conclusions are based on our evaluation of the different mechanisms and discussions with the spiral blade clarifier manufacturer. To confirm these conclusions, a more detailed analysis could be performed by doing dye tests and other tests in the existing clarifiers under different flow conditions and by performing computational fluid dynamics (CFD) modeling.
 - CFD modeling could also be used to evaluate various improvements or modifications to the existing spiral blade clarifier mechanisms.
 - If it is necessary to increase the depth of the spiral blade due to the actual solids loading at the appropriate design flows, the use of the spiral blade may become impractical due to the shallow depth of the existing clarifier tanks.
 - Based on discussions with the spiral blade manufacturer, it may be possible to reutilize the following components:
 - Walkway/bridge/center platform
 - Motor/gear box drive unit
 - Based on discussions with the spiral blade manufacturer, the following components will need to be replaced to meet the original design flow criteria
 - Center column/riser pipe
 - Truss arms/spiral blades
 - Energy dispersion well
 - Center feedwell
 - Center column cage

4.2 Recommendations

Based on the above conclusions, Wright-Pierce recommends the following:

- Because the manufacturer has indicated that many of the components of the spiral blade clarifiers are likely not suitable for reuse based on the original design flow criteria, the City should replace the spiral blade mechanisms with new mechanisms. Based on the performance of the original draft tube clarifier mechanisms, it is recommended that these mechanisms be replaced in kind. The new mechanisms would be similar to the existing but would incorporate the manufacturer's standard design which has been updated since the original mechanisms were installed.
- Reuse the existing walkway bridge, center platform and drive units as recommended by the manufacturer.
- Relocate the density current baffles to the original installed location.

Section 5 Implementation and Costs

WPEC recommends that the new spiral blade mechanism and the existing draft tube mechanism both be replaced with new draft tube clarifier mechanisms. If the City of Poughkeepsie agrees with this recommendation it will be necessary to develop construction drawings and specifications. Our understanding is that the City would have the current General Construction Contractor demolish the existing mechanisms and furnish and install the new mechanisms as they are already under contract to demolish the existing draft tube mechanism in the east clarifier and install a new mechanism.

Based on proceeding with the development of construction drawings and specifications to be issued to the existing contractor as a Change Order Proposal request, WPEC has developed the following implementation plan and schedule.

5.1 Implementation Plan and Schedule

To implement the recommended modifications, it will be necessary to:

- Obtain approval from the City of Poughkeepsie and EFC for the proposed plan
- Develop construction documents
- Obtain pricing for these modifications from the contractor
- Obtain submittal drawings from Ovivo for the proposed equipment
- Fabricate and deliver the new mechanisms
- Install the new mechanisms and relocate the density current baffles in the west clarifier and startup the equipment.

The anticipated project schedule to complete this process is summarized below in Table 5-1.

This schedule considers that there will be two phases to the installation of the clarifiers so that the facility can continue to meet its SPDES permit requirements throughout the construction phase. Phase 1 will include demolishing the clarifier mechanism in the West Clarifier (spiral blade mechanism), constructing the new clarifier mechanism reusing the components identified by Ovivo as suitable for reuse and relocating the density current baffles. Once this is complete, Phase 2 will begin which will include demolishing the East Secondary Clarifier mechanism and constructing the new clarifier.

Table 5-1 Anticipated Remaining Project Schedule

Milestone	Date
Final Report	3/29/2024
Approval by City of Approach	4/12/2024
Design of Clarifier Modifications	
90% Submittal	8/30/2024
Review Meeting	9/10/2024
Stamped Documents	10/10/2024
Develop Pricing by Contractor	11/7/2024
Notice to Proceed	12/2/2024
Construction	
Submittals Finalized	2/28/2025
Fabrication and Delivery	9/28/2025
Installation	9/28/2025- 2/1/2026

5.2 Opinion of Probable Cost

An Opinion of Probable Construction Cost (OPCC) was developed for the proposed improvements described in this report. These estimates have been developed for planning purposes and are an Association for the Advancement of Cost Engineering (AACE) Class 4 estimate, reflecting a maturity level of the project definition of deliverables in the range of 1% and 15%. A Class 4 estimate results in a cost ranging from -30% on the low end to +50% on the high end. Many factors arise during bidding and construction (e.g. structure conditions, code issues, unforeseen conditions, economic volatility, etc.) that cannot be definitively identified and estimated at this time. These factors are typically covered by allowances, which may not be adequate for all circumstances.

The Association for the Advancement of Cost Engineering (AACE) Class 4 cost estimate that was developed incorporates the following factors:

- Estimated construction inflation to midpoint of construction of 4.7%, based on the midpoint occurring in May 2025.
- A design contingency of 20% to account for unknowns during the design process.
- Construction contingency of 5% of the construction cost estimate to account for changes during construction.
- An allowance of 1% for an independent materials testing laboratory during construction.
- Financing costs of 1% of the construction cost estimate.
- Legal & Administrative costs of 1% of the construction cost estimate.
- Engineering News-Record (ENR) Construction Cost Index 13532 (March 2024).

- Technical engineering services during design and construction of 25% of the construction estimate. This percentage is an allowance and includes services by both Wright-Pierce Engineering Consultants, P.C. and Veolia during the design phase and the construction phases.

The project cost estimate and construction cost estimates for WWTP Secondary Clarifier upgrade are presented in Table 5-1. The Project Cost Estimate for the full scope of construction described herein is \$2.375M, with a Class 4 estimate range of \$1.66M (-30%) to \$3.56M (+50%).

Table 5-2 Total Project Opinion of Probable Cost

VEOLIA WATER NORTH AMERICA OPERATING SERVICES, LLC
CITY OF POUGHKEEPSIE WWTP SECONDARY CLARIFIER EVALUATION
W-P PROJECT NO. 50025
AACE CLASS 4 ESTIMATE
ENR INDEX 13532, 03/2024
PROJECT COST SUMMARY

PROJECT COMPONENT		COST	COMMENTS
CONSTRUCTION		\$1,780,000	Refer to Construction Summary
CONSTRUCTION CONTINGENCY	5.0%	\$90,000	Allowance
TECHNICAL SERVICES	25.0%	\$445,000	
MATERIALS TESTING	1.00%	\$18,000	Allowance
ASBESTOS & LEAD PAINT ABATEMENT		\$0	
DIRECT EQUIPMENT PURCHASE		\$0	
LAND ACQUISITION/ EASEMENTS		\$0	
LEGAL/ ADMINISTRATIVE	1.0%	\$18,000	Allowance
	SUBTOTAL	\$2,351,000	
FINANCING	1.0%	\$24,000	Estimated interim interest
ENGINEER'S ESTIMATE OF PROJECT COST		\$2,375,000	

Notes:

1) Cost estimate is based on ENR INDEX .

Appendix A
OVIVO Proposal

CITY OF POUGHKEEPSIE WATER POLLUTION CONTROL PLANT

POUGHKEEPSIE, NY

PREPARED FOR

Dan Finan of Veolia

AREA REPRESENTATIVE

Sherwood Logan & Associates
Jim Konatsotis
konatsotis.j@sherwoodlogan.com

NOTE

Modifications to Order CSW1549.

PREPARED BY

Bruce Hugo
Phone (801) 931-3000
Fax (801) 931-3080
bruce.hugo@ovivowater.com

Ovivo USA, LLC
4246 Riverboat Road – Suite 300
Salt Lake City, Utah 84123-2583



DATE: March 12, 2024

TO: Poughkeepsie, NY WPCP

Ovivo USA, LLC is pleased to submit a proposal for the following equipment (the “Products”) on the project indicated above (the “Project”). This proposal, either in its original form or in its “as sold” format, constitutes Ovivo’s contractual offer of goods and services in connection with the Project. Please contact Ovivo’s sales representative in your area for any questions or comments you may have in connection with this proposal. The address is:

Sherwood Logan & Associates
370 Middletown Blvd.
Suite 500
Langhorne, PA 19047

Attention: Jim.Konatsotis
Telephone: 203.981.9301
Facsimile: 215-702-1401
Email: konatsotis.j@sherwoodlogan.com

BID PRICING

ITEM	SPECIFICATION SECTION	EQUIPMENT	ESTIMATED SHIP DATE*	PRICE
I	N/A	Secondary Clarifier Equipment Modification	*	\$ 503,789.00

DELIVERY

* Ovivo will submit drawings and other information for approval within **eight (8) weeks** after Purchaser's receipt of Ovivo's written acknowledgement of an approved purchase order. Ovivo intends to ship all Products **twenty-four (24) weeks** after receipt of approved submittals from Purchaser.

GENERAL NOTES

The dates of drawing submission and shipment of the Products represent Ovivo's best estimate, but is not guaranteed, and Ovivo shall not be liable for any damages due to late delivery, including but not limited to liquidated damages. The Products shall be delivered to the delivery point or points in accordance with the delivery terms stated in this proposal. If such delivery is prevented or postponed by reason of Force Majeure, as defined in Ovivo's standard terms and conditions of sale, Ovivo shall be entitled at its option to tender delivery to Purchaser at the point or points of manufacture, and in default of Purchaser's acceptance of delivery, to cause the Products to be stored at such a point or points of manufacture at Purchaser's expense. Such tender, if accepted, or such storage, shall constitute delivery for all purposes of this proposal. If shipment is postponed at request of Purchaser, or due to delay in receipt of shipping instructions, payment of the purchase price shall be due on notice from Ovivo that the Products are ready for shipment. Handling, moving, storage, insurance and other charges thereafter incurred by Ovivo with respect to the Products shall be for the account of Purchaser and shall be paid by Purchaser when invoiced.

*** CORONAVIRUS ADVISORY ***

The coronavirus situation may cause disruptions in our normal business practices, capacity, and supply chain. Any schedule statements made by Ovivo at this time are our best estimate and subject to change. Design will begin upon order acceptance; sourcing, manufacturing and fabrication will not begin until the formal submittal package is approved by owner and/or contractor.

BUY AMERICAN REQUIREMENTS

The Infrastructure Investment and Jobs Act signed into law on November 15, 2021, includes substantive changes to Buy America requirements compared to those specified in the preceding American Iron and Steel Act. While Ovivo fabricates and procures the vast majority of steel domestically for our equipment for the United States market, there are certain components that are either unavailable domestically or impractical to procure domestically through long-established supply chains, while meeting other project specifications, internal requirements, and project schedules. This challenge is further exacerbated by supply chain and labor shortages in pandemic and post pandemic times. As with previous legislation, we are awaiting any additional guidance from the US Environmental Protection Agency or other Agencies for further clarification relating to current Buy America requirements. As of now, the industry at large is unable to ascertain the parameters of the Buy America requirement. Thus, Ovivo cannot make any guarantee that its scope of supply will be in compliance with any Buy America requirements under the Infrastructure Investment and Jobs Act. Accordingly, any offer for sale, proposal, or budgetary quote/estimate submitted by or on behalf of Ovivo should not be construed as meeting such Buy America requirements unless explicitly stated otherwise.

ITEM I - SECONDARY CLARIFIER EQUIPMENT - SPECIFICATION SECTION 464331

OVIVO USA, LLC (formerly (EIMCO Water Technologies) proposes to supply clarifier parts for the modification of Ovivo Order CSW1549-01 to match the previous EIMCO Order 22214-200: two (2) partial Type C2DC Clarifier Mechanisms each suitable for installation in existing 80' x 80' square, 10' sidewater depth, 1.5' freeboard existing concrete tanks. Tank modifications and installation by others. The design of the proposed mechanisms is based upon our standard engineering practices and details which will meet the intent of the Engineer's specifications.

ITEMS INCLUDED:

- Center drive cage. Carbon steel.
- Rake arms, two full radius square box truss design with (4) 6" diameter PVC draw off pipes connected to a 304 stainless steel 3/16" suction header with 304 SS, 20 gauge squeegees per arm.
- Corner sweeps, spring actuated design, steel, with 304 SS, 20 gauge squeegees. One per arm.
- 36" diameter center support/influent column x 1/4" plate. Carbon steel.
- 12" diameter x schedule 20 sludge discharge pipe, carbon steel.
- RAS collection box with flow control gates, carbon steel.
- Rotating inlet feedwell 16' diameter x 5' sidewall x 3/16" plate with supports from cage. Carbon steel.
- Two (2) scum skimmers, steel.
- Anchor bolts, and Assembly fasteners, all 304 SS.
- Operation and Maintenance manuals.
- Freight, FCA factory, freight allowed to jobsite.
- See "Surface Preparation and Paint" section of this proposal.

ITEMS NOT INCLUDED (But not limited to the following):

- Ovivo C40DH drive reused from CSW1549.
- Walkway reused from CSW1549.
- Maintenance platform reused from CSW1549.
- Scum box reused from CSW1549.
- Energy dissipating inlet.
- Effluent weirs.
- Scum baffles.
- Local control panel reused from CSW1549.
- Scum spray systems, spray water piping or spray nozzles.
- Density current baffles.
- Launder covers.
- Field welding. Minimal field welding will be necessary.
- Any field measurements required for provision of this equipment.
- Anchor templates and grout shield. We provide bolt circle dimensions for the center column and anchor positions.
- Demolition or erection services.
- Finish painting.
- Lamp posts.
- VFD controller.
- Lubricants.
- Weir, launder or baffle cleaning equipment.

- Electrical controls or control panels, push button stations, alarms, starters, mounting plates or brackets, conduit, wiring, mounting channels, photocells, etc.
- Stairways, access walkways, interconnecting walkways, gratings, etc., outside tank.
- Handrail around tank.
- Scum piping below scum box stub nozzle.
- Dissimilar metals protection (bituminous paint or isolation tape) for aluminum handrail and grating mounted to steel walkway members. Mastic/sealant/packing is also by others.
- Tank, platform or feedwell covers of any kind.
- See general items listed hereafter.

WEIGHTS:

APPROXIMATE TOTAL WEIGHT OF ONE (1) MECHANISM _____ LBS.

APPROXIMATE WEIGHT OF THE HEAVIEST SINGLE COMPONENT _____ LBS.

FIELD SERVICE:

Our proposal includes the service of a qualified service engineer for the following:

- Three (3) Days / Three (3) Trips at the site to assist in adjusting, servicing, and checking out these mechanisms, and in training the operators in maintenance, troubleshooting, and repair of the equipment. Static torque testing is included in these services.
- Additional service days can be purchased at the current rate.

SURFACE PREPARATION AND PAINT:

Ovivo's drive unit will receive a surface preparation of SSPC-SP-06 and will be finish coated by manufacturer with two (2) coats of Tnemec N69 and one (1) coat of Tnemec Endura-shield series 73. Gear motors shall be furnished with manufacturer's standard enamel.

Submerged fabricated steel will receive surface preparation of SSPC-SP-10 and will be coated with one (1) coat of Tnemec Series N69 epoxy primer to 4-6 MDFT.

ADDITIONAL FIELD SERVICE

When included and noted in the Product pricing of each proposal item, Ovivo will supply the service of a competent field representative to inspect the completed installation and adjustment of equipment, supervise initial operation, and instruct Owner's personnel in the operation and maintenance of each proposal item for the number of eight (8) hour days. Notwithstanding Ovivo's performance of the above-referenced services, Ovivo shall not be held liable for any faulty workmanship or other defects in the Products' installation, or for other goods and/or services, performed by third parties unless such goods and/or services are expressly included under Ovivo's scope of work.

If additional service is required, it will be furnished to the Purchaser and billed to him at the current rate for each additional day required, plus travel and lodging expenses incurred by the service personnel during the additional service days.

It shall be the Purchaser's responsibility to provide for all necessary lubrication of all equipment prior to placing equipment in operation. All equipment must be in operating condition and ready for the Field Service Engineer when called to the project location. Should the Purchaser/Owner not be ready when the Field Service Engineer is requested or if additional service is requested, the Ovivo current service rates will apply for each additional day required, plus travel and lodging expenses incurred by the service personnel during the additional service days.

SURFACE PREPARATION AND PAINTING GENERAL INFORMATION

If painting the Products is included under Ovivo's scope of work, such Products shall be painted in accordance with Ovivo's standard practice. Shop primer paint is intended to serve only as minimal protective finish. Ovivo will not be responsible for condition of primed or finished painted surfaces after equipment leaves its shops. Purchasers are invited to inspect painting in our shops for proper preparation and application prior to shipment. Ovivo assumes no responsibility for field service preparation or touch-up of shipping damage to paint. Painting of fasteners and other touch-up to painted surfaces will be by Purchaser's painting contractor after mechanism erection.

Clarifier motors, gear motors and center drives shall be cleaned and painted with manufacturer's standard primer paint only.

It is our intention to ship major steel components as soon as fabricated, often before drives, motors and other manufactured components. Unless you can insure that shop primed steel shall be field painted within thirty (30) days after arrival at the jobsite, we encourage you to purchase these components in the bare metal (no surface prep or primer) condition.

Ovivo cannot accept responsibility for rusting or deterioration of shop applied prime coatings on delivered equipment if the primed surfaces have not been field painted within thirty (30) days of arrival at the jobsite using manufacturers' standard primers. Other primers may have less durability.

ADDITIONAL PRICING AND DELIVERY TERMS

The price and delivery validity of this proposal is contingent upon ALL of the following milestones being met:

1. Ovivo (a) receives a binding purchase order with written acceptance of this proposal agreeing to the terms of this proposal in its entirety and Ovivo acknowledges receipt to Purchaser or (b) a fully executed contract signed by both Ovivo and Purchaser occurs no later than the expiration date of this proposal or in accordance with the DELIVERY section of this proposal. Letters of Intent are not a means to comply with this requirement.
2. Ovivo receives approval by Purchaser to release for fabrication all equipment no later than the specified weeks/timeframe listed in the DELIVERY section of this proposal from the acknowledgement date of the binding purchase order (1(a) above) or date of signed contract (1(b) above). Ovivo will only release engineering submittals and materials / labor for fabrication with a binding, acknowledged purchase order or fully executed Contract.
3. Ovivo receives written approval to deliver equipment to the destination per the Contract no later than the specified weeks/timeframe listed in the DELIVERY section of this proposal from the acknowledgement date of the binding purchase order (1(a) above) or date of signed contract (1(b) above). If Purchaser is not ready to receive the equipment, then Purchaser shall provide storage in accordance with Ovivo's instructions for storage of equipment. All costs to consolidate, store, and maintain equipment during storage will be borne solely by Purchaser. Ovivo may require Purchaser to buy an extended warranty as a result of this storage requirement.

In the event the aforementioned milestones cannot be met, prices and delivery schedules will be subject to review and adjustment as follows.

- A. Should submittal approval and Purchaser's release for fabrication be extended beyond those listed in the DELIVERY section, escalation costs shall be added to the proposal or contract price and shall be paid by Purchaser. Any such labor, material and transportation/shipping price increases paid by Purchaser shall be based on an industry-standard pricing measure or index for that particular labor, material, or transportation/shipping that accurately represents the market increase or, at Ovivo's reasonable discretion, actual increases incurred by Ovivo. The resulting cost and schedule impact shall be disclosed to the Purchaser prior to fabrication.
- B. Should Purchaser-requested shipment dates/timeframes be extended beyond those listed in the DELIVERY section, Ovivo reserves the right to charge Purchaser all appropriate costs incurred up to date of such event, which may include, but is not limited to, further escalation

costs, storage costs, costs associated with cessation and/or resumption of work, extended warranty costs, and partial or full payment for completion of milestones.

Prices quoted are FCA surface point of shipment, with freight included to an accessible point nearest the jobsite. Federal, state or local sales, use or other taxes are not included in the sales price.

Any additional duties and tariffs invoked after the date of its proposal will be added to the total proposed price.

PAYMENT TERMS

Payment terms are as follows:

Milestone	Cumulative Percent Invoiced – Type Muni
Ovivo Acknowledgement of P.O.	5%
Submittals First Sent to Purchaser	10%
Submittal Approval	30%
Fabrication Complete and Ready to Ship ¹	90%
Equipment Delivery	95%
Field Service Trips Per Contract	100%

¹This milestone will only be invoiced if delays from Purchaser or due to parties other than Ovivo occur. Additional storage and other terms may apply per paragraphs below.

Invoice will be billed at **100%** of the work complete in accordance with the schedules above. No more than 5% retention shall be withheld from each invoice. The final 5% (Retention) shall be invoiced at Substantial Completion of Ovivo's Scope, which may be different that Substantial Completion of the overall project, not to exceed **sixty (60) days** from equipment delivery of the Major Item.

Purchaser shall remit payment for proper invoices received from Ovivo in accordance with the payment terms stated above even if the Purchaser has not been paid by the Purchaser's customer (the "Owner"), if Purchaser is not the end-user of the Products. Payments are due within thirty (30) days after Purchaser's receipt of invoice. Overdue and unpaid invoices are subject to a service charge of 2% per month until paid.

Credit is subject to acceptance by Ovivo's Credit Department.

TAXES

Federal, State or local sales, use or other taxes are not included in the sales price. Such taxes, if applicable, shall be for Purchaser's account.

BONDS

Any performance and/or payment bond agreed to be provided by Ovivo will extend to supply of equipment and services for a period not to exceed the first twenty-four (24) months of the service or warranty period, and for a value not to exceed the total price of this Proposal.

BACKCHARGES

In no event shall Purchaser/Owner do or cause to be done any work, purchase any services or material or incur any expense for the account of Ovivo, nor shall Ovivo be responsible for such work or expenses, until after Purchaser/Owner has provided Ovivo's PROJECT MANAGER full details (including estimate of material cost and amount and rate of labor required) of the work, services, material or expenses, and Ovivo has approved the same in writing. Ovivo will not accept Products returned by Purchaser/Owner unless Ovivo has previously accepted the return in writing and provided Purchaser/Owner with shipping instructions.

****PURCHASE ORDER SUBMISSION****

In an effort to ensure all purchase orders are processed timely and efficiently, please submit all purchase order documentation to the following department and address. If customer sends PO by mail, Customer shall also notify Ovivo electronically.

Ovivo USA, LLC
4246 Riverboat Road, Suite 300
Salt Lake City, Utah 84123

Attn: Amy Harrison / Bruce Hugo
Tel. #: 801-931-3000
Email: amy.harrison@ovivowater.com
bruce.hugo@ovivowater.com

GENERAL ITEMS NOT INCLUDED

Unless specifically and expressly included above, prices quoted by Ovivo do not include unloading, hauling, erection, installation, piping, valves, fittings, stairways, ladders, walkways, grating, wall spools, concrete, grout, sealant, dissimilar metal protection, oakum, mastic, field painting, oil or grease, electrical controls, wiring, mounting hardware, welding, weld rod, shims, leveling plates, protection against corrosion due to unprotected storage, special engineering, or overall plant or system operating instructions or any other products or services.

Performance and payment security, including but not limited to bonds, letters of credit, or bank guarantees, are not included, but can be provided if purchased for an additional cost.

MANUALS

The content of any and all installation, operation and maintenance or other manuals or documents pertaining to the Products are copyrighted and shall not be modified without the express prior written consent of Ovivo. Ovivo disclaims any liability for claims resulting from unauthorized modifications to any such manuals or other documents provided by Ovivo in connection with the Project.

WARRANTY AND CONDITIONS

Ovivo standard Terms and Conditions of Sale is attached and made an essential part of this proposal. These terms and conditions are an integral part of Ovivo's offer of Products and related services and replace and supersede any terms and conditions or warranty included in Purchaser or Owner requests for quotation or specifications and cannot be changed without written approval from an authorized representative of Ovivo.

PERFORMANCE WARRANTY DISCLAIMER

The performance of the Products is dependent upon many factors, including, but not limited to, the influent or feed quality and quantity, additives required, time, temperature, rates of change, sizing criteria used, operating conditions, etc. Therefore, Ovivo cannot assume any liability or responsibility for performance or process results that Purchaser is expecting or has predicted. No verbal or written information or advice given by any personnel of the Ovivo shall create a warranty or in any way increase the scope of the warranties.

THE PARTIES AGREE THAT OTHER THAN ITS MECHANICAL WARRANTY SET FORTH IN THIS PROPOSAL, OR ANY PERFORMANCE WARRANTY SET FORTH ON OVIVO'S STANDARD, ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY PROCESS OR PERFORMANCE RELATED WARRANTIES OR WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY, WHETHER WRITTEN, ORAL OR STATUTORY, ARE EXCLUDED TO THE FULLEST EXTENT PERMISSIBLE BY LAW.

CONFIDENTIALITY

This document is not to be reproduced or submitted to any third party without the written consent of Ovivo.

This document contains, or Ovivo may have previously disclosed to Purchaser, certain technical and business information of Ovivo and/or Ovivo's affiliated entities, including certain copyrighted material, which is considered to be confidential. Such information, hereinafter referred to individually and collectively as the "Information", may include, without limitation, ideas, concepts, development plans for new or improved products or processes, data, formulae, techniques, flow sheets, designs, sketches, know-how, photographs, plans, drawings (regardless of what name, if any, is stated on the title block), specifications, samples, test specimens, reports, customer lists, price lists, findings, studies, computer programs and technical documentation, trade secrets, diagrams, and inventions, notes, and all information pertaining thereto and/or developed there from. This Information is disclosed in good faith solely for the purposes of our proposal, and in addition on the understanding that its confidentiality will be properly maintained and safeguarded.

Neither this proposal, the Information nor any part thereof may be copied, reproduced or used for any purpose other than that for which it is disclosed by Ovivo. Except as reasonably necessary for the evaluation of this proposal, no part thereof may be disclosed to any other person, without Ovivo's prior consent in writing.

Ovivo will retain the rights to any intellectual property rights ("IPR") related to the Products. Ovivo will grant a non-exclusive royalty free license to use the IPR for the sole purposes of operating and maintaining the equipment supplied by Ovivo.

The duties, obligations, restrictions, and responsibilities described hereinabove shall apply to the Purchaser, their agents, affiliates, and all related parties regardless of whether any transaction occurs between Ovivo and Purchaser, and shall survive termination, cancellation, and expiration of any transaction between Ovivo and Purchaser.

In the event of a breach of the terms herein, Ovivo maintains the right to seek any and all remedies and damages available to it, including but not limited to the amount, including interest, by which Purchaser profited from the breach, any gains made by Purchaser or any third party who received Information from Purchaser, compensation for all Ovivo loss or injury, and the value of Ovivo's expectation created by the promise of Purchaser. The parties agree Ovivo would suffer irreparable harm in the event of any breach of these terms, and therefore Ovivo shall be entitled to any and all injunctive relief available.

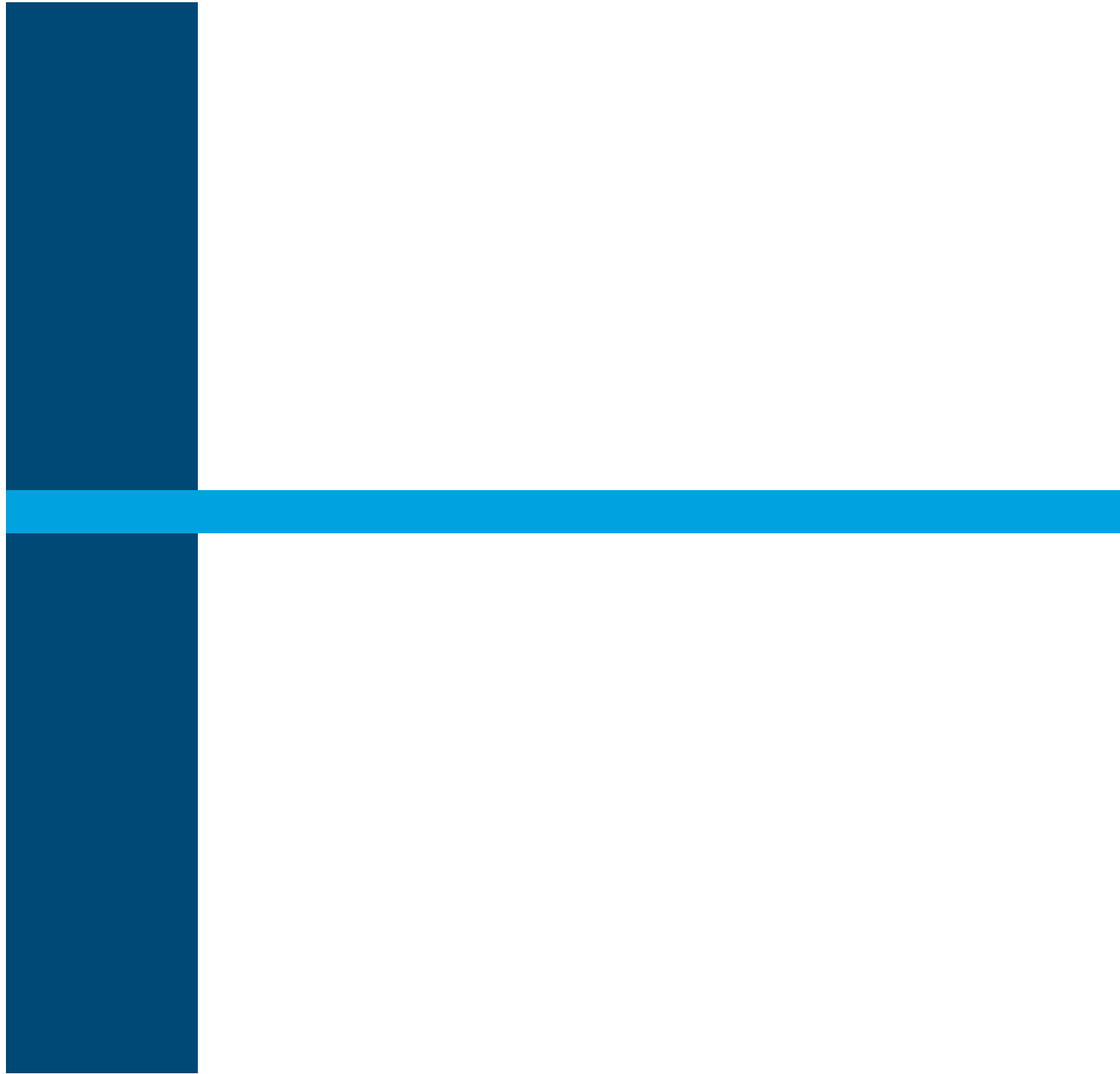
As an equipment supplier, Ovivo's scope of responsibility is limited to the equipment that it supplies and its ability to meet the agreed upon project specifications. Unless expressly stated in its proposal document, Ovivo is not responsible for a treatment plant's process performance, engineering decisions in relation to the plant's construction or operation nor the appropriateness or compatibility of Ovivo's equipment within such plant.

Very truly yours,

Ovivo USA, LLC

Attachment(s):

Ovivo USA, LLC General Terms and Conditions



6 Executive Park Drive, Suite B
Clifton Park, NY 12065
888.621.8156 | wright-pierce.com

SAMPLE CONTRACT

CONTRACT AGREEMENT

This **AGREEMENT**, entered into as of the ____ day of ____, 2024, by and between the **CITY OF POUGHKEEPSIE** (hereinafter referred to as "**CITY**"), having offices at 62 Civic Center Plaza, Poughkeepsie, NY 12601, and _____, (hereinafter referred to as "**CONSULTANT**"), with an address of _____.

1. The term of this Agreement is from approximately _____, 2024 through _____, 2029 and/or shall expire upon completion of the projects administrative closeout.
2. The scope of the CONSULTANT'S duties and responsibilities under this Agreement shall be to perform all of the duties as assigned by CITY consistent with the Scope of Services as attached hereto as Attachment "I".
3. The CONSULTANT agrees to comply with the funding requirements as listed in the Solicitation Documents: **RFQ-COP-08-24-03** and are deemed incorporated herein by reference.
4. The CITY shall pay the CONSULTANT for his/her/their/its services rendered hereunder as set forth in the COST criteria of Attachment "I". Payment for such services shall be made within 30 days upon receipt of an invoice and any supporting documentation that may be requested by the CITY.
5. The CITY is exempt from all State and local taxes and will not be responsible for such portion of any invoice that is attributable to same. CITY will provide CONSULTANT with documentation to assert such exemption on request of the CONSULTANT.
6. The CONSULTANT shall maintain records appropriate to document and support the invoices submitted to the CITY for payments due to CONSULTANT in accordance with this Agreement.
7. The parties hereto intend that the CONSULTANT's relationship with the CITY shall be that of an independent contractor. No agent, employee or servant of the CONSULTANT shall be considered an agent, employee or servant of the CITY. The CITY is interested only in the results obtained under this Agreement; the time, manner and means of conducting the work are under the sole control of the CONSULTANT.
8. CONSULTANT shall indemnify and hold harmless CITY, its, directors, officers, agents, subcontractors and employees against any actions, suits, proceedings, liabilities and damages to the extent that they arise from or are related to the performance or failure to perform his obligation under this Agreement.
9. No member, official, or employee of the CITY shall have any personal interest, direct or indirect, in this Agreement nor shall any such members, official, or employee participate in any decision relating hereto which affects his or her personal interests or the interests of any corporation, partnership or association in which he or she is, directly or indirectly, interested. No members, official, or employee of the CITY shall be personally liable to the CONSULTANT or any successor in interest in the event of any default or breach by the CITY or for any amount which may become due to the CONSULTANT or successor on any obligations under the terms of this Agreement.
10. In the event of a material breach of any of the terms of this Agreement, the non-breaching party shall notify the breaching party in writing specifying the breach. The breaching party shall have ten (10) days from the date of written notice (the "Cure Period") to cure the breach. If the breach has not been cured within the Cure Period, then at its option the non-breaching party may either terminate this

Agreement by sending written notice thereof to the breaching party or it may institute any proceedings necessary to obtain such remedy as it deems desirable, including but not limited to proceedings to compel specific performance.

11. For purposes of this Agreement, neither party shall be considered in default of its obligations provided for herein in the event of enforced delay in the performance of such obligations due to unforeseeable causes beyond its control and without its fault or negligence, including, but not restricted to, acts of God, acts of the public enemy, acts of the other party, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather, or delays of subcontractors and suppliers due to such causes; it being the purpose and intent of this provision that, in the event of the occurrence of any such enforced delay, the time or times for performance of the obligations of the party shall be extended for the period of the enforced delay.

12. No waiver made by either party with respect to the performance, or manner or time thereof, or any obligation of the other party or any condition to its own obligation hereunder shall be considered a waiver of any of the rights of that party with respect to any other default or breach. No such waiver shall be valid unless it is in writing duly signed by the party waiving the right or rights.

13. A notice or communication under this Agreement either party to the other shall be sufficiently given or delivered if sent by first class mail to the addresses set forth at the first paragraph of this Agreement and addressed to the attention of the person or individual who signs the Agreement on behalf of the recipient of the notice.

14. If any term or provision of this Agreement shall to any extent be held to be invalid or unenforceable, the remainder of this Agreement shall not be affected thereby and each term and provision of this Agreement shall be valid and in force to the fullest extent permitted by law. This Agreement shall be governed by and construed under the laws of the State of New York.

15. Nothing in this Agreement shall be construed to create any duty to, or standard of care with reference to, or any liability to, any person not a party to this Agreement. The prior clause notwithstanding, the terms of this Agreement are binding on any subsidiary or affiliated business of the CONSULTANT, and each such entity shall be jointly and severally liable for the obligations of the CONSULTANT as set forth herein.

16. This Agreement may not be assigned, transferred or pledged by CONSULTANT without the written consent of the CITY, which consent may be withheld at the discretion of the CITY.

17. The CONSULTANT shall purchase and maintain in full force and effect insurance policies with the limits of insurance provided in the contract documents or the following insurance coverage's, whichever is greater. The insurance should be from an insurer that has an A.M. Best Rating of "A-" or better.

- a. Commercial General Liability with limits of not less than \$1,000,000 per occurrence, \$2,000,000 general aggregate, \$1,000,000 and \$2,000,000 products-completed operations aggregate. Such insurance shall cover liability arising from premises, operations, independent contractors, product-completed operations for one year following project completion, personal and advertising injury and liability assumed under an insured contract. There shall be no endorsement or modification of the Commercial GL form arising from pollution, explosion, collapse, underground property damage or work performed by subcontractors.
- b. If required by the CITY, professional liability with a limit of \$2,000,000 per claim/occurrence and \$2,000,000 annual policy aggregate.
- c. If required by the CITY, contractors pollution cleanup/remediation and pollution liability with a

- limit of \$2,000,000 per claim and \$2,000,000 annual policy aggregate
- d. Business Automobile Liability with a limit of not less than \$1,000,000 each accident, including owned, non-owned, leased and hired vehicles.
 - e. Statutory Workers Compensation and employer's liability coverage for all employees, including corporate officers and soleproprietors.
 - f. Umbrella/Excess Liability with a limit of not less than \$2,000,000 per occurrence/aggregate
- REVISED PER P.A. 3/23/2021

City of Poughkeepsie is to be included as an additional insured on a primary, non-contributory basis (using CG 2010 07/04 and CG 2037 10/01 or its equivalent) for item I. Items 1 and 6 will have no exclusions for New York State "labor law" claims and/or claims for injuries to subcontractor employees.

All policies required by this paragraph shall include a waiver of subrogation in favor of **City of Poughkeepsie**.

Except where prohibited by law, all policies and certificates of insurance shall expressly provide that **City of Poughkeepsie** must receive 30 days written notice in the event of material alteration, cancellation or nonrenewal of coverage, including subcontractors' insurance.

On receipt of such notice, the CITY shall have the option to cancel this Agreement without further expense or liability to the CITY, or to require the CONSULTANT to replace the canceled insurance policy, or to rectify any material change in the policy, so that the insurance coverage required by this paragraph is maintained continuously throughout the term of this Agreement in form and substance acceptable to the CITY. Failure of the CONSULTANT to take out or to maintain, or the taking out or the maintenance of any required insurance, shall not relieve the CONSULTANT from any liability under this Agreement nor shall the insurance requirements be construed to conflict with or to limit the obligations of the CONSULTANT concerning indemnification.

- a. All certificates of insurance shall contain a clause naming the CITY as loss payee on the policies and providing that any notices of cancellation of insurance be given to the CITY no less than ten (10) days' notice prior to any such cancellation.
- b. Renewal certificates covering the renewal of all policies expiring during the life of this Agreement shall be filed with the CITY not less than thirty (30) days before the expiration of such policies.
- c. Certificates should be sent to the attention of the Purchasing Agent, 62 Civic Center Plaza Poughkeepsie, NY 12601 or by email: sdavison@cityofpoughkeepsie.com

All insurance companies issuing policies relating to this Agreement must be licensed to do business in New York State and be approved by the CITY's Law Department.

All losses of CITY property shall be adjusted with and made payable directly to the CITY.

In the event that claims in excess of these amounts are filed in connection with this Agreement, the excess amount or any portion thereof may be withheld from payment due or to become due the CONSULTANT until the CONSULTANT furnishes such additional security as is determined necessary by the CITY.

- 18. The terms and conditions contained in this Agreement constitute the entire agreement between the parties and shall supersede all previous communications, representations or agreements, either verbal or written, between the parties with respect to the subject matter of this Agreement.
- 19. All information provided by CITY to CONSULTANT shall remain confidential and not disclosed

to any other party without the written consent of the CITY.

20. This Agreement may be terminated by the CITY without cause upon thirty (30) days written notice to the CONSULTANT. Except as otherwise agreed in writing or as otherwise provided in this Agreement, upon termination neither the CITY nor CONSULTANT shall have any further obligation to each other by way of compensation or otherwise, however in no event shall termination by the CITY relieve the other party of obligations already incurred.

21. The CONSULTANT agrees that upon termination of this Agreement, the CONSULTANT will cooperate with the CITY to develop a transition plan and assist in affecting an orderly transfer of services and obligations to any successor CONSULTANT so as to prevent any disruption services.

22. The CONSULTANT agrees to comply with the provisions of the Americans With Disability Act of 1990 (ADA) prohibiting discrimination on the basis of disability with regard to employment policies and procedures, structural and program accessibility, transportation and telecommunications, insofar as those provisions are applicable to the work and/or services to be performed under this Agreement.

23. Any disputes arising directly or indirectly out of this Agreement shall be determined pursuant to the laws of the State of New York. The parties hereby choose the New York State Supreme Court, Dutchess County as the forum for any such disputes.

24. Litigation involving this Agreement, including breach or alleged breach thereof, may not be submitted to binding arbitration but must instead be heard in accordance with the preceding paragraph.

25. This Agreement shall be deemed to have been mutually prepared by the parties hereto and shall not be construed against any of them solely by reason of authorship.

26. Each and every provision of federal, state or local law, rule or regulation required by law to be inserted in this Agreement shall be deemed to have been inserted herein. If any such provision is not inserted through mistake or otherwise, then, upon the application of either party, this Agreement shall be physically amended to make such insertion.

27. The CONSULTANT shall comply with all local laws and resolutions of the Common Council of the City of Poughkeepsie, including, but not limited to, filing of Disclosure Statements and Affirmation Action Plans, if required by local law or resolution.

28. The CONSULTANT shall comply with all of the provisions of the Labor Law of the State of New York including, but not limited to, prevailing wage provisions, if required by law, and with Article 15 of the Executive Law of the State of New York relating to unlawful discriminatory practices, insofar as such provisions are applicable to the work and/or services to be performed under this Agreement.

29. During the term of this Agreement, CONSULTANT agrees not to discriminate against any employee or applicant for employment because of race, creed, sex, color, national origin, disability or marital status and further agrees to take affirmative action to ensure equal employment opportunities without such discrimination. No services to be rendered pursuant to, or in connection with, this Agreement may be refused to any person because of age, race, creed, sex, color, national origin, disability or marital status.

30. The CONSULTANT agrees to maintain and have available for audit such records as may be required by the City of Poughkeepsie, County of Dutchess, State of New York or United States governmental agencies. These records shall be available for inspection by properly identified personnel

of the above governmental agencies upon reasonable request and shall be maintained for a minimum of ten (10) years after termination of this Agreement.

31. The CONSULTANT agrees that at least ninety (90) days prior to commencing suit against the CITY for any matter arising directly or indirectly out of this Agreement, CONSULTANT shall provide the CITY a sworn document listing the time, place and manner of any breach of this agreement, together with an itemized list of damages to which the CONSULTANT believes itself entitled.

- A. The CITY shall have the right to conduct a deposition upon oral questions of an officer, employee or agent of the CONSULTANT, of the CITY's choice, as to any matter arising under this Agreement within the 90-day period described above.
- B. Strict compliance with this paragraph shall be a condition precedent to maintenance or institution of any action or proceeding, whether legal or administrative. This paragraph shall not be construed to toll any applicable statute of limitation.
- C. Any action against the CITY must be commenced within one year of the event which gives rise to liability.

32. The CITY shall be obligated to pay for the services received only to the extent that funds have been appropriated and encumbered for such purpose. This Agreement is not a general obligation of the CITY. Neither the full faith and credit nor the taxing power of the CITY are pledged to the payment of any amount due or to become due under this Agreement. It is understood that neither this contract nor any representation by any CITY employee or officer creates any obligation to appropriate or make monies available for the purpose of the Agreement.

33. The CITY shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, the CITY's option to withhold for the purpose of set-off any moneys due to the CONSULTANT under this Agreement up to any amounts due and owing to the City with regard to this Agreement, any other agreement with the CITY or any of its departments or agencies. This right to set-off includes any agreement for a term commencing prior to or subsequent to the term of this Agreement. The right of set-off shall include any amounts due to the CITY for any reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto.

34. CONSULTANT shall pay all costs and expenses, including reasonable attorney's fees (in-house or retained counsel), that the CITY incurs in enforcing any of the terms of this Agreement.

This Agreement represents the entire understanding between the parties and shall not be modified except by a signed agreement mutually entered into by the parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement Contract.

THE CITY OF POUGHKEEPSIE

XXXXXXXXXXXX

By: _____

Yvonne Flowers, Mayor

XXXXXXXXXX

) **SS:**

On the day of , 20 , before me, the undersigned, a Notary Public in and for said state, personally appeared **Yvonne Flowers, the Mayor** of the city of Poughkeepsie, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s) or the person on behalf of which the individual(s) acted, executed the instrument.

) **SS:**

On the day of , 20 , before me, the undersigned, a Notary Public in and for said state, personally appeared , personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s) or the person on behalf of which the individual(s) acted, executed the instrument.

Reviewed by Corporation Counsel: _____ Date: _____

EFC Terms and Conditions

SAMPLE

ATTACHMENT 1

SAMPLE



CITY OF POUGHKEEPSIE, NY

RFQ NO. 08-24-03

Cost Proposal

SEPTEMBER 2024

Engineering Services for Secondary Clarifiers for WPCP Improvement Project

September 20, 2024

Shirley Davison, Purchasing Agent
City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, NY 12601

**SUBJECT: Engineering Services for Secondary Clarifiers for WPCP Improvement Project
Fee Proposal**

Dear Shirley,

Wright-Pierce is a strong believer in the selection of engineers on the basis of qualifications, with an equitable fee negotiated between the selected firm and the client, based on a mutually established, detailed scope of services.

For the proposed scope of services, broken down by the tasks discussed in our Project Understanding and Approach section, we propose a not-to-exceed total fee of \$95,000. Our proposed fee includes the services listed under Tasks 1, 2, and 3 in accordance with the information in the RFQ. As noted in our Project Approach, we have not included any electrical, instrumentation, or concrete rehabilitation services as we do not believe they are required. We have also assumed that the project will be completed under the existing construction contract and have not included any additional specifications or drawings in our proposed fee beyond what is described. We have also assumed that full-time on-site construction observation will be required for a period of eight weeks.

Our itemized task-by-task breakdown of labor and expenses, showing both dollars and hours, follows this cover letter.

Our fee reflects our understanding of the needs of the city for this project. Please feel free to contact us should you have any questions about our proposed fee, or should you require additional information.

Sincerely,
WRIGHT-PIERCE



Christopher N. Pierce, PE
Sr. Vice President

chris.pierce@wright-pierce.com

Proposed Fee

Proposed Fee

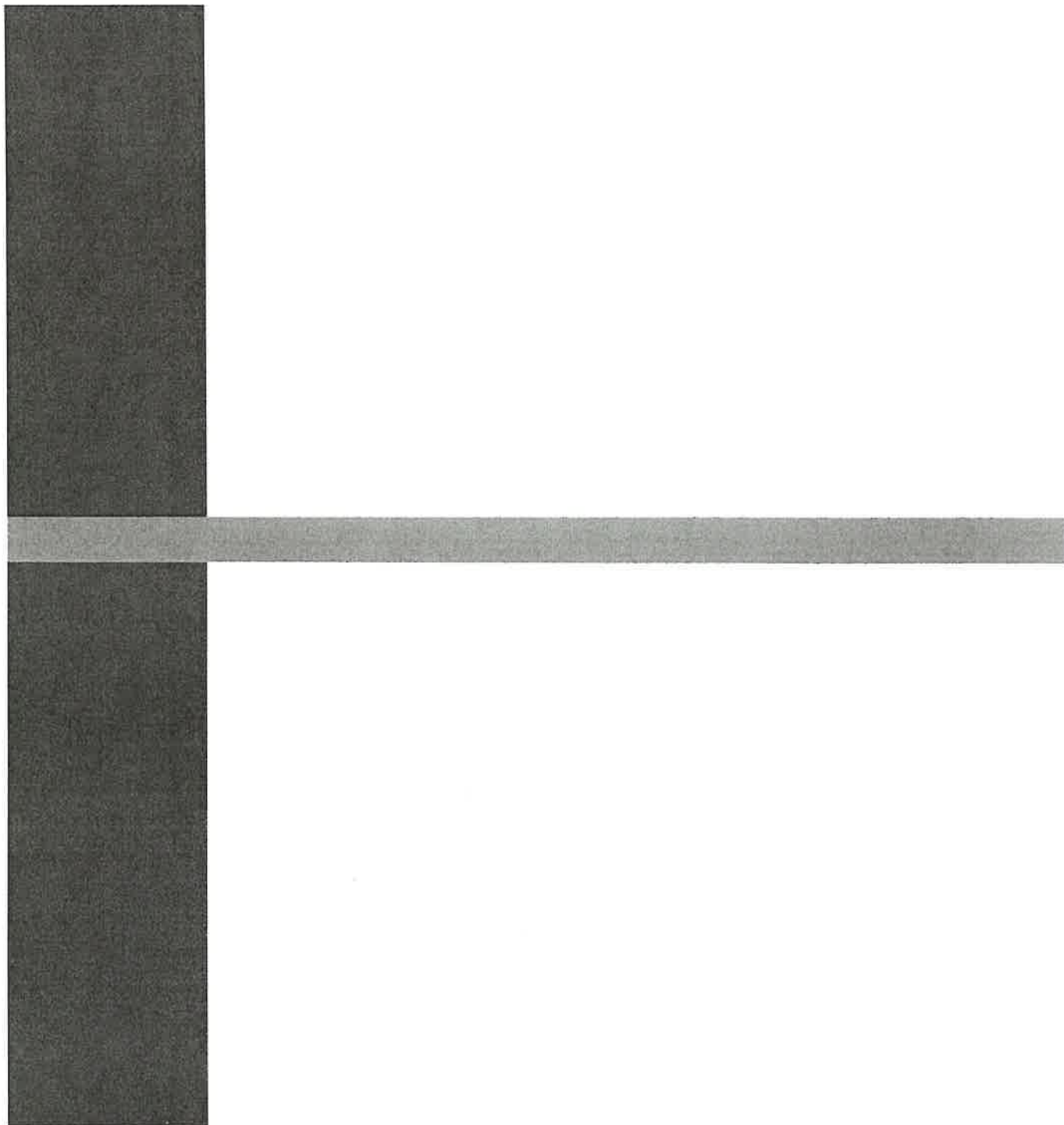
We are flexible and willing to reconsider any aspect of our proposal if we can provide a more tailored level of service.

Wright-Pierce has included an allowance for a M/WBE sub consultant to provide construction observation services.

For the proposed scope of services, broken down by the tasks discussed in our scope of services section, we propose a not-to-exceed fee of \$95,000. We have provided a scope and fee that we believe reflects the level of effort required to complete this effort. We have also based our fee on leveraging our existing knowledge of the system and the data we have collected from our ongoing support of Veolia during the original evaluation.

Level of Effort Table

City of Poughkeepsie Secondary Clarifiers for the WPCP Improvement Project - Base Scope of Services					
Scope of Services	Hours	Labor	Expenses	Subconsultants	Total Cost
1. Design Development Phase	116	\$17,500	\$500	\$0	\$18,000
2. Procurement Phase	24	\$4,750	\$250	\$0	\$5,000
3. Construction Phase	316	\$50,000	\$2,000	\$20,000	\$72,000
Total Estimated Engineering Fee with Base Scope					\$95,000



WRIGHT-PIERCE 
Engineering a Better Environment

6 Executive Park Drive, Suite B
Clifton Park, NY 12065
888.621.8156 | wright-pierce.com

chris.pierce@wright-pierce.com

Date: 09/24/24

Summary Sheet:

**RFQ-COP-08-24-03 Engineering Services for
Secondary Clarifiers**

Score Rating:

Technical Score Rating:

3- Exceeds minimum requirements

2 - Meets minimum Requirements

1 - Meets Some of the minimum requirements

0 - Does not meet minimum requirements

		Wright -Pierce		Pitingaro & Doetsch		
Criteria	Max Points	Rating	Weighted Score	Rating	Weighted Score	NOTES
Past Work Experience/References	20%	8	53.33%	6	40.00%	
Staff Experience/Qualifications	20%	9	60.00%	6	40.00%	
Public Funding NYSEC Experience	20%	6	40.00%	7	46.67%	
Local Experience-Familiarity working with the City	20%	9	60.00%	5	33.33%	
Project Management Plan	20%	8	53.33%	8	53.33%	
Weighted Total Score	100%		266.67%		213.33%	



CITY OF POUGHKEEPSIE, NY

RFQ NO. 08-24-03

Statement of Qualifications

SEPTEMBER 2024

Engineering Services for Secondary Clarifiers for WPCP Improvement Project



September 20, 2024

Shirley Davison, Purchasing Agent
City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, NY 12601

SUBJECT: RE: Engineering Services for Secondary Clarifiers for WPCP Improvement Project

Dear Shirley,

The City and Town of Poughkeepsie jointly own a water pollution control facility (WPCF) to treat sanitary and combined sewage flows within its service area. Recognizing that this is a valuable asset to the communities to allow for growth, economic development, and to protect public health and the environment, the City has been implementing a series of capital improvements at the WPCF since 2018. One of the capital projects was to replace the existing secondary clarifier mechanisms with two new mechanisms. Following replacement of the first mechanism, the City's contract operator, Veolia, experienced operational difficulties with the new equipment at higher flow rates. Veolia retained Wright-Pierce Engineering Consultants, PC (WPEC) to evaluate the potential causes for these operational issues and it was determined that the design flow rates used to size the new equipment were below the actual flows at the WPCF. Therefore, the city is seeking to retain a consultant to replace these mechanisms with new mechanisms similar to the original equipment.

Wright-Pierce, whose services in New York are provided by Wright-Pierce Engineering Consultants, PC (WPEC), is a multi-disciplinary engineering firm that specializes in wastewater engineering services. Wright-Pierce has provided similar services to municipalities like Poughkeepsie since 1947. We are also familiar with the issues related to the secondary clarifiers having completed the evaluation of the existing equipment for Veolia. Working with Wright-Pierce offers the following benefits:

- **Project Knowledge and Experience.** Wright-Pierce has a growing relationship with the City of Poughkeepsie through our work with Veolia on projects such as the Poughkeepsie Wastewater Treatment Facility Odor Control System design, the development of Poughkeepsie's Mercury Pollution Minimization program, and the City of Poughkeepsie WWTP Secondary Clarifier Evaluation. This prior work and the information we learned during our assessment will allow us to start informed and ready.
- **Unmatched Wastewater Infrastructure Experience.** Efficiently and cost effectively designing and administering the construction of wastewater projects is critical. Our team fully understands the design aspects of this project and will leverage this knowledge to provide the services needed. We have and are currently providing services for similar projects in New York, including Secondary Clarifier Upgrades for Saratoga County which are in construction.

9/20/2024

Shirley Davison, Purchasing Agent

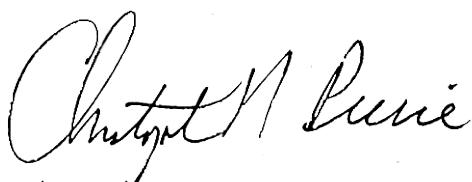
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- **In-House Design Team.** As one of the few firms of our size that have all the support disciplines in-house, Wright-Pierce's seasoned professionals include architects, structural, mechanical, electrical, and instrumentation engineers. Through our wastewater infrastructure focus, all our team members truly understand the intricacies and interrelationships within WPCPs and their supporting infrastructure. We will deliver sole source service on this project which will result in direct value and timeliness for Poughkeepsie.
- **Specialized MBE and WBE Partners.** While WPEC has the capacity to perform all services provided in the scope, specialty minority and women-owned business firms are included within our team to contribute to the field investigation portions of the project and to satisfy the MBE/WBE funding requirements. As part of developing a specific scope and fee with the city for this project we would utilize one or more of the following subconsultants to meet participation goals. JKMuir, LLC (WBE), and/or Ravi Engineering and Land Surveying, PC (MBE) will provide on-site observation services during construction. We may also utilize Jade Stone Engineering (WBE) to provide electrical support if needed to meet participation goals. As part of developing the final scope and fee, we will work with the city to meet the 20% M/WBE participation requirements.
- **Familiarity with local, state, and federal funding agencies and programs.** Following NYS EFC funding procedures and meeting requirements and deadlines is essential. We've recently completed the design of the Tivoli, NY Wastewater Treatment Plant and Pump Station Upgrade project using EFC funding.

We appreciate being considered for this opportunity and look forward to meeting with the selection committee to present our qualifications/approach to this project or answering any questions you may have.

Sincerely,

WRIGHT-PIERCE



Christopher N. Pierce, PE
Principal-in-Charge & Project Manager

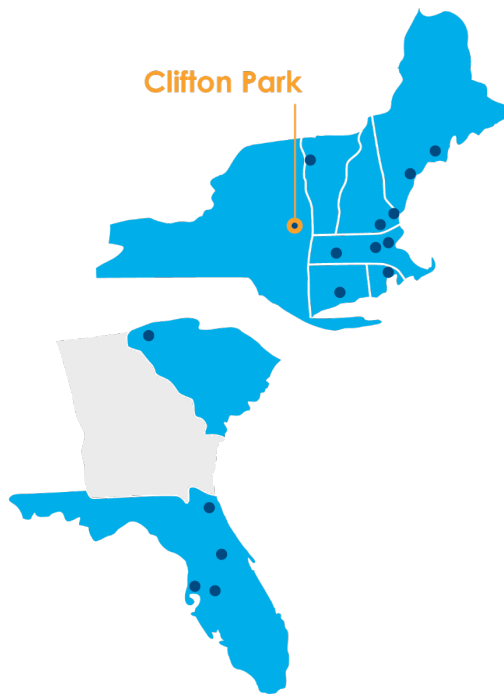
chris.pierce@wright-pierce.com

860.852.1950

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About WPEC

Wright-Pierce Engineering Consultants, PC (WPEC) provides water, wastewater, and infrastructure services to public and private clients in the State of New York. Established in 2011, WPEC owners and engineers are also part of the ownership and management team of Wright-Pierce, an award-winning, multi-discipline engineering firm that has been providing water, wastewater, and civil infrastructure services since 1947. WPEC is licensed to provide engineering services in New York and Wright-Pierce provides engineering services and support to WPEC and its clients, thereby offering the benefits of Wright-Pierce's decades of engineering experience.

Employee-owned and operated, Wright-Pierce is made up of more than 300 engineers and support professionals located in offices throughout the Northeast and Southeast. Wright-Pierce completes many projects with construction values ranging from less than \$100,000 to more than \$100 million. We provide full-service engineering from initial planning to design, bidding, construction administration, and operational support.



- ACEC** Award-Winning Projects
- PSMJ** Circle of Excellence
- ENR Top 500** Design Firms
- ENR Top 200** Environmental Firms
- ENR Top 50** Sewer and Waste
- ENR Top 25** Wastewater Treatment
- Top 50** Trenchless Engineering Firms

An Award-Winning Firm

Wright-Pierce has been recognized by several industry organizations for business performance and engineering excellence. We rank in Engineering News-Record (ENR) "Top" lists, including the Top 500 Design Firms and Top 200 Environmental Design Firms in the country. Many of our projects receive regional ACEC Engineering Excellence Awards. In addition, Wright-Pierce is a multi-year winner of the PSMJ Resources, Inc. 'Circle of Excellence' Award. PSMJ is a firm dedicated to business practices of architectural and engineering (A/E) firms worldwide and bestows its Circle of Excellence award after assessing benchmarks for operations, management, and sustainability.

Responsive Service Focused on Your Success

The cornerstone of our business is to help our clients improve their communities while protecting public health and the environment. For every project, we focus on understanding the project issues and goals; stressing practical, operator-friendly solutions; identifying fiscal constraints and emphasizing value-based solutions; and involving and collaborating with our clients throughout the project.

Company Governance

Wright-Pierce Engineering Consultants, PC (WPEC) was established in 2011 by shareholders of Wright-Pierce and is licensed to provide engineering services in the State of New York. WPEC is a closely held private corporation organized under the laws of the State of Maine. WPEC and Wright-Pierce have an Administrative Services Agreement whereby Wright-Pierce provides engineering services and support to WPEC and its clients.

Wright-Pierce is an engineering consulting firm that is a closely held private corporation organized under the laws of the State of Maine in 1954. The firm operated as a partnership from 1947 to 1954. Over the years the firm has grown and diversified. Wright-Pierce has been consistently profitable and manages its finances conservatively. The company is governed by a set of bylaws. It is incorporated in the State of Maine as a Subchapter S Corporation.

Wright-Pierce has offices in Topsham and Portland, Maine; Bedford and Portsmouth, New Hampshire; Burlington, Vermont; Middletown, Connecticut; Burlington, Marlborough, and Westfield, Massachusetts; Providence, Rhode Island; Greenville, South Carolina; Maitland, Jacksonville, Lakeland, and Tampa, Florida; and Clifton Park, New York. The company is licensed to practice in other states, including Louisiana and West Virginia.

Wright-Pierce is owned by a group of key employee stockholders representing about 20% of employees. The stockholders elect a board of directors, which in turn elects corporate officers. Wright-Pierce has had an ownership transition plan in place for over 30 years that ensures continuity of ownership and business operations beyond the death, disability, or retirement of key stockholders and officers.

We maintain that our company is managed by current employees who are invested in the success of our clients, and, therefore, our company. Our employee owners are also invested in the longevity of our company, not short-term profit, and they make decisions for our company that will sustain us long-term. We believe this differentiates us from our publicly owned competitors whose main corporate mission is to maximize shareholder value. We have no foreseeable plans for mergers or acquisitions.

WPEC Officers

- Paul F. Birkel, President & CEO*
- John W. Braccio, Chairman of the Board & Strategic Advisor*
- Christopher N. Pierce, Senior Vice President/Treasurer*
- Timothy R. Vadney, Senior Vice President*
- Ronald D. Williams, Associate Vice President
- Ryan T. Wingard, Senior Vice President/Clerk*

Wright-Pierce Officers

- Paul F. Birkel, President & CEO*
- John W. Braccio, Chairman of the Board & Strategic Advisor*
- Steven C. Hallowell, Senior Vice President*
- Edward J. Leonard, Senior Vice President*
- Christopher N. Pierce, Senior Vice President*
- Laura J. Riley, Vice President/Treasurer/CFO*
- Timothy R. Vadney, Senior Vice President*
- Ronald D. Williams, Associate Vice President
- Ryan T. Wingard, Senior Vice President/Clerk*

* Denotes an officer with contract signing authority.

Wastewater Engineering Services

Effective management of wastewater is critical to maintain public health and protect our natural resources. This includes collection and treatment of wastewater and its residuals, from small decentralized systems to large, complex municipal and industrial systems.

Ranked among the top 25 U.S. wastewater treatment firms in Engineering News Record's Sourcebook, we offer all aspects of comprehensive planning, design, construction administration, operational assistance, and asset management services.

Wastewater Planning

- Sewer system master planning
- Facility plans/evaluations
- Value engineering
- Asset Management/Capital Improvement Plans (CIP)
- Biosolids management
- Energy efficiency
- FOG management
- Decentralized wastewater management
- Industrial pretreatment/local limits
- Funding/user rate studies
- Regionalization studies
- Regulatory assistance/permitting
- Public outreach/education

Wastewater Collection

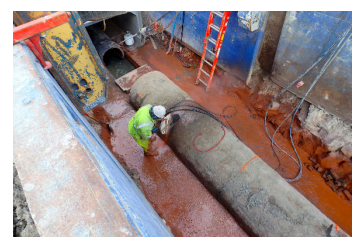
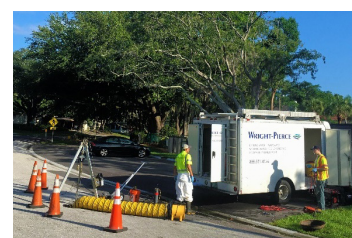
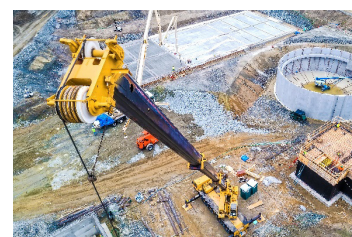
- I/I, SSES, and condition assessments
- CMOM/SSO control compliance
- Combined sewer overflows
- Inline/offline CSO storage
- Rehabilitation/combined sewer separation
- Hydraulic modeling/design
- Odor control
- Sewer replacement/extensions

Wastewater Pumping

- Wet/dry well stations
- Submersible stations
- Above-grade suction-lift stations
- Force mains
- Pressure pipe assessment
- Low pressure sewers
- Odor control
- Bypass provisions
- Influent screening
- Grinding and grit removal
- Emergency power
- Wet well mixing for FOG control

Wastewater Treatment and Discharge/Reuse

- Onsite septic systems
- Influent pumping systems
- Influent screenings/grit
- Septage receiving/treatment
- Fats, oils, and grease (FOG)
- Primary treatment
- Secondary treatment
- Nutrient removal/treatment
- Disinfection
- Biosolids
- Digestion
- Odor control
- Water reclamation/reuse
- Surface water outfalls/subsurface disposal
- Decentralized package plants
- Lagoon treatment



Construction Administration & Observation Services

The best design in the world is of little value if the design is not constructed properly. We understand the importance of competent construction administration services to encourage appropriately constructed projects and minimize public disruption during the construction process.

Wright-Pierce's team members typically stay with a project from conception into design, through construction and startup/commissioning. This staffing model enhances consistency and our team members' understanding of the client's goals for the project through the design, construction, and commissioning phases. Our project managers, project engineers, and support staff perform the contract administration services during the construction phase. Additionally, we maintain a staff of resident project representatives (RPRs) to perform on-site observation of the construction process. Our RPRs oversee the work for compliance with design plans and specifications, monitor site safety, and keep field reports to document construction work. We have in-house quality control procedures for our field staff, and we bring our field staff together quarterly to review "lessons learned" and to continuously improve our design and construction management methods.

We know the importance of appropriate project documentation during construction, and we maintain a complete "paper trail". We encourage regular communications between all stakeholders to anticipate and resolve issues. The following services are examples of typical duties performed by Wright-Pierce during the construction phase:

- Lead meetings
- Review progress schedules
- Review submittals
- Conduct on-site observations of the work in progress
- Report to the client any work that does not conform
- Oversee tests, equipment and systems startups, and O&M training
- Oversight of contract documents modifications
- Clarifications and interpretations of the contract documents
- Inspections
- Records maintenance
- Report generation
- Certificates and O&M manuals
- Review applications for payment
- Review traffic control devices
- Inspect erosion/sedimentation control devices
- Quantity documentation



Project Funding Assistance

Public infrastructure projects often require significant capital expenditures and a well-developed financing plan. Many municipalities request assistance to establish funding for their projects, and each financing approach can be unique.

Wright-Pierce has considerable experience in developing cost-effective engineering solutions and investigating funding options to maximize the use of state and federal grants and low-interest loans.

We routinely present clients with viable funding options, including advantages and disadvantages of each alternative so that our clients can make informed decisions.

We are intimately familiar with eligibility, application, and administration requirements of funding programs and understand how to present a project to maximize grant funding. **Since 2021, we have assisted our clients in successfully applying for over \$700 million in grant and loan funding representing over \$1.1 billion in total project costs.**

Grant/funding entities we have successfully worked with include:

- American Rescue Plan Act (ARPA)
- US Department of Agriculture (USDA) Rural Development Programs
- USDA Predevelopment Planning Grant (PPG)
- US Department of Interior (DOI) Bureau of Reclamation Programs
- US Department of Transportation (DOT) Programs
- US Fish & Wildlife Service Programs
- National Fish & Wildlife Foundation (NFWF)
- Environmental Protection Agency (EPA)
- National Park Service (NPS) Programs
- Housing and Urban Development (HUD)
- Community Development Block Grant funding programs (CDBG)
- Economic Development Administration (EDA)
- Water Infrastructure Finance and Innovation Act (WIFIA)
- State and Tribal Assistance Grants (STAG)
- State Revolving Loan Funds (SRF)
- Local Development Investment Program (LDIP)
- Clean Water Fund (CWF)
- Army Corps of Engineers
- Federal Emergency Management Agency (FEMA)
- Hazard Mitigation Grant Program (HMGP)
- State Aide Grants (SAG)
- Energy rebate programs
- Northern Border Regional Commission (NBRC)



New York Permitting & Regulatory Assistance

Wright-Pierce routinely assists clients with obtaining a wide range of regulatory approvals from federal, state, and local agencies. Because of the amount of this work that we do, our staff is able to keep abreast of recent and pending changes to the complex system of regulations that governs design, bidding, and construction. We also utilize MWBE subconsultants with this expertise. Within the State of New York, funding and permitting agencies might include:

State Agencies

NYS Department of Environmental Conservation

- Environmental Impact Assessment (SEQR)
- Domestic wastewater collection/transmission system design
- Annual flow certification
- Water withdrawal permits
- Treatment facility biosolids plan
- Biosolids management/storage
- BUDS permits
- CSO Annual Report
- Air emissions licensing
- SPDES & NPDES
- Sludge/residuals reuse/storage
- Underground tank program
- Freshwater wetland permits
- Chemical Bulk Storage (CBS) Reg.
- MS4 Compliance
- Preliminary engineering reports

NYS Department of Transportation

- Access/driveway permits
- Drainage permits
- Highway work permits
- Utility permits

NYS Department of Health

- Public drinking water systems
- On-Site wastewater disposal
- Residential wastewater disposal
- Holding tanks
- Map, Plan, Report (MPR)

NYS Comptroller

- Rate Studies
- Utility District Formation
- Special District Improvements

Federal Agencies

Corps of Engineers Permitting

Under Chapter 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act

Environmental Reviews

Under NEPA associated with use of federally originating funds

- USDA/Rural Development
- CDBG/HUD
- EDA
- FEMA

Local Approvals

- Site plan (planning board)
- Subdivision (planning board)
- Conditional use (planning board)
- Variances (zoning appeals)
- Street opening/utility location permits
- Driveway permit
- County or city level development review
- Rezoning
- Conservation District coordination



2

Our Team Dedicated to Your Project

From our full-service, diverse staff of experienced engineering professionals, operators, technicians, and support personnel, we have assembled a project team with many years of demonstrated practical experience completing similar projects. We understand that no one will know the requirements of this project better than you. To find the best solution, working together as a team will be essential, and our team is committed to working with you.

Christopher Pierce, PE will be your dedicated Project Manager for this project. He has over 34 years of experience working on wastewater infrastructure projects. Chris will be supported by the technical team shown below, many of which have worked together before on projects similar to this one and have familiarity with you and the project.



MANAGEMENT

Principal-in-Charge & Project Manager

Christopher Pierce, PE

Technical Advisor

Dennis Dievert, Jr., PE

TECHNICAL TEAM

Lead Project Engineer

William Edgerton, PE

Project Engineers

Franklin Meade, IE
Krista Griego, EIT

SUPPORT SERVICES

Structural

Ryan Cyr, PE

Field Investigations

JKMuir, LLC*
Ravi Engineering and Land Surveying*

Electrical

Chris Abell, PE

Electrical

Jade Stone Engineering*

* Denotes subconsultant

Introducing Our Key Team Members

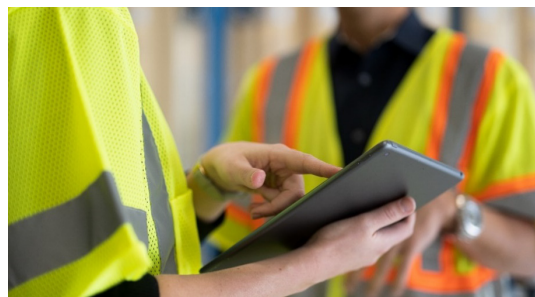
The following introductions describe each of our key team members and explains:

- Their role and responsibilities for this project
- Their general qualifications as they relate to this project
- A synopsis of specific experience that helps them add value to this project

Additional information about each team member and their experience can be found in their resume in an appendix to this submittal.



Wright-Pierce team members typically participate through all phases of a project to ensure continuity, effective implementation of original concepts, and overall success.



Experience: 34 years
Joined Firm: 2001
Professional Licenses: NY, CT, ME, MA, PA, RI

Principal-in-Charge & Project Manager: Christopher Pierce, PE

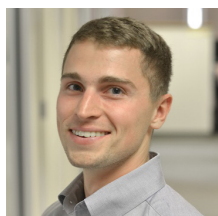
Chris will serve as Principal-in-Charge and Project Manager for this contract. He will be responsible for acting as the firm's authorized representative in negotiations and for ensuring contractual obligations are met. Additionally, Chris will be the primary point of contact for communications with the City of Poughkeepsie. He will be responsible for coordinating the technical efforts of the project team and for monitoring schedule and budget compliance. Chris leads the firm's Southern New England/New York Wastewater Group. His responsibilities include studies, evaluations, facilities planning, coordination with regulatory agencies, design, construction administration, start-up, and operational assistance of wastewater collection, pumping and treatment facility projects.



Experience: 23 years
Joined Firm: 2004
Professional License: CT, MA, FL

Technical Advisor: Dennis Dievert, Jr., PE

Dennis will serve as Technical Advisor, providing technical advice to the project team and reviews of interim technical documents. He will also assist with ensuring our QA/QC program is implemented and will be a QC reviewer. Dennis leads the firm's Western Massachusetts/Connecticut Wastewater Group. With two decades of experience, his expertise is in a wide variety of wastewater fields including wastewater treatment, odor control, residuals management, collection systems, and pump stations.



Experience: 11 years
Joined Firm: 2013
Professional License: NY, CT

Lead Project Engineer: William Edgerton, PE

Will is a Lead Project Engineer in the Wastewater Practice Group at Wright-Pierce and will serve as Lead Project Engineer for this project. He will assist the Project Manager by leading the execution of designs, including technical calculations and development of plans and specifications. Will has experience with wastewater treatment projects, wastewater collection projects, water transmission system projects, and water system planning including wastewater and drinking water sample collection, wastewater treatment design, wastewater treatment studies, water and wastewater construction administration, construction inspection, project permitting, and project coordination.



Experience: 2 years
Joined Firm: 2022
Professional License: NYS EI

Project Engineer: Krista Griego, EIT

Krista will serve as a Project Engineer for this wastewater treatment clarifier project. She will assist the project team with the execution of designs. Krista is an engineer in Wright-Pierce's Wastewater Group and has a background in environmental and sustainable engineering and environmental science. Krista has experience working on municipal and industrial wastewater treatment upgrades, pump station design, headworks analysis, water main replacement, and lead service line inventory.



Experience: 5 years
Joined Firm: 2023
Professional License: NYS IE

Project Engineer: Franklin Mead, IE

Franklin will serve as a Project Engineer for this wastewater treatment clarifier project. He will assist the project team with the execution of designs. Franklin is a Project Engineer in Wright-Pierce's wastewater group in our Clifton Park, NY, office. He has a background in Civil and Environmental Engineering. He has experience with wastewater treatment, wastewater conveyance, and sewage lift station design. He also has experience in water distribution systems and pump station projects. His work has included site plan review, manhole inspections and inventory, construction administration, construction inspection, and project coordination.



Experience: 21 years
Joined Firm: 2021
Professional License: NY, CT, ME, MA, NH, RI, VT, VA, GA, FL LA

Structural Engineer: Ryan Cyr, PE

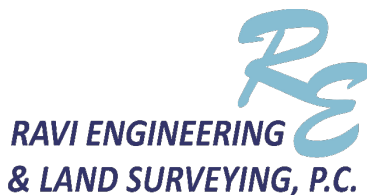
Ryan will serve as the Structural Engineer for this contract. In this role, he will assist the Project Manager and project engineers with any structural aspects of design, including technical calculations and the development of plans and specifications. Ryan is a seasoned structural engineer in the Building Design Practice Group. He has in-depth experience designing wastewater, water, municipal, and industrial facilities. His expertise includes structural steel, reinforced concrete, reinforced masonry, and wood-framed structures.



Experience: 35 years
Joined Firm: 2001
Professional Licenses: NY, ME, NH,
 MA, CT, VT, FL, CO, TX

Electrical Engineer: Christopher Abell, PE

Chris will serve as the Electrical Engineer for this contract. He will be responsible for the execution of any electrical aspects of design, including technical calculations and the development of plans and specifications. Chris is an Electrical Engineer at Wright-Pierce, working with the firm's Building Design Practice Group. He has worked on numerous wastewater treatment facility upgrades, pump station upgrades, and water treatment plant upgrades.



Field Investigations: Ravi Engineering & Land Surveying

Ravi Engineering's focus is on providing state-of-the-art structural, transportation, environmental and geotechnical engineering services, as well as construction inspection and land surveying and they are committed to providing technically sound, custom solutions to clients. At RE&LS, they strive to exceed expectations for responsiveness, efficiency, and timeliness in delivery of services. They are a certified MBE consulting firm.



Field Investigations: JKMuir, LLC

JKMuir provides practical energy and sustainability management strategies that lower operating costs, decrease greenhouse gas emissions, and integrate sustainability goals with public infrastructure needs. JKMuir has worked closely with state and utility incentive and grant programs to obtain significant funding for infrastructure improvement projects in addition to implementing revenue generation through energy asset management. JKMuir has a successful track record of reducing electrical consumption, providing guidance on behind the meter and renewable technology incorporation, and maximizing funding sources available for energy projects.



Electrical Engineering: Jade Stone Engineering

Jade Stone Engineering (JSE) is a woman-owned small business (NYS certified WBE engineering firm) founded in January of 2012. The firm focuses specifically on instrumentation/controls engineering, mechanical, electrical, and plumbing. The principals at JSE built the company on the philosophy of on-site engineering. The on-site philosophy emphasizes an involved, pro-active approach to project design- from the beginning to end- that yields both high levels of client satisfaction as well as successful projects.

3

Wastewater Infrastructure Experience

Throughout most of Wright-Pierce's history, wastewater engineering services have been a mainstay of our company. We are proud of our record in wastewater innovation and have won numerous Engineering Excellence awards for our wastewater treatment projects.

We have designed more than 200 new or upgraded wastewater treatment plants. Many of these projects have included biological nutrient (nitrogen and phosphorus) removal; headworks; primary settling tanks; secondary clarifiers; fine-bubble aeration systems; effluent filtration conversion from gaseous chlorination and dechlorination systems to liquid chemical systems; ultraviolet (UV) disinfection; sludge handling, dewatering and digestion, and SCADA.

Project Funding Assistance & Compliance Experience

Wright-Pierce has considerable experience in developing cost-effective engineering solutions and investigating funding options to maximize the use of state and federal grants and low-interest loans. We routinely present clients with viable funding and financing options, with the advantages and disadvantages of each alternative, so that our clients can make informed decisions.

We are intimately familiar with eligibility, application, and administration requirements of funding programs and understand how to present a project to maximize grant funding. We have assisted our clients in obtaining well in excess of \$100 million in grant and loan financing from USDA Rural Development (RD), Community Development Block Grant funding programs (CDBG), Economic Development Administration (EDA), State and Tribal Assistance Grants (STAG), and State Revolving Loan Funds (SRF) for a variety of projects.

MBE and WBE Participation Goals

Wright-Pierce has completed many projects that utilized state and federal funds with participation goals for Disadvantaged Business Enterprises (DBE). To meet and often exceed participation goals, we have developed good working relationships with a variety of local Minority Business Enterprise (MBE) and Woman Business Enterprise (WBE). These firms act as an extension of our own staff, adding value to our team. Some recent examples of projects involving MBE/WBE participation, and the firms involved include:

Village of Tivoli, NY WWTP Upgrade

- **Ravi Engineering & Land Surveying, PC**
- Popli Design Group
- Atlantic Testing Laboratories, Ltd.
- Envirospec Engineering, PLLC

City of Glens Falls, NY WWTP Upgrade

- **Ravi Engineering & Land Surveying, PC**
- **JKMuir, LLC.**
- Atlantic Testing Laboratories, Ltd.
- Matterscan, LLC.

Onondaga County, NY Upgrades for two WWTPs

- **Jade Stone Engineering, PLLC**
- **Ravi Engineering & Land Surveying, PC**
- **JKMuir, LLC.**
- Atlantic Testing Laboratories, Ltd.
- Popli Design Group
- Envirospec Engineering, PLLC
- EYW Companies



Projects Similar to Poughkeepsie's Needs

To demonstrate our experience, we have selected the following projects similar in scope and size to Poughkeepsie's secondary clarifier project. Key members of our proposed team have been directly involved in the implementation of these projects, better enabling Wright-Pierce to apply our experience and expertise to the City's benefit.

Additionally, we have included client references for each project listed. These contacts are familiar with Wright-Pierce, know our work ethic, and can speak to the services we provide.

1. Saratoga County, NY – Secondary Clarifier Upgrades
2. Stamford, CT – Clarifier Upgrades
3. Farmington, CT – WWTF Upgrades
4. Mattabassett Water District, CT – WWTF Plant Upgrades
5. Manchester, CT – WWTF Upgrades



Secondary Clarifier Upgrades

Saratoga County, New York



Saratoga County Sewer District (SCSD) #1 is responsible for the operation, maintenance, and long-term reliability of a 43 million gallon per day (MGD) wastewater treatment plant (WWTP). Although the WWTP underwent a significant upgrade in 2010, many components date back to the 1970s, including three original secondary clarifiers and components of the electrical distribution system. Wright-Pierce was selected to complete secondary clarifier and electrical upgrades. A key design consideration for this project is construction sequencing, as the WWTF must maintain forward flow of sewage entering the facility and continue to meet effluent permit requirements.

The project included comprehensive field-testing of each secondary clarifiers, computational fluid dynamic (CFD) modeling, and replacement and modification of the clarifier mechanisms. The project also includes replacement of 20 of the manually actuated sluice gates dating to the original upgrade.

The existing plant's power consists of two incoming 800-amp feeders from separate transformers. These feed two separate 4.16 kV busses with tie breaker which feed various transformers around the facility. As part of the project, these transformers and existing MCCs are being replaced. Two new 480-volt generators will also be installed to provide backup power to the critical portions of the facility.

Client Contact

Saratoga County

Sewer District #1

50 West High Street
Ballston Spa, NY 12020

Dan Rourke, PE

Executive Director

518.664.7396

drourke@saratogacountyny.gov

Highlights

- Clarifier configuration
- Flow distribution
- Deflocculation
- Gate analysis
- Electrical distribution equipment and SCADA network analysis
- Maintaining plant operations

Dates

Design: 2021

Construction: 2023 – 2025 (est.)

Key Personnel

Chris Pierce, Will Edgerton, Ryan Cyr

One of the most challenging parts of replacing transformers and MCCs at an existing WWTP is construction sequencing. A key design consideration for this project will be sequencing as the WWTP must maintain forward flow of sewage entering the facility and must always continue to meet effluent permit requirements.

Construction sequencing will allow the plant to maintain operations and meet effluent permit requirements while the upgrades are performed.

Clarifier Upgrades

Stamford, Connecticut



The Stamford Water Pollution Control Facility (WPCF) was originally constructed in the 1970s with three secondary clarifiers with draft tube mechanisms. A fourth secondary clarifier with a spiral blade mechanism was added in 2004. The WPCF upgraded two of the original clarifiers to spiral blade mechanisms, but the third clarifier still operated with the original draft tube mechanism which had reached its expected useful life. The WPCF wanted to upgrade the equipment for process reliability and to match the other three clarifiers.

The two upgraded clarifiers contained RAS sludge adapters. WPCF staff suspected that these adapters were leaking but couldn't be accessed for inspection. Wright-Pierce identified an upgrade that involved coring through the bottom of the clarifier base slab to access the RAS pipe and eliminated the need for the adapter ring.

The design was completed and the project has recently bid. Construction is expected to be complete in 2025.

Client Contact

Stamford Water Pollution Control Authority (WPCA)

111 Harbor View Avenue, Bldg. #11
Stamford, CT 06902

William Brink, PE

Executive Director
203.977.5809

wbrink@stamfordct.gov

Highlights

- Replacement of existing draft-tube clarifier mechanism with new spiral blade mechanism
- Core-drill through tank base slab to connect to RAS piping instead of using sludge adapter ring.

Dates

Preliminary Design: 2023-2024

Final Design: 2024

Construction: 2024 – 2025

Key Personnel

Chris Pierce, Will Edgerton, Dennis Dievert

Wright-Pierce upgraded the WPCF's raw sewage pumps, mechanical bar screens, septage receiving, odor control system, and existing aeration system resulting in reduced energy consumption and methanol usage.

Water Pollution Control Facility Upgrades

Farmington, Connecticut



Wright-Pierce conducted a comprehensive wastewater facilities evaluation of the Farmington WPCF, including converting their existing aeration tanks, and the addition of a third aeration tank, to allow operation in either an MLE or A2O process for biological phosphorus removal. The existing system aeration tanks included mechanical surface aerators that were energy inefficient and required significant freeboard in the aeration tanks.

Wright-Pierce designed a comprehensive upgrade to the WPCF that included replacing the mechanical aerators with a new fine bubble diffused aeration system which allowed raising the water surface elevation by more than two feet. This also allowed raising the water surface elevation in the two existing secondary clarifiers and constructing a new secondary clarifier to meet future flows. New draft tube sludge collection mechanisms were installed in each of the three secondary clarifiers.

Client Contact

Town of Farmington

1 Monteith Drive
Farmington, CT 06032

Russell Arnold, Jr, PE

Director of Public Works/Town Engineer
860.675.2305

arnoldr@farmington-ct.org

Highlights

- Expanded secondary treatment
- New fine bubble aeration system
- New hybrid screw compressor blowers for energy-efficient aeration
- New dissolved oxygen control system
- Installation of a new state-of-the-art UV system with modulating sluice gates for flow control
- Solutions included construction of third aeration tank and secondary clarifier

Dates

Preliminary Design: 2013 – 2014

Final Design: 2014 – 2015

Construction: 2016 – 2019

Key Personnel

Chris Pierce, Dennis Dievert, Will Edgerton, JKMuir, LLC.

Wright-Pierce worked with the Town and contractor to develop construction sequencing to maintain standby power while the new system was being installed.

Wastewater Treatment Facility Upgrade

Cromwell, Connecticut



A 2004 wastewater facilities plan completed by another consultant evaluated treatment alternatives to achieve compliance with stringent nitrogen discharge requirements as well as other upgrades required for this aging facility to handle peak flows of up to 110 MGD. Wright-Pierce was hired to redesign this facility based on our value engineering recommendations and updated facilities plan design concepts, which **saved approximately \$15 million in capital costs over the 2004 plan.**

Wright-Pierce provided full engineering services, including regulatory and funding assistance, for the comprehensive upgrades to the regional WPCF that included two new concrete aeration tanks and two new 120-foot diameter spiral blade secondary clarifiers with RAS and WAS pumping facility; new effluent pump station; new sludge dewatering system with three new centrifuges; new odor control systems; 4-stage Bardenpho process and innovative side-stream reactor; electrical, SCADA, and I&C system upgrades; administrative and maintenance buildings expansions; upgraded headworks with new fine screens and improved grit removal; complete new solids handling facilities; stormwater system analysis and design; and innovative piping configurations to address hydraulic bottlenecks, accommodate higher flows, and facilitate construction sequencing.

These upgrades **increased treatment capacity by 75%** from 20 MGD to 35 MGD, with peak flow capacity to 110 MGD.

Client Contact

The Mattabasset District

245 Main Street
Cromwell, CT 06416

Arthur Simonian, PE

Executive Director
860.635.5550

asimonian@mattdist.org

Highlights

- Facilitated regulatory approval process for new SSI
- Innovative piping configurations to address hydraulic bottlenecks and accommodate higher flows
- Challenging site constraints
- Extensive excavations and dewatering
- Aggressive design schedule
- 4-stage Bardenpho to achieve TN limit of 3.4 mg/l
- Reuse of existing structures

Dates

Preliminary Design: 2009 – 2010
Final Design: 2010 – 2012
Construction: 2012 – 2015

Key Personnel

Chris Pierce, Dennis Dievert, Will Edgerton, Chris Abell, JKMuir, LLC.



**ACEC National Engineering
Excellence Award Winner**



**ENR Best Regional
Project Award**

Energy-efficient improvements on this project qualified for more than \$1 million in incentive rebates from Connecticut Light & Power (now Eversource).

Water Pollution Control Facility Upgrade

Manchester, Connecticut



Wright-Pierce performed complete engineering services (evaluation, design, construction administration) for the comprehensive \$45M upgrade to Manchester's 8.3 MGD (average) and 20 MGD (peak) Hockanum River Water Pollution Control Facility (HRWPCF), including:

- BioWin® modeling to evaluate treatment process
- Rehabilitation of the pretreatment system including the raw wastewater pump station; headworks; and primary clarifiers
- Conversion of the process into a four-stage Bardenpho process to achieve strict effluent limits using hyperbolic mixers/aerators, four new 100-hp high speed turbo blowers, and D.O. control system
- Tertiary ballasted flocculation phosphorus removal system
- Complete new solids handling building with new HVAC, electrical, I&C, and SCADA systems for sludge thickening and dewatering
- New gravity thickener with cover and vented to odor control
- Two rotary drum thickeners for secondary sludge thickening
- Two centrifuges (26+% solids) to replace aging belt filter presses
- New carbon-based odor control system
- New biofilter odor control system utilizing seashells as the filter media as well as a source of nutrients and alkalinity
- New waste sludge pumping and piping system
- Comprehensive upgrade of the electrical and I&C systems, including a new 1,600 kW generator

Client Contact

Town of Manchester

Water and Sewer Department
125 Spring Street
Manchester, CT 06045

Daniel Carrigan

Superintendent
860.647.3213
dcarrigan@manchesterct.gov

Highlights

- Upgraded facility with modern energy efficient equipment
- New aeration system including high-speed turbo blowers, hyperbolic mixer/aerators, and dissolved oxygen system
- Four-stage Bardenpho process
- Tertiary phosphorus removal
- Sludge thickening and dewatering systems
- New 1,600kW standby power generator and transfer switch

Dates

Preliminary Design: 2009 - 2010

Final Design: 2010 - 2011

Construction: 2011 - 2015

Key Personnel

Chris Pierce, Dennis Dievert, Will Edgerton, JKMuir, LLC.

The system is online and performing well. The energy efficiency associated with the turbo blowers and the dissolved oxygen control system qualified for an energy incentive of \$380,000 from Connecticut Light & Power (now Eversource).

4

Project Understanding

The City of Poughkeepsie is implementing a series of capital improvements at their water pollution control facility (WPCF). A recent project included replacement of the secondary clarifier mechanisms with new spiral blade mechanisms. The first mechanism was replaced, and the clarifier was put back into service. Following startup, Veolia noted reduced performance with the new clarifier mechanism. The manufacturer initially evaluated and determined that the equipment performed well at the flows specified. However, subsequent evaluations determined that the specified flows were lower than the actual flows experienced at the facility. It was also determined that the density current baffles in this clarifier were relocated due to the size of the new equipment. The modified location of the baffles likely reduced their effectiveness.

Therefore, the city is seeking to retain an engineering consultant to develop drawings and technical specifications to replace the secondary clarifier equipment with new mechanisms sized to meet the original design flows for the Poughkeepsie WPCF. We understand that this work will be performed under the current General Construction contract as a change order and that bid documents are not a part of the scope.

Key Issues

Wright-Pierce worked with Veolia staff to evaluate the performance of the existing secondary clarifier mechanism as well as the sizing of the secondary clarifiers. Based on this evaluation and discussions with the clarifier equipment manufacturer, it was recommended that the existing clarifier equipment be replaced in kind. This equipment has been performing well since the plant was constructed but needs to be replaced due to its age. Some of the key issues to be determined during the development of specifications and drawings and procurement of the equipment have been identified below.

Hydraulic Capacity

As noted in the evaluation, the design annual average flow of the Poughkeepsie WPCF is 8 mgd. It was also



Modified secondary clarifier mechanism and relocated density current baffles.

designed to hydraulically pass 18 mgd through a single train. The equipment needs to be designed to allow for proper performance under these flow conditions with both trains in service but must also pass 18 mgd with one clarifier offline without causing significant surcharging upstream.

RAS Piping

Modifications to the RAS piping in the west clarifier were made as part of the current project. This RAS pipe will need to be modified for the new clarifier mechanisms. The RAS piping within the center column of the east clarifier should also be replaced as part of the project.

Density Current Baffles

The existing clarifiers at the Poughkeepsie WPCF are very shallow by current design standards. Density current baffles were added as part of a previous project. When the west secondary clarifier mechanism was replaced, the rake arm trusses did not fit below the density current baffles. Therefore, the baffles were raised to allow the truss arms to properly rotate. However, the modified location likely resulted in a significant reduction in the effectiveness of these baffles.

Close coordination with the equipment manufacturer should occur during the design phase to provide equipment that will allow these baffles to be moved back to their original location.

Project Approach

Wright-Pierce will work closely with the city to develop a specific scope and fee for this project. Based on the information presented in the RFQ, we have developed this preliminary scope of services.

Scope of Services

The following scope follows the tasks identified in the RFQ.

Task 1 – Develop Drawings and Technical Specifications

As part of this task, Wright-Pierce would develop three drawings including:

- Secondary Clarifier Demolition Plans and Sections
- Secondary Clarifier Modification Plan and Sections
- Secondary Clarifier Details

In addition, we would develop one technical specification for the secondary clarifier equipment. As this work will be performed as a change order under a current contract, it is our understanding that all other existing drawings and specifications are still part of the contract and no additional work for things such as electrical, instrumentation, or concrete rehabilitation are part of this scope.

Wright-Pierce will work with City staff, Veolia, the General Contractor, and the equipment manufacturer to develop drafts of these documents and submit them to the City and General Contractor for review and comment. Once comments have been received and incorporated, a request for proposals will be issued to the General Contractor to request pricing for the proposed modifications to the original contract.

Task 2- Engineering Services during Procurement

Once the General Contractor has submitted a Change Order Proposal and the City has accepted and issued a change order, the General Contractor will be required to provide submittals for the proposed equipment. Wright-Pierce will review the proposed submittals for general conformance with the contract documents.

Task 3-Engineering during Construction Phase

Wright-Pierce will provide engineering services during construction that will include:

- Attendance at a pre-installation meeting with Veolia, the City, and the General Contractor.
- Responding to up to three RFIs
- Up to two site visits to observe progress of the work.
- Up to two site visits to observe the startup and testing of each new clarifier mechanism and to identify punch list items.
- A final site visit to certify completed construction in accordance with the contract documents and to verify that punch list items have been completed.
- It is unclear if full-time construction observation is required. We have budgeted a total of two months of full-time on-site observation at a total of 44 hours per week for 8 weeks. This work may not be continuous and anticipates up to 4 weeks per clarifier. The required observation would be negotiated with the City once a consultant is selected.



5

Ready to ‘hit the ground running’

The ability to perform is judged on a firm’s relevant experience on similar projects, the qualifications and availability of the staff assigned to the project, the overall expertise of the firm, and the firm’s commitment to the project. All these are key criteria and factors to judge a firm’s ability to complete the work in a timely fashion. We have the team depth and redundancy built into the project team to meet the required deadlines.

The work noted below is scheduled to begin as soon as an authorization to proceed is issued.

Proposed Schedule

TASKS	2024				2025												2026												2027													
	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D		
Engineering Design/Document Preparation/Reviews																																										
Change Order Proposal/Pricing																																										
Acceptance by City																																										
Submittals & Procurement – Equipment																																										
Construction																																										
Testing and Certifications																																										



Required Forms

Certificates of Insurance
Bid Addendum Acknowledgement
CS-1
CS-2
Iran Divestment Certification
NYSEFC: W/MBE Utilization Plan
NYSEFC: AIS Contractor Certification
NYSEFC: Lobbying Certification



CJOHNSON

4/8/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Ames & Gough 859 Willard Street Suite 320 Quincy, MA 02169		CONTACT NAME: PHONE (A/C, No, Ext): (617) 328-6555 FAX (A/C, No): (617) 328-6888 E-MAIL ADDRESS: boston@amesgough.com	
INSURED Wright- Pierce Engineering Consultants, PC 11 Bowdoin Mill Island Suite 140 Topsham, ME 04086		INSURER(S) AFFORDING COVERAGE	
		INSURER A : Berkshire Hathaway Specialty Insurance Company (A++XV)	
		NAIC # 22276	
		INSURER B :	
		INSURER C :	
		INSURER D :	
		INSURER E :	
INSURER F :			

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE				ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS			
	COMMERCIAL GENERAL LIABILITY									EACH OCCURRENCE	\$		
	☐	CLAIMS-MADE		☐						OCCUR	DAMAGE TO RENTED PREMISES (Ea occurrence)	\$	
	☐									MED EXP (Any one person)	\$		
	☐									PERSONAL & ADV INJURY	\$		
	GEN'L AGGREGATE LIMIT APPLIES PER:									GENERAL AGGREGATE	\$		
	☐	POLICY	☐	PRO-JECT						☐	LOC	PRODUCTS - COMP/OP AGG	\$
	OTHER:										\$		
	AUTOMOBILE LIABILITY									COMBINED SINGLE LIMIT (Ea accident)	\$		
	☐	ANY AUTO OWNED AUTOS ONLY		☐						SCHEDULED AUTOS	BODILY INJURY (Per person)	\$	
	☐	HIRED AUTOS ONLY		☐						NON-OWNED AUTOS ONLY	BODILY INJURY (Per accident)	\$	
	☐									PROPERTY DAMAGE (Per accident)	\$		
											\$		
	☐	UMBRELLA LIAB		☐	OCCUR					EACH OCCURRENCE	\$		
	☐	EXCESS LIAB		☐	CLAIMS-MADE					AGGREGATE	\$		
	☐	DED	☐	RETENTION \$							\$		
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				N / A					☐ PER STATUTE	☐ OTH-ER		
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) ☐ Y / N									E.L. EACH ACCIDENT	\$		
	If yes, describe under DESCRIPTION OF OPERATIONS below									E.L. DISEASE - EA EMPLOYEE	\$		
										E.L. DISEASE - POLICY LIMIT	\$		
A	Professional Liab.					47EPP31360304	1/1/2024	1/1/2025	Per Claim Limit	5,000,000			
A						47EPP31360304	1/1/2024	1/1/2025	Aggregate Limit	5,000,000			

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
All Coverages are in accordance with the policy terms and conditions.

For Proposals Only

CERTIFICATE HOLDER		CANCELLATION	
FOR PROPOSALS ONLY		SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.	
		AUTHORIZED REPRESENTATIVE <i>gared maxwell</i>	



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

1/2/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION** IS **WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Greyling Ins. Brokerage/EPIC 3780 Mansell Road, Suite 370 Alpharetta GA 30022	CONTACT NAME: Mitchell Walck PHONE (A/C, No, Ext): 470.582.9324 E-MAIL ADDRESS: greylingcerts@greyling.com	FAX (A/C, No): 470.582.9324
INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A : Hartford Underwriters Insurance Company		30104
INSURER B : Nutmeg Insurance Company		39608
INSURER C : Hartford Fire Insurance Company		19682
INSURER D :		
INSURER E :		
INSURER F :		

COVERAGES**CERTIFICATE NUMBER:** 9139016**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PRO-JECT ☒ LOC ☐ OTHER:			20SBWAP6AAL	1/1/2024	1/1/2025	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
B	☒ AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☒ HIRED AUTOS ONLY ☒ NON-OWNED AUTOS ONLY			20UEGEI3499DD	1/1/2024	1/1/2025	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	☒ UMBRELLA LIAB ☒ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE ☐ DED ☒ RETENTION \$ 10,000			20SBWAP6AAL	1/1/2024	1/1/2025	EACH OCCURRENCE \$ 10,000,000 AGGREGATE \$ 10,000,000 \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	☐ Y ☒ N	N/A	20WEGAP5YF8	1/1/2024	1/1/2025	☒ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER**CANCELLATION**

Sample Certificate

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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Engineering Services Secondary Clarifiers
RFQ-COP-08-24-03

Bid Addendum Acknowledgement Sheet

All addenda, the receipts of which are hereby acknowledged by inserting the dates of each addendum next to the appropriate numbers, have been included in this Bid and are listed below. Failure to properly acknowledge the addenda as set forth below may result in rejection of the bid.

Receipt of Addendum:

Addendum No. 1	September 13, 2024
Addendum No. 2	September 16, 2024
Addendum No. 3	
Addendum No. 4	
Addendum No. 5	
Addendum No. 6	
Addendum No. 7	

Vendor: _____



CITY OF POUGHKEEPSIE POUGHKEEPSIE, NEW YORK

RFQ-COP-08-24-03 ENGINEERING SERVICES FOR SECONDARY CLARIFIERS FOR THE WPCP IMPROVEMENT PROJECT

ADDENDUM NO. 1

September 13, 2024

This addendum contains Questions and Answers

Our firm is preparing a response to the abovementioned RFQ and have two requests for clarification to ensure our submission aligns with your requirements:

1. Page 2 of the RFQ states that bidders are required to execute a non-collusion bidding certificate. Additionally, page 11 of the RFQ states that there are additional forms to be submitted, (MWBE Utilization Plan, AIS Certification, Lobbying Certification, and Iran Divestment Certification).

Could you please clarify what required forms should be included in our submission?

Response: These forms are all requirements for contracts using NYSEFC funds.

We recognize that this RFQ involves provision of professional engineering services, not construction. However, the following documents are required to be filled out and submitted with your proposal as described in the NYSEFC Equivalency package attached to the RFQ.:

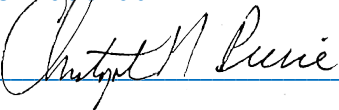
- ***CS-1***
- ***CS-2-Non-Collusion Bidding Certificate***
- ***Iran Divestment Certification***
- ***EFC Documents***
 - ***MWBE Utilization Plan***
 - ***MWBE Waiver-If applicable***
 - ***AIS Certification***
 - ***Lobbying Certification-required***

2. It is our understanding that this RFQ is qualifications-based, however on page 10 of the RFQ under “Evaluation Criteria and Scoring” it states to please include cost proposals in a separate envelope. Can you please confirm if we need to include a cost proposal with our submission?

Response: Please note that a cost proposal is requested to be submitted with the proposal in a sealed envelope. The cost proposal will not be scored or utilized for the qualifications ranking of firms. The cost proposal may be utilized to assist with negotiations with the most qualified firm to expedite the contract award process since time is of the essence in carrying out this work.

Please acknowledge receipt of this addendum by including this receipt with your bid package!

Receipt of Addendum# 1

Signed:  _____

Company Name: _____



**CITY OF POUGHKEEPSIE
POUGHKEEPSIE, NEW YORK**

**RFQ-COP-08-24-03
ENGINEERING SERVICES FOR SECONDARY CLARIFIERS
FOR THE WPCP IMPROVEMENT PROJECT**

ADDENDUM NO. 2

September 16, 2024

This addendum contains Required forms not included with RFQ:

1. CS 1
2. CS 2
3. Iran Divestment Certification
4. Addendum Acknowledgement Form

Please acknowledge receipt of this addendum by including this receipt with your bid package!

Receipt of Addendum# 2

Signed:

Company Name: Wright-Pierce Engineering Consultants, PC

CITY OF POUGHKEEPSIE

Purchasing Division

Finance Department

Bid submitted by: Wright-Pierce Engineering Consultants, PC

--

The undersigned hereby designates as his office to which such notice of acceptance may be mailed, telegraphed, or delivered:

6 Executive Park Drive, Suite B

--

The vendor hereby agrees to the provisions of Section 103-a of the General Municipal Law which requires that upon the refusal of a person, when called before a Grand Jury to testify concerning any transaction, or contract had with the State, any political subdivision thereof, a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract,

(a) "such person, and any firm partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or any public department, agency or official thereof, for goods, work or services, for a period of five years after such refusal, and

(b) any and all contracts made with any municipal corporation or any public department, agency or official thereof, since the effective date of this law, by such person, and by any firm, partnership or corporation of which he is a member, partner, director or officer may be cancelled or terminated by the municipal corporation without incurring any penalty or damages on account of such cancellation or termination, but any moneys owing by the municipal corporation for goods delivered or work done prior to the cancellation or termination shall be paid."

The vendor does hereby certify that he or it is under no such impediment or disqualification from bidding created under Section 103-b of the General Municipal Law of the State of New York.

CS-1

As required by Section 139-d of the New York State Finance Law, the bidder certifies that:

- Signed 
- By Christopher N. Pierce, Vice President
(President)

Dated 9/17/2024

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the City receive information that a Bidder/Contractor is in violation of the above-referenced certification, the County will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the County shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

The County reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, Christopher N. Pierce, PE, being duly sworn, deposes and says that he/she is the Sr. Vice President of the Wright-Pierce Engineering Consultants, PC. Corporation and that neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List


SIGNED

SWORN to before me this

17 day of September 2024

Notary Public: 





Environmental Facilities Corporation

NYS Environmental Facilities Corporation Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

Instructions for Contractors & Service Providers:

Contractors and Service Providers must complete Sections 2 and 3. **Submit the completed, signed (electronic signature box checked and dated) form to the Recipient's Minority Business Officer (MBO) no later than the date of contract execution.** Incomplete forms will be found deficient. If more than 10 subcontractors are used, additional pages for Section 3 can be found on EFC's website.

If the prime contract is being performed by the parties to a Joint Venture, Teaming Agreement, or Mentor-Protégé Agreement that includes a certified MWBE, please contact EFC for assistance.

MWBE firms must be certified by the NYS Empire State Development Corporation (ESD) in order to be counted towards satisfaction of MWBE participation goals. The utilization of certified MWBEs for non-commercially useful functions may not be counted towards utilization of certified MWBEs in the Utilization Plan. Please note whether a firm is serving as a broker or supplier on the contract. A broker is denoted by NAICS code 425120 and is designated as a broker in [ESD's MWBE Directory](#). A supplier is denoted by a NAICS code beginning with 423 or 424, or a NIGP code that does not begin with the number 9 and is designated as a supplier in ESD's MWBE Directory. If a firm is serving as a broker, please additionally provide the percentage of the broker's commission on the contract.

See the [Mandatory Terms and Conditions](#) or consult your designated MBO for further guidance.

Instructions for Minority Business Officers (MBO):

The MBO must complete Section 1. Email the completed, signed (electronic signature box checked and dated) form to your EFC Program Compliance Specialist.

The subject heading of the email to the EFC Program Compliance Specialist should follow the format "UP, Project Number, Contractor." EFC will review the Utilization Plan and email the MBO an acceptance or denial.

**NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan**

SECTION 1: MUNICIPAL INFORMATION			
Recipient/Municipality:		County:	
Project No.:	GIGP No.:	Contract ID:	Registration No. (NYC only):
Minority Business Officer:		Email:	Phone #:
Address of MBO:			
Electronic Signature of MBO: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.			Date:

SECTION 2: PRIME CONTRACTOR / SERVICE PROVIDER INFORMATION			
Firm Name:		Contract Type: ☐ Construction ☐ Other Services	
Prime Firm is Certified as: ☐ MBE ☐ WBE ☒ N/A ☐ Other: If certified, please include Prime information in Section 3. If dual certified, you must select either MBE <u>or</u> WBE.			
Address:		Phone #:	Fed. Employer ID #:
Description of Work:		Email:	
Award Date:	Start Date:	Completion Date:	MWBE GOAL Total
Total Contract Amount: \$ TBD MWBE Eligible Contract Amount: \$ TBD (MWBE Goals are applied to this amount and includes all change orders, amendments, & specialty waivers)			Total: 20 % \$
			PROPOSED MWBE Participation Total: TBD % \$

**NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan**

SECTION 3: MWBE SUBCONTRACTOR INFORMATION			
This Submittal is:	☐ The First/Original Utilization Plan ☐ Revised Utilization Plan #:		
NYS Certified M/WBE Subcontractor Info		Contract Amount:	For EFC Use:
Business Name: JKMuir, LLC.	Fed. Employer ID#:		
Address: 2275 Silas Deane Hwy, Rocky Hill, CT 06067	Phone #:		
Scope of Work: Field investigation services	Email:		
Select Only One: ☐ MBE ☒ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$ TBD			
Business Name: Jade Stone Engineering	Fed. Employer ID#:		
Address: 444 Vanduzee Street, Watertown, NY 13601	Phone #: 860-249-0989		
Scope of Work: Electrical engineering	Email:		
Select Only One: ☐ MBE ☒ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$ TBD			
Business Name: Ravi Engineering & Land Surveying, PC	Fed. Employer ID#:		
Address: 2110 S Clinton Ave #1, Rochester, NY 14618	Phone #:		
Scope of Work: Field Investigation Services	Email:		
Select Only One: ☒ MBE ☐ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$ TBD			
Business Name:	Fed. Employer ID#:		
Address:	Phone #:		
Scope of Work:	Email:		
Select Only One: ☐ MBE ☐ WBE ☐ Other:	Start Date:		
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A	Completion Date:		
Full Contract Amount: \$			

**NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan**

SECTION 3: M/WBE SUBCONTRACTOR INFORMATION continued			
Business Name:		Fed. Employer ID#:	
Address:		Phone #:	
Scope of Work:		Email:	
Select Only One: ☐ MBE ☐ WBE ☐ Other:		Start Date:	
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A		Completion Date:	
Full Contract Amount: \$			
Business Name:		Fed. Employer ID#:	
Address:		Phone #:	
Scope of Work:		Email:	
Select Only One: ☐ MBE ☐ WBE ☐ Other:		Start Date:	
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A		Completion Date:	
Full Contract Amount: \$			
Business Name:		Fed. Employer ID#:	
Address:		Phone #:	
Scope of Work:		Email:	
Select Only One: ☐ MBE ☐ WBE ☐ Other:		Start Date:	
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A		Completion Date:	
Full Contract Amount: \$			
Business Name:		Fed. Employer ID#:	
Address:		Phone #:	
Scope of Work:		Email:	
Select Only One: ☐ MBE ☐ WBE ☐ Other:		Start Date:	
Select Only One: ☐ Broker % ____ ☐ Supplier ☐ N/A		Completion Date:	
Full Contract Amount: \$			
SIGNATURE			
Electronic Signature of Contractor: ☒ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and that all MWBE subcontractors will perform a commercially useful function. Name (Please Type): Christopher N. Pierce, PE			Date: 9/17/2024



Environmental Facilities Corporation

AIS CONTRACTOR CERTIFICATION
FOR CONSTRUCTION CONTRACTS FUNDED THROUGH
THE NYS CLEAN WATER STATE REVOLVING FUND, OVERFLOW AND STORMWATER GRANTS
OR
THE NYS DRINKING WATER STATE REVOLVING FUND VIA THE
NYS ENVIRONMENTAL FACILITIES CORPORATION

Project Title: _____

Contractor's Name: _____

Contract ID: _____

SRF Project No.: _____

SRF Recipient Name: _____

I certify that the iron and steel products permanently incorporated into the public water system or wastewater treatment works project under this construction contract will be and/or have been produced in the United States, in accordance with the requirements of the United States Environmental Protection Agency and 33 U.S.C. § 1388, 42 U.S.C. § 300j-12(a)(4) and any regulations promulgated thereunder. I will develop and maintain necessary documentation to demonstrate that the iron and steel products permanently incorporated into the project were produced in the United States, and make such documentation available to The New York State Environmental Facilities Corporation or their authorized representatives, upon request.

Signature: _____

Name (print): _____

Title: _____

Date: _____

This does not apply to Wright-Pierce Engineering Consultants, PC as we are not a construction contractor.



Environmental Facilities Corporation

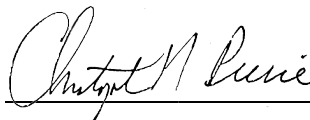
**New York State Environmental Facilities Corporation
CERTIFICATION REGARDING LOBBYING
FOR
CONTRACTS, GRANTS, LOANS, AND
COOPERATIVE AGREEMENTS
40 CFR Part 34**

SRF Project No.: _____
Recipient: City of Poughkeepsie
Project Description: Engineering Services for Fallkill Trunk Sewer Rehabilitation Project

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Signature: 

Name: _____

Title: _____

Company Name: _____

Date: _____

Contract ID: _____

APPENDIX

RESUMES



Christopher N. Pierce, PE

VICE PRESIDENT, S. NEW ENGLAND/NY WASTEWATER GROUP LEADER

Project Assignment: Principal-in-Charge and Project Manager

Education

M.S., Environmental Engineering, University of California at Davis

B.S., Civil Engineering, Syracuse University

Professional Registration

New York
Connecticut
Maine
Massachusetts
Pennsylvania
Rhode Island

Experience

34 Years

Joined Firm

2001

Professional Affiliations

New England Water Environment Association (NEWEA)

Water Environment Federation (WEF)

New York Water Environment Association (NYWEA)

Publications

Pierce, C.N., Hankins, W.D., Emond, M.J., Weaver, E.R., "Manchester's Upgraded Treatment Facility Achieves Low Nutrient Levels" NEWEA Journal, Summer 2016

Pierce, C.N., Hankins, W.D., Bisi, M.J., Bohaboy, C., "Glastonbury's New Treatment Facility Achieves Low Nitrogen Levels without Supplemental Carbon" NEWEA Journal, Summer

Experience Summary

Chris, Vice President, will serve as Principal-in-Charge and Project Manager for this contract. He will be responsible for acting as the firm's authorized representative in negotiations and for ensuring contractual obligations are met. Additionally, Chris will be the primary point of contact for communications with the City of Poughkeepsie. He will be responsible for coordinating the technical efforts of the project team and for monitoring schedule and budget compliance. Chris leads the firm's Southern New England/New York Wastewater Group. His responsibilities include studies, evaluations, facilities planning, coordination with regulatory agencies, design, construction administration, start-up, and operational assistance of wastewater collection, pumping and treatment facility projects. He has more than 30 years of experience in study, design, and construction of wastewater infrastructure projects.

Relevant Project Experience

Municipal Wastewater Treatment

- Clarifier Improvements, Poughkeepsie, NY
- Brewerton and Meadowbrook Limestone Wastewater Treatment Plants Rotary Drums and Odor Control, Onondaga County, NY
- Secondary Clarifier and Electrical Upgrades, Saratoga County Sewer District No. 1, NY
- Wastewater Treatment Facility and Pump Station Upgrade, Tivoli, NY
- Wastewater Treatment Facility Electrical Upgrade, Glens Falls, NY
- Comprehensive Water Pollution Control Facility Upgrade, Danbury, CT
- Comprehensive Water Pollution Control Facility Upgrade, Killingly, CT
- Dewatering Upgrade, Norwalk, CT
- Phosphorus Removal Study, Plymouth, CT
- UV Disinfection System Improvements, Plymouth, CT
- Comprehensive Wastewater Facilities Planning Study, Fairfield, CT
- Comprehensive Water Pollution Control Facility Upgrade, Torrington, CT
- Raw Sewage Pump Station and Septage Receiving Evaluation, Stamford, CT
- Aeration Blower & Dissolved Oxygen Control System Evaluation, Stamford, CT
- Preliminary & Secondary Treatment Improvements, Stamford, CT
- Comprehensive Wastewater Facilities Planning Study, Farmington, CT
- Water Pollution Control Facility Interim Capital Improvements, Farmington, CT
- Comprehensive Water Pollution Control Facility Upgrade, Farmington, CT
- Comprehensive Wastewater Facilities Planning Study, Manchester, CT
- Comprehensive Water Pollution Control Facility Upgrade, Manchester, CT
- Wastewater Diversion System, Stonington, CT
- Phosphorus Removal Study, Bristol, CT

2013

Presentations

Pierce, C.N., Weaver, E.R.,
“Nutrient Removal at
Hockanum River WPCF”
NEWEA Annual Conference,
Boston, Massachusetts,
January 2016

Pierce, C.N., “Sludge
Dewatering in New England,
Types, Trends and Case
Studies” NYWEA Annual
Conference, New York, New
York, February 2014

Pierce, C.N., Bohaboy, C.
“Improved Nitrogen Removal
at Glastonbury WPCF”
NEWEA Annual Conference,
Boston, Massachusetts,
January 2013

Pierce, C.N., “Hockanum
River WPCF Upgrade,
Manchester, CT” NEWEA
Spring Meeting, Newport,
Rhode Island, June 2012

Pierce, C.N., “Planning
Capital Improvements in an
Uncertain Funding
Environment” NEWEA
Annual Conference, Boston,
Massachusetts, January 2007

- Nitrogen Treatment Value Engineering and Hydraulic Analysis Study, Mattabassett District, Cromwell, CT
- Comprehensive Wastewater Treatment Upgrade, Mattabassett District, Cromwell, CT
- Comprehensive Wastewater Treatment Upgrade, Windham, CT
- Comprehensive Wastewater Treatment Upgrade, Glastonbury, CT
- On-Call Wastewater Engineering Services and Evaluation, Montville, CT
- On-Call Wastewater Engineering Services and Evaluation, Waterford, CT
- Wastewater Facilities Planning Study, Killingly, CT
- Instrumentation and Controls and SCADA Evaluation, Norwalk, CT
- Wastewater System Upgrade, Sharon, CT
- Wastewater Facilities Upgrade, YMCA Camp, Colebrook, CT
- Community Wastewater Planning Study, Old Saybrook, CT
- Solids Handling Evaluation, Warwick, RI
- Gravity Thickener Upgrades, Warwick, RI
- Biological Nutrient Removal System Recycle System Evaluation, Warwick, RI

Wastewater Collection

- Sewer System Improvements, Washington County, NY
- Collection System Evaluations, Fairfield, CT
- Collection System Rehabilitation, Fairfield, CT
- Sewer System Improvements, Sharon, CT
- Infiltration/Inflow and Sewer System Evaluation Study, Farmington, CT
- Infiltration/Inflow and Sewer System Evaluation Study, Windham, CT
- Infiltration/Inflow and Sewer System Evaluation Study, Killingly, CT
- Infiltration/Inflow and Sewer System Evaluation Study, Ledyard, CT
- Wastewater Collection System Expansion Evaluation, Vernon, CT

Pump Stations

- On-Call Wastewater Engineering Services and Evaluation, Norwalk, CT
- Pump Station Upgrades, Norwalk, CT
- Easton Turnpike Pump Station and Forcemain Upgrade, Fairfield, CT
- Sammis Street Pump Station and Ann Street Siphon Upgrade, Norwalk, CT
- Hyde Road Pump Station Upgrade, Farmington, CT
- Cider Mill Pump Station Upgrade, Glastonbury, CT
- Nutmeg Lane Pump Station Upgrade, Glastonbury, CT
- Rogers Village Pump Station Upgrade, Killingly, CT

Industrial Wastewater Treatment

- Tertiary Sand Filter Replacement, Corbin Russwin, Berlin, CT
- Industrial Wastewater Treatment Improvements, Chemical Manufacturer, Wallingford, CT
- Industrial Wastewater Permitting, Liquid Plastics Limited, Middletown, CT



Dennis A. Dievert Jr., PE

WESTERN MA/CT WASTEWATER GROUP LEADER

Project Assignment: Technical Advisor

Education

M.S., Environmental
Engineering University of
New Haven

B.S., Chemical Engineering,
University of New Haven

Professional Registration

Connecticut
Florida
Massachusetts

Experience

23 Years

Joined Firm

2001

Professional Affiliations

New England Water
Environment Association
(NEWWA)

Water Environment
Federation (WEF)

Experience Summary

Dennis will serve as Technical Advisor, providing technical advice to the project team and reviews of interim technical documents. He will also assist with ensuring our QA/QC program is implemented and will be a QC reviewer. Dennis leads the firm's Western Massachusetts/Connecticut Wastewater Group. With two decades of experience, his expertise is in a wide variety of wastewater fields including wastewater treatment, odor control, residuals management, collection systems, and pump stations.

Relevant Project Experience

Wastewater Treatment

- Wastewater Treatment Facility Headworks Upgrade, New Bedford, MA
- Wastewater Treatment Facility Centrifuge Installation, Norwalk, CT
- Water Pollution Control Facility Upgrade, Stamford, CT
- Wastewater Treatment Facility Headworks Upgrade, Wallingford, CT
- Comprehensive Wastewater Facilities Planning Study, Fairfield, CT
- Comprehensive Wastewater Facilities Planning Study, Groton, CT
- Water Pollution Control Facility Troubleshooting, South Windsor, CT
- Water Pollution Control Facility Upgrade, Manchester, CT
- Water Pollution Control Facility Upgrade, Glastonbury, CT
- Water Pollution Control Facility Upgrade, Farmington, CT
- Water Pollution Control Facility Upgrade, Torrington, CT
- Comprehensive Wastewater Facilities Planning Study, Waterford, CT
- On-Call Wastewater Engineering Services and Evaluation, Waterford, CT
- Wastewater System Upgrade, Sharon, CT

Wastewater Collection

- Sewer System Improvements, Fairfield, CT
- Sewer and Pump Station Evaluation and Improvements, Stamford, CT
- Sewer Evaluation and Sewer Improvements, South Windsor, CT
- Sewer System Improvements, Sharon, CT
- Infiltration/Inflow Evaluation and SSES, Farmington, CT
- Infiltration/Inflow and Sewer System Evaluation Study, Windham, CT
- Infiltration/Inflow and Sewer System Evaluation Study, Killingly, CT
- Infiltration/Inflow Evaluation Study, Harwinton, CT
- Collection System Improvements, Waterford, CT

Pump Stations

- Pump Station and Force Main Replacement, Fairfield, CT
- Pump Station Upgrades, Norwalk, CT
- Pump Station Asset Management Plan, Norwalk, CT
- Pump Station Asset Management Plan, South Windsor, CT
- Pump Station Replacement, Portland, CT
- Pump Station Upgrades, Glastonbury, CT
- Sewer Interceptor and Pump Stations, New Milford, CT
- Pump Station Upgrades, Waterford, CT

Miscellaneous

- Primary Digester Repairs and Start-Up Assistance, Fairfield, CT
- Sewer System Inventory and GIS Mapping, South Windsor, CT
- Sewer System Inventory and GIS Mapping, Portland, CT
- Sludge Management and Odor Control Study, Torrington, CT
- Regional Grease Pretreatment Study, Torrington, CT
- NPDES Permitting, Canton, CT
- Compost Building Replacement, Fairfield, CT
- Capital Improvements Plan, Waterford, CT
- Contract Operations Assistance, Norwalk, CT
- Town Engineer/WPCA Liaison, Cheshire, CT
- SCADA System Master Plan, Pittsfield, MA
- Cellular Conversion of Remote Sites, Pittsfield, MA
- Phased SCADA System of Water and Wastewater Systems, Pittsfield, MA



Will A. Edgerton, PE

LEAD PROJECT ENGINEER

Project Assignment: Lead Project Engineer

Education

B.S., Civil Engineering,
University of New Hampshire

M.Eng., Environmental
Engineering
University of Hartford

Professional Registration

New York
Connecticut

Experience

11 Years

Joined Firm

2013

Training/Certifications

NASSCO-Certified Inspector

OSHA 10-Hour Certification

Adult CPD/AED, Child CPR,
First Aid Certification

Experience Summary

Will is a Lead Project Engineer in the Wastewater Practice Group at Wright-Pierce and will serve as Lead Project Engineer for this project. He will assist the Project Manager by leading the execution of designs, including technical calculations and development of plans and specifications. Will has experience with wastewater treatment projects, wastewater collection projects, water transmission system projects, and water system planning including manhole inspection, wastewater and drinking water sample collection, sewer review, wastewater treatment design, wastewater treatment studies, water and wastewater construction administration, construction inspection, project permitting, and project coordination.

Relevant Project Experience

Wastewater Treatment

- Secondary Clarifier, Gate Replacement, and Electrical Upgrades, Saratoga County Sewer District #1, Saratoga County, NY
- Tivoli Wastewater Treatment Facility Upgrade, Dutchess County, NY
- Primary Clarifier and Grit Handling Upgrades, New Bedford, MA
- Sludge Pump and Piping Modifications, Charlton, MA
- Mattabassett WPCF Outfall Improvements, Cromwell, CT
- WPCF Digester Complex 1 & 2 Upgrades, Danbury, CT
- Emergency Standby Generator No.1 Replacement, Danbury, CT
- Emergency Standby Generator No.2 Replacement, Danbury, CT
- WPCF FOG Receiving Strain Press Pilot, Danbury, CT
- FOG-Biodiesel Facility Site Utilities, Danbury, CT
- WPCF Headworks Upgrade, Danbury, CT
- Headworks, Grit Removal, and Septage Facilities Upgrades, Danbury, CT
- Tertiary Treatment System Upgrade, Danbury, CT
- Tertiary Treatment Upgrade Construction Administration, Danbury, CT
- Miscellaneous Water Pollution Control Plant Improvements, Danbury, CT
- NPDES Permit Modification Application, Danbury, CT
- Farmington WPCF Upgrade Design, Farmington, CT
- Farmington WPCF Upgrade Construction, Farmington, CT
- Groton Utilities Wastewater Treatment Plant Facilities Plan, Groton, CT
- Grit Chamber Effluent Pipe Replacement, Manchester, CT
- Chemical Storage Building and Miscellaneous Improvements, Manchester, CT
- Water Pollution Control Plant Upgrades, North Haven, CT
- Sludge Mixing Evaluation, North Haven, CT
- WPCF Asset Replacement, Norwalk, CT
- Centrifuge Installation Design, Norwalk, CT

- Secondary Control Building Improvements, Norwalk, CT
- Old Saybrook Wastewater Planning, Old Saybrook, CT
- Final Settling Tank No.3 Mechanism Replacement, Stamford, CT
- Torrington WPCF Upgrade Construction Administration, Torrington, CT
- Wallingford Grit Washing Design, Wallingford, CT
- Conserv I WRF Return Sludge Replacement, Orlando, FL
- Water Pollution Control Facility Phase I Improvements, Wilmington, DE
- Wilmington Water Pollution Control Facility Contract Close Out Report, Wilmington, DE
- Wilmington Water Pollution Control Facility Electrical Substation No.3 Replacement, Wilmington, DE
- West Bank Sewage Treatment Plant Upgrades, New Orleans, LA
- East Bank Sewage Treatment Plant Upgrades, New Orleans, LA

Industrial Wastewater Treatment

- Baldwin Richardson Primary Lagoon Aeration Upgrades, Williamson, NY
- Henkel Wastewater Treatment System Evaluation, West Hazleton, PA
- SC Johnson South Side Soapbox Wastewater Evaluation, Chicago, IL

Wastewater Collection and Pump Stations

- Bethel Crossings Development Review, Bethel, CT
- Public Works Garage Grinder Pump Station Evaluation, Danbury, CT
- Infiltration/Inflow (I/I) Evaluation, Fairfield, CT
- Hydraulic Modeling Evaluation, Fairfield, CT
- Sewer System Rehabilitation Project, Fairfield, CT
- East Trunk Sewer Value Engineering, Fairfield, CT
- New North Branch Interceptor Sewer Easement Improvements, Hartford, CT
- Woodside Circle Sewer Easement Improvements, Hartford, CT
- Review of Water Pollution Control Facility Foaming Issues, Killingly, CT
- Pump Station No.9 Evaluation, New London, CT
- Pump Station Asset Management, Norwalk, CT
- Five Mile River and Keeler Brook Pump Station Upgrades, Norwalk, CT
- Belden Avenue Sewer Improvements, Norwalk, CT
- Wastewater On-Call Services, Plymouth, CT
- Sewer System Evaluation Survey, South Windsor, CT
- Sewer System Improvements, South Windsor, CT
- Phase IV Sewer System Improvements, South Windsor, CT
- Pleasant Valley Manhole Replacement, South Windsor, CT
- On-Call Services, South Windsor, CT
- Benedict Drive Force Main Evaluation, South Windsor, CT
- Sewer System Evaluation Study, Stamford, CT
- On-Call Services, Trumbull, CT
- Sewer System Evaluation Survey, Trumbull, CT



Franklin Meade, I.E.

PROJECT ENGINEER

Project Assignment: Project Engineer

Education

M.S., Civil and Environmental Engineering, Clarkson University

B.S., Environmental Engineering, Clarkson University

B.S., Chemistry, SUNY Albany

A.S., Liberal Arts, North Country Community College

Professional Registration

NYS Intern Engineer

Experience

5 Years

Joined Firm

2023

Training/Certifications

OSHA HAZWOPER

OSHA 10-Hour Construction Safety & Health

NYSDEC Erosion & Sediment Control Training

Experience Summary

Franklin will also provide project engineering assistance for this secondary clarifier project. Franklin is a Project Engineer in Wright-Pierce's wastewater group in our Clifton Park, NY, office. He has a background in Civil and Environmental Engineering. He has experience with wastewater treatment, wastewater conveyance, and sewage lift station design. He also has experience in water distribution systems and pump station projects. His work has included site plan review, manhole inspections and inventory, construction administration, construction inspection, and project coordination.

Relevant Project Experience

Wastewater Treatment

- Secondary Clarifier, Control Gate, and Electrical Upgrades, Saratoga County Sewer District, Saratoga County, NY
- Wastewater Treatment Plant Improvements, Lake George, NY*
- Wastewater Treatment Plant Disinfection Study, Whitehall, NY*
- Wastewater Treatment Plant Upgrades, Deferiet, NY*
- Septic System Improvements, Rhinebeck, NY*
- Septage Receiving Upgrade, Newmarket Wastewater Treatment Facility, Newmarket, NH
- Primary Effluent Screw Pump Station Upgrade, Montague Clean Water Facility, Montague, MA
- Ventilation and Odor Control Evaluation, Cranston Water Pollution Control Facility, Cranston, RI

Wastewater Collection

- Caldwell District Pump Station Improvements, Lake George, NY*
- Caldwell Sewer District I&I Study, T. Lake George, NY*
- Inflow & Infiltration (I&I) Study, V. Lake George, NY*
- Hamagrael Gravity Sewer Project, Bethlehem, NY*
- Sewer District FE1-A Trunk Sewer Relocation, Fort Edward, NY*
- Sewer District #7 Ext. #2 - Carman Road, Rotterdam, NY*
- Town Designated Engineer, Lake George, NY & Queensbury, NY*
- Hunter Peaks Residential Subdivision, Hunter, NY*
- School Street Neighborhood Water Main Replacement, Hudson Falls, NY*
- John Street Neighborhood Water Main Replacement, Hudson Falls, NY*

*Experience from previous employer



Krista Griego, E.I.

PROJECT ENGINEER

Project Assignment: Project Engineer

Education

B.S., Environmental and Sustainable Engineering,
University at Albany

B.A., Environmental Studies,
Stony Brook University

Professional Registration

NYS Intern Engineer

Professional Affiliations

New York Water
Environment Association
(NYWEA)

Experience

2 Years

Joined Firm

2022

Training/ Certifications

OSHA 10-hr Construction
Safety and Health

U.S. Pipe-Pipeline Design
Bootcamp

Confined Space Certification

Adult and Pediatric First Aid-
CPR- AED Certification

Experience Summary

Krista will serve as a Project Engineer for this wastewater treatment clarifier project. She will assist the project team with the execution of designs. Krista is an engineer in Wright-Pierce's Wastewater Group and has a background in environmental and sustainable engineering and environmental science. Krista has experience working on municipal and industrial wastewater treatment upgrades, pump station design, headworks analysis, water main replacement, and lead service line inventory. During her previous employment, she worked in research and development and supported engineers.

Relevant Project Experience

Wastewater Projects

- Clarification Improvement, Poughkeepsie, NY
- Secondary Clarifier, Control Gate, and Electrical Upgrades, Saratoga County Sewer District, Saratoga County, NY
- Tivoli Wastewater Treatment Facility and Pump Station Upgrade, Tivoli, NY
- Wastewater Treatment Facility Electrical Upgrade, Glens Falls, NY
- Brewerton and Meadowbrook Limestone Wastewater Treatment Plants – Rotary Drum Thickener Replacements and Odor Control Project, Onondaga County, NY
- Asset Management, Essex County, NY
- Wastewater Treatment Plant Assessment, Massena, NY
- Wastewater Treatment Plant Headworks Analysis Related to Pretreatment Program Local Limits, Newburgh, NY
- Alkegen Tonawanda Facility Wastewater Treatment System Evaluation Proposal, Tonawanda, NY
- Development of Technically Local Limits, Montague, MA
- 20-Year Collection System Engineering Evaluation, Barre, VT
- Headworks Preliminary Design, Barre, VT
- S.C. Johnson Risk Mitigation of Industrial Wastewater Discharge Proposal, Chicago, IL

Water Projects

- Lead Service Line Inventory, Waterford, CT
- Holderness Wells Design, Plymouth, NH
- Design of Water Main Bridge Crossing Replacement, Massena, NY



Ryan P. Cyr, PE

SENIOR STRUCTURAL ENGINEER

Project Assignment: Structural

Education

M.S., Civil Engineering,
Concentration: Structural
Engineering, University at
Buffalo, The State University
of New York

B.S., Civil and Environmental
Engineering, Concentration:
Structural Engineering,
Clarkson University

Professional Registration

New York
Connecticut
Georgia
Florida
Louisiana
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont
Virginia

Experience

21 Years

Joined Firm

2021

Professional Affiliations

American Society of Civil
Engineers

American Institute of Steel
Construction

National Council of Structural
Engineers Associations

Structural Engineers Institute

Association of State Dam
Safety Officials

Experience Summary

Ryan will serve as the Structural Engineer for this contract. In this role, he will assist the Project Manager and project engineers with any structural aspects of design, including technical calculations and the development of plans and specifications. Ryan is a seasoned structural engineer in the Building Design Practice Group. He has in-depth experience designing wastewater, water, municipal, industrial, educational, institutional, and recreational facilities. His expertise includes structural steel, reinforced concrete, reinforced masonry, and wood-framed structures. His responsibilities include executing structural engineering design of industrial and municipal projects (civil, water, and wastewater facilities), conducting facility evaluations (including confined space entry) and structural assessments of buildings and earth retention structures (concrete and earth embankment dams, spillways and dikes), developing construction cost estimates, performing construction administration efforts, and performing structural design QA/QC. He is proficient with BIM modeling and the integration of REVIT Structure with current structural engineering software.

Relevant Project Experience

Wastewater

- Dutchess County Wastewater Treatment Facility Upgrades, Tivoli, NY
- Wastewater Treatment Plant, Sidney, NY*
- Evaluation of Digester No. 6, Buffalo Sewer Authority, Buffalo, NY*
- Wastewater Treatment Facility Rehabilitation Study, East Aurora, NY*
- North and South Wastewater Treatment Plant Improvements, Albany County Sewer District, Albany, NY*
- Wastewater Treatment Plant, Schenectady, NY*
- SI Group Plant Wastewater Treatment Plant Upgrades, Rotterdam, NY*
- SI Group Plant Wastewater Treatment Plant Assessment, Rotterdam, NY*
- Rumford-Mexico Wastewater Treatment Facility Upgrades, Rumford, ME
- Nitrogen Removal and Water Pollution Control Facility Upgrades, Barnstable, MA
- Wastewater Treatment Facility Upgrades, Livermore Falls, ME
- Wastewater Treatment Facility Flood Wall, Boothbay Harbor, ME
- Sludge Drying Beds and Sludge Pumping Improvements, Van Buren, ME
- Influent Screening Upgrade, Lewiston-Auburn Water Pollution Authority Lewiston, ME
- Wastewater Treatment Facility Gravity Thickener 1 & Grit Chamber Repairs, Sturbridge, MA
- Wastewater Sludge and Dewatering Facility, Van Buren, ME
- Wastewater Treatment Facility Headworks Upgrades, Wells, ME

- Sold Handlings Building Upgrades, Manchester, NH
- Penecook Wastewater Treatment Facility Structural Repairs, Concord, NH
- Wastewater Treatment Facility, East Bank Treatment Facility Generator Building Upgrades, New Orleans, LA

Water Pump Stations

- Finish Water Booster Pump Station, Concord, NH
- Bergstrom Water Treatment Facility, Bethel, CT
- North Yarmouth Water Booster Pump Station, Yarmouth, ME
- Booster Pump Station, Bangor, ME

Wastewater Pump Stations

- North Ferry Pump Station, Schenectady, NY*
- Lowlands Pump Station Upgrade, Nahant, ME
- Chaffee Brook Pump Station Upgrade, Winslow, ME
- River Street Pump Station, Dover, NH

Stormwater

- Weir Renovation, Buffalo Sewer Authority, Buffalo, NY*
- Arch Street Storm Vault Modifications, Albany Water District, Albany, NY*
- OF-205 Phase III CSO Program, Narragansett Bay Commission, Pawtucket, RI

Water

- Well Houses and Water Treatment Plant, Sidney, NY*
- Water Treatment Plant, Indian Lake, NY*
- Central Acton Water Treatment Facility - PFAS Treatment, Acton, MA
- Baxter Farm Community Water Association, Water Storage Tank, Tolland, CT
- WWTF Biosolids Dewatering System Upgrade, Jacksonville Beach, FL
- Populatic Water Treatment Plant, Medway, MA
- Mill Pond Water Treatment Plant – PFAS Treatment, Burlington, MA
- Antworth Lane Water Treatment Facility, Mars Hill, ME

Buildings

- SUNY Cortland - Lusk Field House Renovations, Cortland, NY*
- Public Safety Building, Lancaster, NY*
- SUNY Geneseo Stadium, Lancaster, NY*
- Buffalo State College – Houston Gym, Buffalo, NY*
- St Joseph's Hospital New Cogen Plant Upgrades, Syracuse, NY*
- Tesla Giga Factory (formerly Solar City), Buffalo, NY*
- Capital Center, Albany, NY*
- High School Master Plan, Albany, NY*

*Experience from previous employer



Christopher N. Abell, PE

LEAD ELECTRICAL ENGINEER

Project Assignment: Electrical

Education

B.S., Electrical Engineering,
University of Massachusetts

A.A.S., Applied Science in
Electronic Technology,
Rhode Island Community
College

Professional Registration

New York
New Hampshire
Florida
Maine
Massachusetts
Vermont
Connecticut
Rhode Island

Experience

20 Years

Joined Firm

2008

Experience Summary

Chris will serve as the Electrical Engineer for this contract. He will be responsible for the execution of any electrical aspects of design, including technical calculations and the development of plans and specifications. Chris is an Electrical Engineer at Wright-Pierce, working with the firm's Building Design Practice Group. He has prior work as a final test engineer testing semiconductor tools and as a nuclear engineer maintaining back up equipment in the nuclear load houses such as generators, automatic transfer switches, temporary control panels for nuclear support systems, and updating power distribution drawings for each project. He has earned the prestigious Six Sigma Green Belt certification, which is a five-phase method (define, measure, analyze, improve and control) of solving a problem within a process, with the responsibility of improving the process. He has worked on numerous wastewater treatment facility upgrades, pump station upgrades, and water treatment plant upgrades. He has also updated master specifications by adding new sections from past projects and making changes to the specifications to reflect new products.

Relevant Project Experience

Wastewater Treatment

- Secondary Clarifier Upgrades, Saratoga County, NY
- Secondary Clarifier Upgrade, Concord, NH
- Hall Street Wastewater Treatment Facility Primary Clarifier, Concord, NH
- Hall Street Wastewater Treatment Facility Secondary Clarifier, Concord, NH
- Gravity Thickener Upgrade, Newmarket, NH
- Secondary Clarifier Upgrade, Kennebunkport, ME
- Wastewater Treatment Fiscal Sustainability Plan, South Berwick, ME
- Fiscal Sustainability Plan, North Berwick, ME
- Wastewater Treatment Facility Electrical Room Recovery, Wells, ME
- Control Building Improvements, York Sewer District, York, ME
- Fiscal Sustainability Plan and Facility Planning, Bath and Wells, ME
- Wastewater Treatment Facility Evaluation, Sanford, ME
- Mount Green North Pump Station, Concord, NH
- Wastewater Treatment Facility Evaluation, Sanford, ME
- Disinfection System Winterization, South Portland, ME
- Wastewater Treatment Facility Dewatering Upgrade, Yarmouth, ME
- Wastewater Treatment Facility Dewatering Upgrade, Old Orchard Beach, ME
- Wastewater Treatment Facility Electrical Distribution and Aeration Blower Upgrade, Old Orchard Beach, ME
- Wastewater Treatment Plant Garage Complex, Brunswick, ME
- Sludge Dewatering and Siloxane Removal Upgrade, Lewiston, ME

- Wastewater Treatment Facility Evaluation, Camden, ME
- Wastewater Treatment Facility Upgrade, Camden, ME
- Wastewater Treatment Facility Dewatering System Upgrade, Old Orchard Beach, ME
- Water Pollution Control Facility Phase 1 Upgrade Bath, ME
- Bath Sanitary District Fiscal Sustainability Plan, Bath, ME
- Degregoire Wastewater Treatment Facility Evaluation, Bar Harbor, ME
- Wastewater Treatment Facility Dewatering System Upgrade, Yarmouth, ME
- Wastewater Treatment Plant Phase I Upgrade, Brunswick, ME
- Dewatering Upgrade, Augusta, ME
- Wastewater Treatment Facility Upgrade, Livermore Falls, ME
- Plant Water Replacement, Livermore Falls, ME
- Wastewater Treatment Facility Upgrades, Ashland, ME
- WWTF and Pump Station Upgrades, Lincoln Sanitary District, Lincoln, ME
- Wastewater Treatment Facility SCADA Upgrade, Rumford-Mexico, ME
- Wastewater Treatment Facility Upgrade – Phase II, Burlington, VT
- Wastewater Treatment Facility Influent Screw Pump Replacement, Concord, NH
- Wastewater Treatment Facility Upgrade, Newport, NH
- Wastewater Treatment Facility Electrical Upgrade, Claremont, NH
- Wastewater Treatment Facility, Exeter, NH
- Wastewater Treatment Facility Upgrade, Whitefield, NH
- Wastewater Treatment Facility Replacement, Concord, NH
- Hall Street Wastewater Treatment Facility Generator Upgrades Concord, NH
- Wastewater Treatment Facility Aeration Blower Replacement, Claremont, NH
- Wastewater Treatment Facility Improvements, Plymouth, NH
- Wastewater Treatment Plant Dewatering Upgrade, Keene, NH
- Wastewater Treatment Facility Comprehensive Door, Window, and Lighting Upgrade, Durham, NH
- Comprehensive Facility Plan Study, Hampton, NH
- Wastewater Treatment Facility Upgrade, Pepperell, MA
- Water Pollution Abatement Facility Sludge Dewatering Upgrade, Haverhill, MA
- Regional Wastewater Treatment Plant Disinfection System Upgrade, Lynn MA
- Easterly Wastewater Treatment Facility CEPT Upgrade, Fitchburg, MA
- Water Pollution Control Facility Upgrades, Leominster, MA
- New Headworks Facility, Lynn, MA
- Water Pollution Control Facility Lab/Maintenance Building HVAC Design, Cromwell, CT
- Comprehensive Water Pollution Control Facility Upgrade, Killingly, CT
- Mystic Water Pollution Control Facility Interconnection Feasibility Study, Stonington, CT
- Dewatering System Upgrade, Danbury, CT
- Water Pollution Control Facility Upgrade, Torrington, CT
- Water Pollution Control Facility Nutrient Removal Upgrades, Cranston, RI



6 Executive Park Drive, Suite B
Clifton Park, NY 12065
888.621.8156 | wright-pierce.com

chris.pierce@wright-pierce.com



Request for Qualifications RFQ-COP-08-24-04
Comprehensive Planning Services
2024-2026

Issued by:
City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, NY 12601

August 30, 2024

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Electronic Proposal Submittal Procedures

Submission Instructions for Suppliers

Please follow these instructions to submit via the Empire State Purchasing Group (BidNet Direct) portal. Hard copies are not accepted.

1. Prepare your submission materials: Upload all required documents as a single PDF file:

Requested Documents:

Please note the type and number of files allowed. The maximum upload file size is 2 GB. Please do not embed any documents within your uploaded files, as they will not be accessible or evaluated.

2. Upload your submission:

Upload your submission by visiting the following site and clicking on the solicitation of interest: www.bidnetdirect.com/new-york. For a general step by step guide on how to upload your submission to BidNet Direct, please see the attached **Electronic Bid Submission (EBS) User Guide**.

Your submission must be uploaded, submitted, and finalized prior to the Closing Time of **1:00 PM EDT on September 23, 2024**. We strongly recommend that you give yourself sufficient time and **at least ONE (1) day** before Closing Time to begin the uploading process and to finalize your submission.

Important Notes:

Each item of Requested Information will only be visible after the Closing Time.

Uploading large documents may take significant time, depending on the size of the file(s) and your Internet connection speed.

Once you have successfully submitted your proposal on BidNet Direct, a confirmation number will be provided along with the submission time stamp. You are able to print and/or download a copy of the confirmation for your records.

Minimum system requirements: Microsoft Edge, Google Chrome, or Mozilla Firefox. Javascript must be enabled. Browser cookies must be enabled.

Need Help?

The City of Poughkeepsie uses the Empire State Purchasing Group (BidNet Direct) portal for accepting proposals digitally. Please contact the Empire State Purchasing Group (BidNet Direct) at support@bidnet.com or call 1-800-835-4603 and press option #2 for Vendor Support Department for technical questions related to your submission. The BidNet Direct vendor support team is available M-F 8a.m. – 8p.m. EST.

It is recommended that you register with Bidnet to receive bids and submit your proposals. Hard copies of will not be accepted.

I. INTRODUCTION

The City of Poughkeepsie (CPoK) is seeking proposals from urban planning firms or other architectural, planning or development entities to serve as the Planning Coordinator to create a Transformation Plan as defined in the Choice Neighborhoods Initiative Planning Grant NOFO for the Northside neighborhood in Poughkeepsie, New York, focused on the area inclusive and surrounding two Poughkeepsie Housing Authority sites, Thurgood Marshall Terraces and Martin Luther King, Jr. Garden Apartments, and the city-owned park between the two developments. Planning services will include in-depth community input at all stages, and the development of conceptual and actionable plans that reflect the City's goals around maintaining families in their homes, increasing home ownership, and creating mixed-income developments with many levels of subsidy. CPoK intends to consider qualified firms that possess the professional capabilities to provide the services listed herein.

Throughout this work, the Planning Coordinator will work closely with CoPK and the Poughkeepsie Housing Authority (PHA). The mission of the Poughkeepsie Housing Authority is to promote adequate affordable housing, economic opportunity, and a suitable living environment for the families we service, without discrimination.

The City of Poughkeepsie (CPoK) was chartered in 1854, and located in Dutchess County, 50 miles north of New York City. The CPoK is overseen by a nine-member Common Council and an independent Mayor. The Mayor of CPoK appoints the Commissioners that oversee the PHA, which owns and operates over 359 units of conventional public housing in five multi-family developments within the City. The PHA also administers a Section 8 Program consisting of 169 vouchers for: 87 Tenant Based (81 housed; 4 searching), 60 – Veterans Affairs Supportive Housing (54 housed; 3 searching), 18 – Foster Youth to Independence (7 housed; 2 searching), and 4 – Homeless Vouchers (2 housed; 2 searching). There are currently 45 applicants on the PHA waitlist. In addition, CPOK manages 852 direct Section 8 rental assistance vouchers leased throughout the surrounding Dutchess County.

Over the past 15+ years, CPoK has overseen the development of at least nine LIHTC and two mixed-income affordable housing sites in the City. CPoK commonly developed these sites in partnership with for-profit and nonprofit developers. Public and private investments in these developments are in the tens of \$millions.

The City maintains partnerships with various nonprofit organizations, for example with Habitat for Humanity, recently creating two single family homes. The Dutchess County/City of Poughkeepsie Landbank was created in 2020 and is funded in parts by the New York state Homes and Community Renewal fund and the County and City. The Landbank expects to have a portfolio of properties for redevelopment in neighboring County towns and villages as early as 2025.

In 2022 the City received authority in accordance with NY State Real Property Tax Law to transition from Tax Liens to NY State Article 11 In Rem foreclosure procedures and in the same year, adopted the use of installment plans to provide homeowners with a financial mechanism to prevent foreclosures and ultimately to stem property losses due to delinquencies resulting in unpaid tax levies. In 2024, the City was named one of the state's first "pro-housing" municipalities by Governor Kathy Hochul. Also in 2024, the City of Poughkeepsie Industrial Development Agency (IDA) placed a moratorium on granting Payments in Lieu of Taxes (PILOTS) pending significant updates to its Uniform Tax Exemption Policy (UTEP). Updates to the UTEP are expected to encourage the development of mixed income housing, supplementing existing PILOT models for low-income housing largely funded by the HUD Low Income Housing Tax Credit (LIHTEC).

II. SITE BACKGROUND

A. Thurgood Marshall Terrace

The Thurgood Marshall Terrace site is a distressed public housing site owned and managed by the Poughkeepsie Housing Authority. The 3.7-acre site contains five two-story structures that were constructed in 1975. The site includes 47 apartment units and non-residential uses such as a rental office, laundry room, and a community center. It is located directly across the street from market-rate housing and located approximately one mile from the main gates of Marist College.

B. Martin Luther King, Jr. Garden Apartments

The MLK Jr Apartments site is a distressed public housing site owned and managed by the Poughkeepsie Housing Authority. The 8.9-acre site contains eight two-story structures that were constructed in 1971. Three of the eight buildings are walk-up apartments. The remainder are townhouse-style buildings. One of the walk-up apartments is reserved for senior and disabled residents. The site includes 70 apartment units and non-residential uses such as a rental office, laundry room, and a daycare. There is a large undeveloped section of the property that is adjacent to the Northside Line, a newly opened spur of reconstructed Rail-Trail that connects to the Empire Rail Trail and the Mid-Hudson Walkway.

C. The Northside Neighborhood

Both Thurgood Marshall Terrace and Martin Luther King Jr Garden Apartments are located within **Poughkeepsie's historic Northside neighborhood**. The boundaries of the neighborhood are generally considered to be the City line on the North and East, Main Street on the South, and Rte 9 on the West. These boundaries were incorporated into the CoPK proposal for the Choice Neighborhoods Transformation Plan application.

While the Northside is home to the City's greatest challenges, it is also home to its greatest opportunities. No one conveys this message more clearly than Mayor Yvonne Flowers, the first African American mayor in the City's 170-year history. A lifelong resident of the Northside and former resident of the MLK Jr. Garden Apts, the Mayor committed her administration to a community-centered approach to revitalizing the Northside, with a focus on mixed-income housing. Since Jan. 2024, the City has worked with the national nonprofit, Purpose Built Communities, to develop a plan that prioritizes mixed-income housing, community wellness, cradle-to-career education models, economic vitality and resident voice. Locally, the City is being supported by 3 key nonprofit partners: 1) **Poughkeepsie Children's Cabinet (PCC)**, created in 2020 to end a harmful legacy of disengagement between the City and School District as separate municipal entities. The collective-impact nonprofit brings together the full range of cradle-to-career stakeholders needed to address systemic problems rooted in the Northside and acutely made manifest in the School District. 2) **MASS Design Group** is the world's most prominent nonprofit architecture and design firm, the recipient of the 2022 AIA Architecture Firm Award, and designers of the National Memorial for Peace and Justice, which reshaped public discourse on the legacy of lynching in America. MASS's work in Poughkeepsie's Northside has garnered national attention, including having its sustainable, energy-efficient design of environmental nonprofit Scenic Hudson's Northside Hub featured on CBS's "60 Minutes." 3) **Scenic Hudson** is a critical neighborhood anchor and convener. Its Northside Hub is renovating an abandoned factory adjacent to the Walkway into its central office and community hub, and formed the Northside Collaborative: 20+ nonprofits, educational institutions, and local government partners (including the City) working to improve quality of life and address neighborhood environmental justice concerns.

Planning Process & Key Partners: The City has assembled a dynamic coalition of stakeholders for a unified planning process to comprehensively address systemic barriers to social and economic mobility for Northside residents, to create a **Housing Plan** that creates safe, sustainable mixed-income communities at Thurgood Marshall Terrace and MLK Jr. Garden Apts, and catalyzes future investment to offer residents a range of desirable housing options; a **People Plan** that leverages the cradle-to-career work of the PCC, along with other partners, to improve health and educational outcomes, and increase economic vitality and quality of life for all Northside families; and a **Neighborhood Plan** that leverages Scenic Hudson's Northside Collaborative, among others, prioritizing critical community improvements, rebuilding infrastructure such as parks, deterring crime, increasing home ownership, and attracting the best commercial, retail and development partners to ensure Northside residents will economically benefit from the 600,000 tourists who annually visit the Walkway Over the Hudson. Combined, the resulting **Northside Transformation Plan** will ensure the Northside becomes a neighborhood of choice for all residents, and a welcoming, economically vibrant neighborhood for visitors from around the world. There have been several requests made to the city for new developments and redevelopment within or near the neighborhood including commercial, entertainment, hotel and residential projects. This includes overtures directly to the Poughkeepsie Housing Authority. With this increasing development pressure, it is crucial to support access to affordable housing and sustain the quality of life within the neighborhood.

III. RESPONDENT QUALIFICATIONS

Qualified Respondents will have the following experience and expertise:

- Extensive knowledge and experience in urban planning and community engagement,
- Experience in affordable housing planning and design,
- Successful experience with HUD Choice Neighborhood Planning or Implementation Grants,
- Experience and expertise in leading or supporting major community planning initiatives,
- Skill in facilitating community participation in planning including public meetings, stakeholder meetings, and charrettes,
- Strong communication and moderation skills in working with multiple stakeholders including public housing and neighborhood residents with diverse backgrounds, City Hall, local agencies, politicians, and business and neighborhood organization,
- And sufficient administrative and financial capacity to dedicate the necessary staff time and resources to complete the assigned tasks in a timely manner.

IV. ROLE OF THE SELECTED FIRM

The City intends to accomplish the scope of work adhering to HUD Choice Neighborhood planning guidelines while leveraging any combination of grant awards, e.g., the Choice Neighborhoods Planning Grant, city funding and pledges from the County/City Land Bank and others. The selected firm will operate as the Planning Coordinator as defined in the HUD Choice Neighborhoods NOFO and Scope of Work below. Working closely with CPOK stakeholders, the firm will assume primary responsibility for creating and implementing the Transformation Plan.

A. Scope of Work

CPOK is seeking the services of a qualified architectural/ planning/ development firm or team ("Planning Coordinator") to provide the following services:

1. Coordinate the development of a Choice Neighborhoods Transformation Plan for the Thurgood Marshall Terrace, MLK Jr Garden Apartments and surrounding Northside neighborhood (the full requirements for the Transformation Plan are described in the NOFO at the link above).
 - a. Develop, oversee, and facilitate a community engagement process.
 - b. Assist CPoK in community outreach and a resident needs assessment.
 - c. Produce an analysis of demographic, housing, and economic data and trends impacting the neighborhood.
 - d. Conduct a Site evaluation, building program statements and conceptual design for the redevelopment of the target site to achieve 3:1 or 4:1 replacement rate, and identify plan for moving current residents as new homes are completed.
 - e. Provide urban design, landscape architecture and open space planning for Critical Community Improvements in the Transformation Plan.
 - f. Produce an assessment of the findings and incorporate key elements of past planning studies. Coordinate with current planning efforts affecting the neighborhood, zoning changes, NY Pro-Housing Designation benefits and more.
 - g. Provide planning support, presentation graphics at local government, community and HUD meetings related to the CNP grant application guidelines and subsequent development of the Transformation Plan.
 - h. Provide other related services required to engage the community and complete the Transformation Plan.

If awarded, the HUD CNP grant requires that all work including the Transformation Plan be completed within the 30-month grant term. However, the City would like to complete the Transformation Plan in 24 months to enable initiation of implementation in early 2027.

V. SUBMISSION INSTRUCTIONS

Minority and women-owned businesses are encouraged to respond to this solicitation.

A. Response Due Date

Responses must be received no later than **1:00 p.m. on September 23, 2024**. Respondents should make early submission of their materials to avoid any risk of loss of eligibility brought about by unanticipated delays or other delivery related problems. Responses must be made through BIDNET. Responses received after the deadline for receipt will be deemed unresponsive and will be disqualified. Responses that do not include all required information will be deemed unresponsive and will be disqualified.

B. Submission of Responses

Proposal must be submitted electronically through the Empire State Purchasing Groups Regional Bid Notification System (Bidet Direct) www.bidnetdirect.com/newyork portal, on or before 1p.m. September 23, 2024. Please refer to the instructions included above titled: **Electronic Proposal Submittal Procedures**.

Files must be submitted as a single PDF and include all required documents and forms.

When Submitting (uploading) a proposal electronically through BidNet Direct Portal, please allow sufficient time to complete your proposal. The solicitation will end at the closing time listed in the RFQ. If you are in the middle of uploading your proposal at the closing time, the system will stop the process and your proposal will not be received by the system. No proposal will be accepted after the designated time or date indicated in the proposal specifications.

C. Inquiries

All questions and inquiries regarding this RFQ must be submitted in writing via email to Shirley Davison, sdavison@cityofpoughkeepsie.com no later than **4:00 pm on September 18, 2024.**

Answers will be provided as written addenda to this RFQ for all interested parties and posted on BidNet Direct.

VI. SUBMISSION CONTENT

Responders must assemble submissions in the order described below.

A. Letter of Interest

The planning firm/team should provide a letter of interest listing the firm, team members and identifying the primary contact person. The letter should provide a summary of the respondent's understanding of the scope of work and highlights of the firm's/team's qualifications and experience. A statement of interest and willingness to commit the resources necessary for the successful and timely completion of the project shall conclude the letter, with the indication this statement will remain valid for not less than ninety (90) days from the submission due date. The letter should be signed by an authorized principal of the leading firm with copies to all members of the team.

B. Separate Letter Indicating Fee Proposal

This letter will be in five parts:

1. Hourly rates for all positions expected to be assigned to the project. Estimated fees for major tasks in preparation of the Choice Neighborhoods Transformation Plan. These tasks or phases can potentially include 1) neighborhood assessment, 2) resident engagement, 3) neighborhood plan development, 4) replacement housing site assessment and concept development. An estimate of ancillary fees including graphics and travel costs, and a total for all fees and costs.
2. **Firm / Team Description:**
 - Name, address, telephone/fax numbers and email address of each firm / professional on the team.
 - Location of the primary office which will coordinate the project.
 - Identity the individual who will serve as Project Manager for the firm/team and who will direct and coordinate the project to completion.
 - Indicate the role each member of the Planning Firm / Team will play.
 - For any proposed sub-contractors please provide similar information as described in 1 through 4.

3. Provide a brief narrative description / history of previous collaboration among some or all members of the Planning Team on similar projects, with a focus on Choice Neighborhoods.
4. Firm / Team Qualifications:
 - Summary descriptions of each firm's qualifications.
 - Resume of firm / team member to be assigned as project manager
 - Resumes of other personnel to play key roles in the planning process
 - Supplementary information – may include relevant certifications, licenses, awards, and firm brochures.
5. Firm / Team Experience:
 - A summary grid/spreadsheet/or listing of major planning, design, and re-development projects indicating team member(s) role, scope of project, number of units and configuration, financing/funding sources, total cost, public and private partners, location, and project contact information.
 - A narrative should highlight top three most successful planning/housing projects, particularly those which use federal, state or local subsidy, and their relevance to this project. At least one of these should include a Choice Neighborhoods project.
 - A minimum of three references must be submitted for the firm/team. The references should be familiar enough with specific projects listed above to comment on issues of design, cost and schedule. Reference information should include name, title, organization name, phone number, fax, and email address, and the name of the development with which the reference is familiar. The CPoK will verify references as appropriate.

As addenda to the submission, the respondent may attach other promotional materials or sample work products that would demonstrate their experience and qualifications. Attaching sample work can assist CPoK in the evaluation of the firm/team's ability to work on the proposed project.

VII. EVALUATION CRITERIA

The following evaluation factors will be used to determine the Planning Firm/Team most qualified to meet the requirements of the project. Each submission will have a total possible score of 100 points.

1. **Qualifications of the Firm/Team** **30 Points**
 - Qualifications of firm / team professionals, with focus on project leader.
 - Choice Neighborhoods Planning and Implementation Grant Experience.
 - Architectural/Urban Design Team Experience.
 - Community Engagement and Facilitation Experience.
 - Expertise creating workable plans from community input and documented success implementing such plans.
 - Experience with HUD Choice Neighborhood Model, Purpose Built Communities model and evidence of successful projects within these frameworks.
2. **Experience of the Firm / Team Members** **35 Points**
 - Experience with comprehensive planning involving housing in an urban context.

- Experience with urban mixed-income and mixed-use re-development.
- Experience with facilitating community input in major planning efforts.
- Evidence of team members' experience with design of high-quality multi-family housing, particularly in affordable markets.
- Experience with public owners/clients.

3. Capacity of the Design Team

15 Points

- Evidence of a sufficient number of qualified professionals and staff to complete the project requirements.
- Evidence of sufficient resources and capability to perform within project schedule and budget.

4. Quality of References

10 Points

- Strength and favorability of recommendations.
- Relevance and credibility of sources.

5. Fee Proposal

10 Points

VIII. SELECTION PROCESS

CPoK urges all interested parties to carefully review the requirements of this RFQ. All responses will be initially reviewed to determine compliance with the submission requirements specified within this RFQ. Responses that are not complete and accurate; or do not comply with these requirements may result in disqualification from the solicitation without further review. CPOK reserves the right to select the submission that makes the most sense for the community, regardless of whether such proposal is the lowest bid received. This RFQ may be awarded without receipt of HUD Choice Neighborhood Planning grant.

Responsive submissions will be evaluated by an Evaluation Committee that will rank/score all submissions individually on their technical merits according to the criteria established in Section 12 Evaluation Criteria outlined in this RFQ.

Based on the rankings of the evaluation committee, respondents whose proposals are in the competitive range may be asked to participate in negotiations to discuss factors to ensure a mutual understanding of both CPoK's requirements and the bidder's proposal. Negotiations may be conducted either in person or by telephone.

However, CPoK may determine that negotiations are not necessary and make an award based on the initial proposals received in response to this solicitation.

The responsive firm whose submission is most advantageous to the CPoK will be awarded according to the best value and services based on the evaluation criteria.

IX. SCHEDULE

Key Descriptions	Date
Issue RFQ	August 30, 2024
Deadline for Questions	September 18, 2024

Proposal Due by 1:00pm on	September 23, 2024
Notification of Selection	October 1, 2024
MOU/Contract Negotiation (if req'd)	October 2-3, 2024
Notice to Proceed – NOFO Response	October 4, 2024

X. ADDITIONAL BIDDING REQUIREMENTS

1. COMPLETE AND ACCURATE SUBMISSION

A Respondent's failure to provide accurate information in response to this Request for Qualifications may disqualify the Respondent from further participation in the selection process.

Qualifications may be corrected, modified, or withdrawn, provided that the correction, modification, or request for withdrawal is made by the Respondent, in writing via email to Shirley Davison, Purchasing Agent, sdavison@cityofpoughkeepsie.com prior to the date and time designated in the RFQ for final receipt of submissions.

2. CANCELLATION / WAIVER

CPoK reserves the right to cancel this RFQ or to reject, in whole or in part, any and all submissions received in response to this RFQ upon its determination that such cancellation or rejection is in the best interest of CPoK. CPoK further reserves the right to waive any minor informality in any submissions received, if it is in the public interest to do so. The decision as to who shall receive a contract award, or whether or not an award shall be made as a result of this RFQ, shall be at the absolute sole discretion of CPoK.

3. KEY PERSONNEL

The key personnel specified by the successful Respondent will be considered essential to the work to be performed by the successful Respondent. Prior to diverting any of the key personnel for any reason(s), the firm shall notify CPoK in writing, at least thirty (30) calendar days in advance, and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the contract. The firm shall not change key personnel or hours to be devoted, before or after award, without written permission from CPoK.

4. AMENDMENT / ADDENDA

CPoK will endeavor to provide copies of applicable amendments or addenda to all potential respondents who have received this RFQ. However, it will be the responsibility of each Respondent to make inquiry as to the existence and content of amendment or addenda, as the same shall become part of this RFQ and all Respondents will be bound thereby, whether or not the amendment or addenda are actually received by the Respondent. The amendments or addenda shall be posted on BidNet Direct website www.bidnetdirect.com/newyork.

5. CPoK OPTIONS

CPoK will consider as "non-responsive" any submission for which critical information is lacking, or any submission which represents a major deviation from the RFQ. CPoK reserves the right to request additional information from any respondent after the submission deadline. CPoK also reserves the right to reject any

and all, or parts of any and all proposals; to not award a contract; to re-advertise this RFQ; postpone or cancel at any time.

CPoK will reject the qualifications of any Respondent who is suspended and/or debarred by HUD from providing services to public housing authorities and reserves the right to reject the response of any Respondent who has previously failed to perform any contract properly for CPoK.

By submitting a response to this RFQ, Respondent acknowledges and agrees to the following conditions:

- All submissions in response to this RFQ become the property of CPoK. As such, all submissions are public records, subject to public review in compliance with HUD, State, and local laws. Submissions shall not be returned.
- No Respondent shall initiate contact with any member of the governing board of the CPoK regarding this RFQ until after completion of the selection process and execution of a contract. If any Respondent has any reason, not related to this RFQ, to contact any of the above parties, they will be required to disclose to that party that they are a respondent in this solicitation. Failure to adhere to these requirements may result in disqualification from the solicitation.

Respondent shall not have employed or retained any company or person, other than a bona fide employee working solely for the Respondent to solicit or secure the execution of a contract with CPoK. Respondent certifies that they have not paid or agreed to pay any person, company, corporation, individual or firm other than a bona fide employee working solely for the Respondent, any fee, commission, percentage, gift or any other consideration, contingent upon or resulting from the award of or the making of a contract from this solicitation.

XI. CONTRACTING REQUIREMENTS

1. PROFESSIONAL LIABILITY INSURANCE

The firm must carry professional liability insurance with respect to the delivery of services. The contractor will agree to provide the CPoK with a copy of the certificate evidencing this insurance coverage and reflecting CPoK as an additional insured with respect to liability.

2. LAWS TO BE OBSERVED

The firm shall at all times observe and comply with all State and Local laws, ordinances and regulations of the State or City governments as related to the services described herein.

3. CHARACTER OF WORKMEN AND WORK

As applicable, the firm shall be responsible for the conduct and discipline of his employees and/or any subcontractor or persons employed by subcontractors. All employees must have sufficient knowledge, skill and experience to perform properly the work assigned to them. Any employee, who does not perform his work in a skillful manner or appears to be incompetent or to act in a disorderly or intemperate manner, shall be removed from the work site at the request of the CPoK.

4. TAXES

CPoK is a sales tax-exempt entity. At the successful respondent's request, copies of the sales tax exemption information will be provided. The contractor shall not include in the bid amount, any taxes chargeable against the performance of the work.

5. ASSIGNMENT OF THE CONTRACT

The contractor shall not enter into any sub-contracts, retain consultants, or assign, transfer, convey or otherwise dispose of the ensuing contract, or any or all of its rights, title or interest, or its power to execute such contract to any person, company, or corporation without the written consent of CPoK.

6. PROVISION FOR CHANGES OR AMENDMENTS

If at any time CPoK desires to expand, alter or terminate a portion of the Statement of Services, as defined herein, the contract will be amended to reflect these changes at costs/deductions acceptable to both parties. CPoK shall provide thirty (30) days prior written notice to the contractor for any changes to the Statement of work. The contractor shall not hold CPoK responsible for termination due to no fault of CPoK.

Instructions to Offerors Non-Construction

U.S. Department of Housing
and Urban Development
Office of Public and Indian Housing



- 03291 -

1. Preparation of Offers

(a) Offerors are expected to examine the statement of work, the proposed contract terms and conditions, and all instructions. Failure to do so will be at the offeror's risk.

(b) Each offeror shall furnish the information required by the solicitation. The offeror shall sign the offer and print or type its name on the cover sheet and each continuation sheet on which it makes an entry. Erasures or other changes must be initialed by the person signing the offer. Offers signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the HA.

(c) Offers for services other than those specified will not be considered.

2. Submission of Offers

(a) Offers and modifications thereof shall be submitted in sealed envelopes or packages (1) addressed to the office specified in the solicitation, and (2) showing the time specified for receipt, the solicitation number, and the name and address of the offeror.

(b) Telegraphic offers will not be considered unless authorized by the solicitation; however, offers may be modified by written or telegraphic notice.

(c) Facsimile offers, modifications or withdrawals will not be considered unless authorized by the solicitation.

3. Amendments to Solicitations

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Offerors shall acknowledge receipt of any amendments to this solicitation by

- (1) signing and returning the amendment;
- (2) identifying the amendment number and date in the space provided for this purpose on the form for submitting an offer,
- (3) letter or telegram, or
- (4) facsimile, if facsimile offers are authorized in the solicitation. The HA/HUD must receive the acknowledgment by the time specified for receipt of offers.

4. Explanation to Prospective Offerors

Any prospective offeror desiring an explanation or interpretation of the solicitation, statement of work, etc., must request it in writing soon enough to allow a reply to reach all prospective offerors before the submission of their offers. Oral explanations or instructions given before the award of the contract will not be binding. Any information given to a prospective offeror concerning a solicitation will be furnished promptly to all other prospective offerors as an amendment of the solicitation, if that information is necessary in submitting offers or if the lack of it would be prejudicial to any other prospective offerors.

5. Responsibility of Prospective Contractor

(a) The HA shall award a contract only to a responsible prospective contractor who is able to perform successfully under the terms and conditions of the proposed contract. To be determined responsible, a prospective contractor must -

- (1) Have adequate financial resources to perform the contract, or the ability to obtain them;

- (2) Have a satisfactory performance record;
- (3) Have a satisfactory record of integrity and business ethics;
- (4) Have a satisfactory record of compliance with public policy (e.g., Equal Employment Opportunity); and
- (5) Not have been suspended, debarred, or otherwise determined to be ineligible for award of contracts by the Department of Housing and Urban Development or any other agency of the U.S. Government. Current lists of ineligible contractors are available for inspection at the HA/HUD.

(b) Before an offer is considered for award, the offeror may be requested by the HA to submit a statement or other documentation regarding any of the foregoing requirements. Failure by the offeror to provide such additional information may render the offeror ineligible for award.

6. Late Submissions, Modifications, and Withdrawal of Offers

(a) Any offer received at the place designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it -

- (1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);
- (2) Was sent by mail, or if authorized by the solicitation, was sent by telegram or via facsimile, and it is determined by the HA/ HUD that the late receipt was due solely to mishandling by the HA/ HUD after receipt at the HA;
- (3) Was sent by U.S. Postal Service Express Mail Next Day Service - Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and U.S. Federal holidays; or
- (4) Is the only offer received.

(b) Any modification of an offer, except a modification resulting from the HA's request for "best and final" offer (if this solicitation is a request for proposals), is subject to the same conditions as in subparagraphs (a)(1), (2), and (3) of this provision.

(c) A modification resulting from the HA's request for "best and final" offer received after the time and date specified in the request will not be considered unless received before award and the late receipt is due solely to mishandling by the HA after receipt at the HA.

(d) The only acceptable evidence to establish the date of mailing of a late offer, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date and the offer, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, offerors should request the postal clerk to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(e) The only acceptable evidence to establish the time of receipt at the HA is the time/date stamp of HA on the offer wrapper or other documentary evidence of receipt maintained by the HA.

(f) The only acceptable evidence to establish the date of mailing of a late offer, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, offerors should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope or wrapper.

(g) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful offer that makes its terms more favorable to the HA will be considered at any time it is received and may be accepted.

(h) If this solicitation is a request for proposals, proposals may be withdrawn by written notice, or if authorized by this solicitation, by telegram (including mailgram) or facsimile machine transmission received at any time before award. Proposals may be withdrawn in person by a offeror or its authorized representative if the identity of the person requesting withdrawal is established and the person signs a receipt for the offer before award. If this solicitation is an invitation for bids, bids may be withdrawn at any time prior to bid opening.

7. Contract Award

(a) The HA will award a contract resulting from this solicitation to the responsible offeror whose offer conforming to the solicitation will be most advantageous to the HA, cost or price and other factors, specified elsewhere in this solicitation, considered.

(b) The HA may

- (1) reject any or all offers if such action is in the HA's interest,
- (2) accept other than the lowest offer,
- (3) waive informalities and minor irregularities in offers received, and (4) award more than one contract for all or part of the requirements stated.

(c) If this solicitation is a request for proposals, the HA may award a contract on the basis of initial offers received, without discussions. Therefore, each initial offer should contain the offeror's best terms from a cost or price and technical standpoint.

(d) A written award or acceptance of offer mailed or otherwise furnished to the successful offeror within the time for acceptance specified in the offer shall result in a binding contract without further action by either party. If this solicitation is a request for proposals, before the offer's specified expiration time, the HA may accept an offer, whether or not there are negotiations after its receipt, unless a written notice of withdrawal is received before award. Negotiations conducted after receipt of an offer do not constitute a rejection or counteroffer by the HA.

(e) Neither financial data submitted with an offer, nor representations concerning facilities or financing, will form a part of the resulting contract.

8. Service of Protest

Any protest against the award of a contract pursuant to this solicitation shall be served on the HA by obtaining written and dated acknowledgment of receipt from the HA at the address shown on the cover of this solicitation. The determination of the HA with regard to such protest or to proceed to award notwithstanding such protest shall be final unless appealed by the protestor.

9. Offer Submission

Offers shall be submitted as follows and shall be enclosed in a sealed envelope and addressed to the office specified in the solicitation. The proposal shall show **the hour and date specified in the solicitation for receipt, the solicitation number, and the name and address of the offeror, on the face of the envelope.**

It is very important that the offer be properly identified on the face of the envelope as set forth above in order to insure that the date and time of receipt is stamped on the face of the offer envelope. Receiving procedures are: date and time stamp those envelopes identified as proposals and deliver them immediately to the appropriate contracting official, and only date stamp those envelopes which do not contain identification of the contents and deliver them to the appropriate procuring activity only through the routine mail delivery procedure.

[Describe bid or proposal preparation instructions here:]

General Conditions for Non-Construction Contracts

Section I – (With or without Maintenance Work)

U.S. Department of Housing and Urban Development

Office of Public and Indian Housing

Office of Labor Relations

OMB Approval No. 2577-0157 (exp. 1/01/2014)

Public Reporting Burden for this collection of information is estimated to average 0.08 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Reports Management Officer, Office of Information Policies and Systems, U.S. Department of Housing and Urban Development, Washington, D.C. 20410-3600; and to the Office of Management and Budget, Paperwork Reduction Project (2577-0157), Washington, D.C. 20503. Do not send this completed form to either of these addressees.

Applicability. This form HUD-5370-C has 2 Sections. These Sections must be inserted into non-construction contracts as described below:

- 1) **Non-construction contracts** (*without* maintenance) **greater than \$100,000 - use Section I;**
- 2) **Maintenance contracts** (including nonroutine maintenance as defined at 24 CFR 968.105) **greater than \$2,000 but not more than \$100,000 - use Section II; and**
- 3) **Maintenance contracts** (including nonroutine maintenance), **greater than \$100,000 – use Sections I and II.**

Section I - Clauses for All Non-Construction Contracts greater than \$100,000

1. Definitions

The following definitions are applicable to this contract:

- (a) "Authority or Housing Authority (HA)" means the Housing Authority.
- (b) "Contract" means the contract entered into between the Authority and the Contractor. It includes the contract form, the Certifications and Representations, these contract clauses, and the scope of work. It includes all formal changes to any of those documents by addendum, Change Order, or other modification.
- (c) "Contractor" means the person or other entity entering into the contract with the Authority to perform all of the work required under the contract.
- (d) "Day" means calendar days, unless otherwise stated.
- (e) "HUD" means the Secretary of Housing and Urban development, his delegates, successors, and assigns, and the officers and employees of the United States Department of Housing and Urban Development acting for and on behalf of the Secretary.

2. Changes

- (a) The HA may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in the services to be performed or supplies to be delivered.
- (b) If any such change causes an increase or decrease in the hourly rate, the not-to-exceed amount of the contract, or the time required for performance of any part of the work under this contract, whether or not changed by the order, or otherwise affects the conditions of this contract, the HA shall make an equitable adjustment in the not-to-exceed amount, the hourly rate, the delivery schedule, or other affected terms, and shall modify the contract accordingly.
- (c) The Contractor must assert its right to an equitable adjustment under this clause within 30 days from the date of receipt of the written order. However, if the HA decides that the facts justify it, the HA may receive and act upon a

proposal submitted before final payment of the contract.

- (d) Failure to agree to any adjustment shall be a dispute under clause Disputes, herein. However, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.
- (e) No services for which an additional cost or fee will be charged by the Contractor shall be furnished without the prior written consent of the HA.

3. Termination for Convenience and Default

- (a) The HA may terminate this contract in whole, or from time to time in part, for the HA's convenience or the failure of the Contractor to fulfill the contract obligations (default). The HA shall terminate by delivering to the Contractor a written Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall: (i) immediately discontinue all services affected (unless the notice directs otherwise); and (ii) deliver to the HA all information, reports, papers, and other materials accumulated or generated in performing this contract, whether completed or in process.
- (b) If the termination is for the convenience of the HA, the HA shall be liable only for payment for services rendered before the effective date of the termination.
- (c) If the termination is due to the failure of the Contractor to fulfill its obligations under the contract (default), the HA may (i) require the Contractor to deliver to it, in the manner and to the extent directed by the HA, any work as described in subparagraph (a)(ii) above, and compensation be determined in accordance with the Changes clause, paragraph 2, above; (ii) take over the work and prosecute the same to completion by contract or otherwise, and the Contractor shall be liable for any additional cost incurred by the HA; (iii) withhold any payments to the Contractor, for the purpose of off-set or partial payment, as the case may be, of amounts owed to the HA by the Contractor.
- (d) If, after termination for failure to fulfill contract obligations (default), it is determined that the Contractor had not failed, the termination shall be deemed to have been effected for the convenience of the HA, and the Contractor shall be entitled to payment as described in paragraph (b) above.
- (e) Any disputes with regard to this clause are expressly made subject to the terms of clause titled Disputes herein.

4. Examination and Retention of Contractor's Records

- (a) The HA, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until 3 years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

- (b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders not exceeding \$10,000.
- (c) The periods of access and examination in paragraphs (a) and (b) above for records relating to:
 - (i) appeals under the clause titled Disputes;
 - (ii) litigation or settlement of claims arising from the performance of this contract; or,
 - (iii) costs and expenses of this contract to which the HA, HUD, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

5. Rights in Data (Ownership and Proprietary Interest)

The HA shall have exclusive ownership of, all proprietary interest in, and the right to full and exclusive possession of all information, materials and documents discovered or produced by Contractor pursuant to the terms of this Contract, including but not limited to reports, memoranda or letters concerning the research and reporting tasks of this Contract.

6. Energy Efficiency

The contractor shall comply with all mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under this contract is performed.

7. Disputes

- (a) All disputes arising under or relating to this contract, except for disputes arising under clauses contained in Section III, Labor Standards Provisions, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.
- (b) All claims by the Contractor shall be made in writing and submitted to the HA. A claim by the HA against the Contractor shall be subject to a written decision by the HA.
- (c) The HA shall, with reasonable promptness, but in no event in no more than 60 days, render a decision concerning any claim hereunder. Unless the Contractor, within 30 days after receipt of the HA's decision, shall notify the HA in writing that it takes exception to such decision, the decision shall be final and conclusive.
- (d) Provided the Contractor has (i) given the notice within the time stated in paragraph (c) above, and (ii) excepted its claim relating to such decision from the final release, and (iii) brought suit against the HA not later than one year after receipt of final payment, or if final payment has not been made, not later than one year after the Contractor has had a reasonable time to respond to a written request by the HA that it submit a final voucher and release, whichever is earlier, then the HA's decision shall not be final or conclusive, but the dispute shall be determined on the merits by a court of competent jurisdiction.
- (e) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the HA.

8. Contract Termination; Debarment

A breach of these Contract clauses may be grounds for termination of the Contract and for debarment or denial of participation in HUD programs as a Contractor and a subcontractor as provided in 24 CFR Part 24.

9. Assignment of Contract

The Contractor shall not assign or transfer any interest in this contract; except that claims for monies due or to become due from the HA under the contract may be assigned to a bank, trust company, or other financial institution. If the Contractor is a partnership, this contract shall inure to the benefit of the surviving or remaining member(s) of such partnership approved by the HA.

10. Certificate and Release

Prior to final payment under this contract, or prior to settlement upon termination of this contract, and as a condition precedent thereto, the Contractor shall execute and deliver to the HA a certificate and release, in a form acceptable to the HA, of all claims against the HA by the Contractor under and by virtue of this contract, other than such claims, if any, as may be specifically excepted by the Contractor in stated amounts set forth therein.

11. Organizational Conflicts of Interest

- (a) The Contractor warrants that to the best of its knowledge and belief and except as otherwise disclosed, it does not have any organizational conflict of interest which is defined as a situation in which the nature of work under this contract and a contractor's organizational, financial, contractual or other interests are such that:
 - (i) Award of the contract may result in an unfair competitive advantage; or
 - (ii) The Contractor's objectivity in performing the contract work may be impaired.
- (b) The Contractor agrees that if after award it discovers an organizational conflict of interest with respect to this contract or any task/delivery order under the contract, he or she shall make an immediate and full disclosure in writing to the Contracting Officer which shall include a description of the action which the Contractor has taken or intends to take to eliminate or neutralize the conflict. The HA may, however, terminate the contract or task/delivery order for the convenience of the HA if it would be in the best interest of the HA.
- (c) In the event the Contractor was aware of an organizational conflict of interest before the award of this contract and intentionally did not disclose the conflict to the Contracting Officer, the HA may terminate the contract for default.
- (d) The terms of this clause shall be included in all subcontracts and consulting agreements wherein the work to be performed is similar to the service provided by the prime Contractor. The Contractor shall include in such subcontracts and consulting agreements any necessary provisions to eliminate or neutralize conflicts of interest.

12. Inspection and Acceptance

- (a) The HA has the right to review, require correction, if necessary, and accept the work products produced by the Contractor. Such review(s) shall be carried out within 30 days so as to not impede the work of the Contractor. Any

product of work shall be deemed accepted as submitted if the HA does not issue written comments and/or required corrections within 30 days from the date of receipt of such product from the Contractor.

- (b) The Contractor shall make any required corrections promptly at no additional charge and return a revised copy of the product to the HA within 7 days of notification or a later date if extended by the HA.
- (c) Failure by the Contractor to proceed with reasonable promptness to make necessary corrections shall be a default. If the Contractor's submission of corrected work remains unacceptable, the HA may terminate this contract (or the task order involved) or reduce the contract price or cost to reflect the reduced value of services received.

13. Interest of Members of Congress

No member of or delegate to the Congress of the United States of America or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit to arise there from, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

14. Interest of Members, Officers, or Employees and Former Members, Officers, or Employees

No member, officer, or employee of the HA, no member of the governing body of the locality in which the project is situated, no member of the governing body in which the HA was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the project, shall, during his or her tenure, or for one year thereafter, have any interest, direct or indirect, in this contract or the proceeds thereof.

15. Limitation on Payments to Influence Certain Federal Transactions

- (a) Definitions. As used in this clause:

"Agency", as defined in 5 U.S.C. 552(f), includes Federal executive departments and agencies as well as independent regulatory commissions and Government corporations, as defined in 31 U.S.C. 9101(1).

"Covered Federal Action" means any of the following Federal actions:

- (i) The awarding of any Federal contract;
- (ii) The making of any Federal grant;
- (iii) The making of any Federal loan;
- (iv) The entering into of any cooperative agreement; and,
- (v) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

Covered Federal action does not include receiving from an agency a commitment providing for the United States to insure or guarantee a loan.

"Indian tribe" and "tribal organization" have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B). Alaskan Natives are included under the definitions of Indian tribes in that Act.

"Influencing or attempting to influence" means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government" means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency" includes the following individuals who are employed by an agency:

- (i) An individual who is appointed to a position in the Government under title 5, U.S.C., including a position under a temporary appointment;
- (ii) A member of the uniformed services as defined in section 202, title 18, U.S.C.;
- (iii) A special Government employee as defined in section 202, title 18, U.S.C.; and,
- (iv) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, title 5, appendix 2.

"Person" means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit or not for profit. This term excludes an Indian tribe, tribal organization, or other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Recipient" includes all contractors, subcontractors at any tier, and subgrantees at any tier of the recipient of funds received in connection with a Federal contract, grant, loan, or cooperative agreement. The term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed means, with respect to an officer or employee of a person requesting or receiving a Federal contract, grant, loan, or cooperative agreement, an officer or employee who is employed by such person for at least 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract, grant, loan, or cooperative agreement. An officer or employee who is employed by such person for less than 130 working days within one year immediately preceding the date of submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State" means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and a multi-State, regional, or interstate entity having governmental duties and powers.

- (b) Prohibition.

- (i) Section 1352 of title 31, U.S.C. provides in part that no appropriated funds may be expended by the recipient of a Federal contract, grant, loan, or cooperative agreement to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

- (ii) The prohibition does not apply as follows:

(1) Agency and legislative liaison by Own Employees.

(a) The prohibition on the use of appropriated funds, in paragraph (i) of this section, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a Federal contract, grant, loan, or cooperative agreement, if the payment is for agency and legislative activities not directly related to a covered Federal action.

(b) For purposes of paragraph (b)(i)(1)(a) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(c) The following agency and legislative liaison activities are permitted at any time only where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency (including individual demonstrations) the qualities and characteristics of the person's products or services, conditions or terms of sale, and service capabilities; and,

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(d) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action:

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Public Law 95-507 and other subsequent amendments.

(e) Only those activities expressly authorized by subdivision (b)(ii)(1)(a) of this clause are permitted under this clause.

(2) Professional and technical services.

(a) The prohibition on the use of appropriated funds, in subparagraph (b)(i) of this clause, does not apply in the case of-

(i) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(ii) Any reasonable payment to a person, other than an officer or employee of a

person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(b) For purposes of subdivision (b)(ii)(2)(a) of clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline.

(c) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation, or reasonably expected to be required by law or regulation, and any other requirements in the actual award documents.

(d) Only those services expressly authorized by subdivisions (b)(ii)(2)(a)(i) and (ii) of this section are permitted under this clause.

(iii) Selling activities by independent sales representatives.

(c) The prohibition on the use of appropriated funds, in subparagraph (b)(i) of this clause, does not apply to the following selling activities before an agency by independent sales representatives, provided such activities are prior to formal solicitation by an agency and are specifically limited to the merits of the matter:

(i) Discussing with an agency (including individual demonstration) the qualities and characteristics of the person's products or services, conditions or terms of sale, and service capabilities; and

(ii) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(d) Agreement. In accepting any contract, grant, cooperative agreement, or loan resulting from this solicitation, the person submitting the offer agrees not to make any payment prohibited by this clause.

(e) Penalties. Any person who makes an expenditure prohibited under paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(f) Cost Allowability. Nothing in this clause is to be interpreted to make allowable or reasonable any costs which would be unallowable or unreasonable in accordance with Part 31 of the Federal Acquisition Regulation (FAR), or OMB Circulars dealing with cost allowability for recipients of assistance agreements. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any of the provisions of FAR Part 31 or the relevant OMB Circulars.

16. Equal Employment Opportunity

During the performance of this contract, the Contractor agrees as follows:

- (a) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.
- (b) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to (1) employment; (2) upgrading; (3) demotion; (4) transfer; (5) recruitment or recruitment advertising; (6) layoff or termination; (7) rates of pay or other forms of compensation; and (8) selection for training, including apprenticeship.
- (c) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.
- (d) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- (e) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.
- (f) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.
- (g) The Contractor shall furnish all information and reports required by Executive Order 11246, as amended and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto. The Contractor shall permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (h) In the event of a determination that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts, or federally assisted construction contracts under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.
- (i) The Contractor shall include the terms and conditions of this clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor. The Contractor shall take such action with respect to any subcontractor or purchase order as the Secretary of Housing and Urban Development or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided that if the

Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

17. Dissemination or Disclosure of Information

No information or material shall be disseminated or disclosed to the general public, the news media, or any person or organization without prior express written approval by the HA.

18. Contractor's Status

It is understood that the Contractor is an independent contractor and is not to be considered an employee of the HA, or assume any right, privilege or duties of an employee, and shall save harmless the HA and its employees from claims suits, actions and costs of every description resulting from the Contractor's activities on behalf of the HA in connection with this Agreement.

19. Other Contractors

HA may undertake or award other contracts for additional work at or near the site(s) of the work under this contract. The contractor shall fully cooperate with the other contractors and with HA and HUD employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or HA employee.

20. Liens

The Contractor is prohibited from placing a lien on HA's property. This prohibition shall apply to all subcontractors.

21. Training and Employment Opportunities for Residents in the Project Area (Section 3, HUD Act of 1968; 24 CFR 135)

- (a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- (b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.
- (c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of

apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

- (d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.
- (e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.
- (f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

22. Procurement of Recovered Materials

- (a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.
- (b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of \$10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of \$10,000 of the item both under and outside that contract.

EXHIBITS

CITY OF POUGHKEEPSIE
Purchasing Department
BID FORM

Bid submitted by: _____

The undersigned hereby designates as his office to which such notice of acceptance may be mailed or delivered:

The vendor hereby agrees to the provisions of Section 103-a of the General Municipal Law which requires that upon the refusal of a person, when called before a Grand Jury to testify concerning any transaction, or contract had with the State, any political subdivision thereof, a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract,

(c) “such person, and any firm partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or any public department, agency or official thereof, for goods, work or services, for a period of five years after such refusal, and

(b) any and all contracts made with any municipal corporation or any public department, agency or official thereof, since the effective date of this law, by such person, and by any firm, partnership or corporation of which he is a member, partner, director or officer may be cancelled or terminated by the municipal corporation without incurring any penalty or damages on account of such cancellation or termination, but any moneys owing by the municipal corporation for goods delivered or work done prior to the cancellation or termination shall be paid.”

The vendor does hereby certify that he or it is under no such impediment or disqualification from bidding created under Section 103-b of the General Municipal Law of the State of New York.

NON- COLLUSION AFFIDAVIT

As required by Section 139-d of the New York State Finance Law, the bidder certifies that:

- (c) the bid has been arrived at by the bidder independently and has been submitted without collusion with any other vendor of materials, supplies, or equipment of the type described in the invitation for bids, and
 - (b) the contents of the bid have not been communicated by the bidder, nor, to its best knowledge and belief, by any of its employees or agents, to any person not an employee or agent of the bidder or its surety on any bond furnished herewith prior to the official opening of the bid. The signature of the Contractor to this contract shall be deemed a specific subscription to the certificate required pursuant to Section 139-d of the State Finance Law and the Contractor affirms that the statements therein contained are true under the penalties of perjury.”
- I No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

Signed _____

By _____
(President)

Dated _____

If a corporation, give the State of Incorporation, using the phrase "corporation organized under the laws of

_____” ."

If a partnership, give names of partners, using also the phrase "co-partners trading and doing business under the firm name and style of

_____” ."

If an individual using a trade name, give individual name, using also the phrase "an individual doing business under the firm name and style of

_____” ."

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the City receive information that a Bidder/Contractor is in violation of the above-referenced certification, the County will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the County shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

The County reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she is the
_____ of the _____ Corporation and that
neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

SIGNED _____

SWORN to before me this

_____ day of _____ 2024

Notary Public: _____

**CITY OF POUGHKEEPSIE
POUGHKEEPSIE, NEW YORK
RFQ-COP-08-24-04**

Planning Coordinator

Receipt of Addendum:

Addendum No.

Date Received

REFERENCE FORM (Duplicate as needed – 3 Required*)

For: _____

Name of Reference: _____

Address: _____

City: _____ State: _____ Zip: _____

Contact Person: _____

Phone: _____

Email: _____

Contract Value: _____

Dates of Contract: _____

Scope of Contract: _____

THIS SPACE FOR CPOK/PHA USE ONLY

*** Failure to provide required references may result in removal from consideration for contract ward ***

AUTHORIZATION FOR RELEASE OF INFORMATION

The undersigned hereby authorizes and request any person, firm or corporation to furnish any information requested by the City of Poughkeepsie in verification of the recitals comprising this _____ day of _____, 20____.

Name of Contractor: _____

By: _____

Title: _____

STATE OF _____)
COUNTY OF _____) SS

_____ being duly sworn, deposes and says that he is _____ of _____ and that the answers to the foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this _____ day _____, 20____

NOTARY PUBLIC

My commission expires: _____

**REQUEST FOR
QUALIFICATIONS RFQ
COP-08-24-04
COMPREHENSIVE PLANNING SERVICES**

STATEMENT OF QUALIFICATIONS

All questions must be answered in a clear and comprehensive manner. If necessary, questions may be answered on separate attached sheet(s). This document must be notarized by a notary public.

1. Name of Company: _____

Address: _____

City/State/Zip: _____

Telephone Number: _____

Fax Number: _____

Email: _____

2. Name of Owner(s): _____

Address: _____

City/State/Zip: _____

Telephone Number: _____

Email: _____

3. Date Company was Established: _____

4. Are you a Sole Proprietorship?: _____

Partnership?: _____

Joint Venture?: _____

Corporation? _____

If a corporation, please enclose a copy of corporation papers and corporate seal.

5. How many years have you been engaged in business under your present firm or trade name? _____

**REQUEST FOR
QUALIFICATIONS
RFQ COP-08-24-04
COMPREHENSIVE PLANNING SERVICES**

JOINT VENTURE QUESTIONNAIRE

The following questionnaire must be fully completed and submitted concurrently with the Contractor's Occupation Statement by all Contractors submitted as a joint venture.

Names of Firms involved in the Joint Venture: _____

-
1. Specify the percent of Minority Business Enterprise/Women Business enterprise (MBE/WBE) ownership in terms of profit and loss sharing.
 2. Describe the Capital Contributions by each Joint Venturer.
 3. Describe the financial controls of the Joint Venture: Who will keep the books, how will expenses be reimbursed and what is the authority of each Joint Venturer to commit to obligate the others?
 4. Explain the relationship of ownership, options for ownership or loans between the Joint Venturers.
 5. How and by whom will the on-site work be supervised?
 6. Who will be responsible for material purchases and how will the purchases be financed?
 7. Who will provide the equipment, the estimated cost thereof and how will the equipment be financed?
 8. How and from whom will bonding be acquired; insurance; name of company(s) providing bonding and insurance.
 9. Describe the experience and business qualifications of each Joint Venturer.
 10. Submit copies of any Joint Venture Agreement.

Signature of Affiant

Signature of Affiant

Date

Date

Certifications and Representations of Offerors Non-Construction Contract

U.S. Department of Housing
and Urban Development
Office of Public and Indian Housing

OMB Approval No: 2577-0180 (exp. 7/30/96)

Public reporting burden for this collection of information is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

This form includes clauses required by OMB's common rule on bidding/offering procedures, implemented by HUD in 24 CFR 85.36, and those requirements set forth in Executive Order 11625 for small, minority, women-owned businesses, and certifications for independent price determination, and conflict of interest. The form is required for nonconstruction contracts awarded by Housing Agencies (HAs). The form is used by bidders/offerors to certify to the HA's Contracting Officer for contract compliance. If the form were not used, HAs would be unable to enforce their contracts. Responses to the collection of information are required to obtain a benefit or to retain a benefit. The information requested does not lend itself to confidentiality.

1. Contingent Fee Representation and Agreement

(a) The bidder/offeror represents and certifies as part of its bid/offer that, except for full-time bona fide employees working solely for the bidder/offeror, the bidder/offeror:

(1) ☐ has, ☐ has not employed or retained any person or company to solicit or obtain this contract; and

(2) ☐ has, ☐ has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(b) If the answer to either (a)(1) or (a)(2) above is affirmative, the bidder/offeror shall make an immediate and full written disclosure to the PHA Contracting Officer.

(c) Any misrepresentation by the bidder/offeror shall give the PHA the right to (1) terminate the resultant contract; (2) at its discretion, to deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

2. Small, Minority, Women-Owned Business Concern Representation

The bidder/offeror represents and certifies as part of its bid/offer that it:

(a) ☐ is, ☐ is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) ☐ is, ☐ is not a women-owned small business concern. "Women-owned," as used in this provision, means a small business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) ☐ is, ☐ is not a minority enterprise which, pursuant to Executive Order 11625, is defined as a business which is at least 51 percent owned by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals.

For the purpose of this definition, minority group members are:

(Check the block applicable to you)

- | | |
|---|---|
| ☐ Black Americans | ☐ Asian Pacific Americans |
| ☐ Hispanic Americans | ☐ Asian Indian Americans |
| ☐ Native Americans | ☐ Hasidic Jewish Americans |

3. Certificate of Independent Price Determination

(a) The bidder/offeror certifies that—

(1) The prices in this bid/offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder/offeror or competitor relating to (i) those prices, (ii) the intention to submit a bid/offer, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this bid/offer have not been and will not be knowingly disclosed by the bidder/offeror, directly or indirectly, to any other bidder/offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder/offeror to induce any other concern to submit or not to submit a bid/offer for the purpose of restricting competition.

(b) Each signature on the bid/offer is considered to be a certification by the signatory that the signatory:

(1) Is the person in the bidder/offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above (insert full name of person(s) in the bidder/offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder/offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

- (c) If the bidder/offeror deletes or modifies subparagraph (a)2 above, the bidder/offeror must furnish with its bid/offer a signed statement setting forth in detail the circumstances of the disclosure.

4. Organizational Conflicts of Interest Certification

- (a) The Contractor warrants that to the best of its knowledge and belief and except as otherwise disclosed, it does not have any organizational conflict of interest which is defined as a situation in which the nature of work under a proposed contract and a prospective contractor's organizational, financial, contractual or other interest are such that:

- (i) Award of the contract may result in an unfair competitive advantage;
- (ii) The Contractor's objectivity in performing the contract work may be impaired; or
- (iii) That the Contractor has disclosed all relevant information and requested the HA to make a determination with respect to this Contract.

- (b) The Contractor agrees that if after award he or she discovers an organizational conflict of interest with respect to this contract, he or she shall make an immediate and full disclosure in writing to the HA which shall include a description of the action which the Contractor has taken or intends to eliminate or neutralize the conflict. The HA may, however, terminate the Contract for the convenience of HA if it would be in the best interest of HA.

- (c) In the event the Contractor was aware of an organizational conflict of interest before the award of this Contract and intentionally did not disclose the conflict to the HA, the HA may terminate the Contract for default.

- (d) The Contractor shall require a disclosure or representation from subcontractors and consultants who may be in a position to influence the advice or assistance rendered to the HA and shall include any necessary provisions to eliminate or neutralize conflicts of interest in consultant agreements or subcontracts involving performance or work under this Contract.

5. Authorized Negotiators (RFPs only)

The offeror represents that the following persons are authorized to negotiate on its behalf with the PHA in connection with this request for proposals: (list names, titles, and telephone numbers of the authorized negotiators):

6. Conflict of Interest

In the absence of any actual or apparent conflict, the offeror, by submission of a proposal, hereby warrants that to the best of its knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement, as described in the clause in this solicitation titled "Organizational Conflict of Interest."

7. Offeror's Signature

The offeror hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

Signature & Date:

Typed or Printed Name:

Title:

Electronic Bid Submission (EBS) User Guide.

Electronic Bid Submission (EBS) User Guide for the City of Poughkeepsie, New York

About Bidnet Direct

State and local government agencies throughout the State of New York, including the County of Dutchess, utilize Bidnet Direct for the distribution of solicitations, documents, and addendum. In addition, many utilize the electronic bid submission option for vendors to submit responses directly online through the platform. Answers to some frequently asked questions regarding electronic bid submission are listed below. Register to receive notifications and respond to solicitations at <https://www.bidnetdirect.com/new-york>

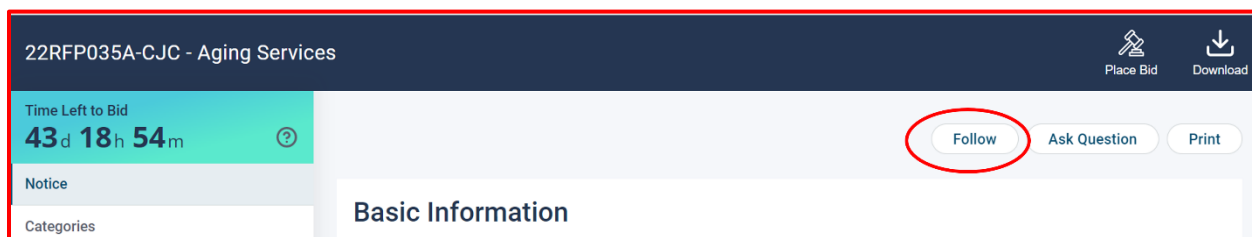
What is an Electronic Bid Submission?

The Electronic Bid Submission (EBS) is the electronic transfer of proposal bid data between a supplier and a contracting authority. The EBS feature allows suppliers to submit bids/proposals online via Bidnet Direct. The EBS feature includes safeguards to ensure the security and authenticity of the material being transferred. Vendors must be registered at to <https://www.bidnetdirect.com/new-york> participate in EBS.

When do buyers see my submission?

Submitted documents are stored securely with a high level of security. All bids remain encrypted and not readable until bids are opened by the buyer and only after the closing date and time have passed.

What should I do before I submit a bid?



Verify that you are a Follower of this Solicitation (if so, the top button will indicate that you are Following). You should be following a solicitation to be alerted of ANY addendum or communication regarding the solicitation (note that a change in registration type may be required to Follow).

Please review the addendum and communication tab for any information that may have already been issued and make certain to download existing documents and/or addendum.

You may have to click on Intent to Bid before submitting a formal Bid. This is an optional, but commonly used, request by buyers.

All registered vendors can place an electronic bid when accepted by buyers. Each bid response will be slightly different based on the agency's requirements. The online bid submission process will take you step-by-step through what is needed. This information should also be in the documents that you have already read outlining the requirements. Some solicitations will need only pricing, others need specific documents, etc.

How do I place a new bid?

The first step is to hit the *PLACE BID*.

The Place a Bid modal window appears. Select "Place a new Bid" and click on Continue.

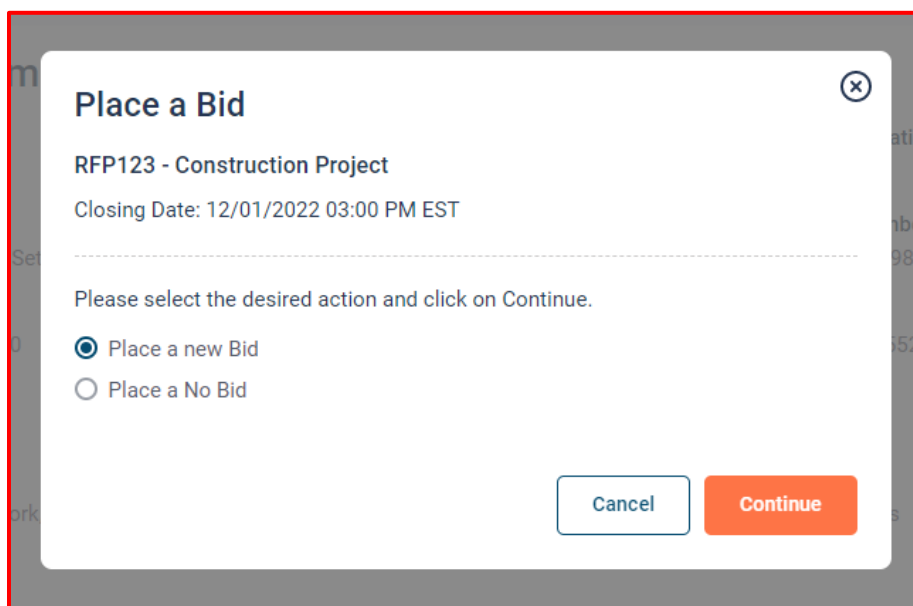


Figure 1 *Place bid* pop-up window

Creating a Bid typically takes place in three steps: the Proposal, the Submission, and the Confirmation. The steps will be outlined so that you understand when to upload documents, enter in pricing or an online response, and/or upload a spreadsheet with pricing and items. A red "Bid Not Submitted" will show until your bid has been successfully submitted.

How do I attach my documents to submit?

You can either drag and drop or browse your computer for files to upload. To Browse for a file or set of files to upload, simply click on the link labeled “Browse for your file” and select the files from your computer.

Or, you can simply drag and drop the files one at a time in the Add File area or on the Add File button. If you have many documents in a compressed file, drag and drop the file in the Import ZIP File area or on the Import ZIP File button. The files will appear in the File section.

Once the files are uploaded, click on the next tab. This might be the Pricing tab or the Questions tab, depending on the type of Solicitation.

The screenshot shows the 'Create Bid' interface for 'RFP123 - Construction Project'. The top bar includes the project name, status 'BID NOT SUBMITTED', closing date '12/01/2022 03:00 PM EST', and time left to bid '40d 22h 22m'. The main section is titled 'Create Bid' with three steps: 1 Proposal, 2 Submission, and 3 Confirmation. The 'Documents' tab is active, showing a 'Bid Documents - Bid Documents' section with an 'OPTIONAL' label. Below this, there are two drag-and-drop areas for files and zip files. A table below shows the uploaded document 'RFP123 - Construction Proposal.pdf' with a size of 491 Kb, uploaded on 11/01/2022 at 11:11 AM EDT, and a status of 'COMPLETED'. At the bottom, there are 'Cancel', 'Save & Quit', and 'Next' buttons.

File	Size	Uploaded Date	Processing Status
RFP123 - Construction Proposal.pdf	491 Kb	11/01/2022 11:11 AM EDT	COMPLETED

Figure 2 Create Bid: Proposal - Documents tab – Attach a File

How do I add pricing information?

The Create Bid screen will walk you through what type, if any, pricing information is expected for you to fill in. Often, pricing is included as part of the documents that you upload within your proposal. When prompted, fill out the information in either lump sum or line item bidding, depending on the fields that appear.

You can then click “Next” or, if you need to save it and come back, hit “Save and Quit”.

PLEASE NOTE:

BID PROPOSALS ARE TO BE UPLOAD AS A SINGLE PDF FILE AND SHALL INCLUDE ALL REQUIRED DOCUMENTS

RFP123 - Construction Project

Status: **BID NOT SUBMITTED** Closing Date: 12/01/2022 03:00 PM EST Time Left to Bid: 40d 22h 22m

Create Bid

1 Proposal 2 Submission 3 Confirmation

Documents Pricing

Total Bid Price*

Corresponds to the base price, excluding taxes.

Previous Cancel Save & Quit Next

Figure 3 Create Bid: Pricing tab

What if I have to submit multiple line items?

If there are multiple line items, a template will appear you can simply download the template, fill in your pricing and any comments and then upload the file.

Documents Pricing

Download Template Import Proposals

Items	Bid
-------	-----

Figure 4 Multi-line Item: Download Template Button

	B	C	D	E	F	G	H
1	Code	Description	UOM	Quantity	Price *	Comment	Total Cost
2	J1343	Painting	Square Foot/Feet	100	25.25		2525
3	P1234	Flooring	Roll	250	21.34		5335
4	R222	Lighting	Unit	20	45.2		904
5							

Figure 5 Multi-line Item: Excel Spreadsheet Format

Once the template is filled out, you can upload the file by clicking on the **Import Proposals** button. The list will fill itself out with the information taken from the **XLS** file.

The screenshot shows the 'Pricing' tab with a table of items. A red arrow points to the 'Import Proposals' button. The table has columns for 'Items' and 'Bid'. The items listed are:

Items	Bid
J1343 - Painting UOM Square Foot/Feet Qty 100	Price / Bulk* 25.25 + Add Comment Quantity 100 Square Foot/Feet Total Cost \$2,525.00
P1234 - Flooring UOM Roll Qty 250	Price / Can* 21.34 + Add Comment Quantity 250 Roll Total Cost \$5,335.00
R222 - Lighting UOM Unit Qty 20	Price / Bulk* 45.20 + Add Comment Quantity 20 Unit Total Cost \$904.00
Total \$8,764.00	

Figure 6 Multi-line Item: Import Template

Depending on the solicitation, there may also be a list of questions to be answered on the electronic submission.

The screenshot shows the 'Questions' tab with three questions to be answered:

- 1 Delivery Date***
When can you delivery?
- 2 Varieties***
How many varieties of products do you have?
- 3 Bid Price***
Please detail your bid price \$

At the bottom, there are buttons: CANCEL, SAVE & QUIT, PREVIOUS, and NEXT.

Figure 7 Create Bid: Questions Tab

Submitting the bid

You will need to re-enter your Bidnet Direct user password before officially submitting the bid.

The screenshot shows the 'Create Bid' interface for RFP123 - Construction Project. The top navigation bar includes the project name, status 'BID NOT SUBMITTED', closing date '12/01/2022 03:00 PM EST', and time left to bid '40d 22h 22m'. The 'Create Bid' section has three steps: Proposal, Submission (active), and Confirmation. Under 'Exceptions', the user has selected 'No'. The 'Bidder Compliance & Authentication' section contains a declaration and two input fields: 'Bid Submitted By (Full Name)*' with 'John Doe' and 'For security reasons please re-enter your password*' with masked characters. At the bottom, there are buttons for 'Previous', 'Cancel', 'Save & Quit', and 'Submit Bid'. A red arrow points to the 'Submit Bid' button.

Figure 8 Bidder Compliance & Authentication Before Submission

And finally, you will need to confirm to submit the bid.

The screenshot shows a 'BID SUBMISSION CONFIRMATION' dialog box. It contains the text: 'Submission will make the bid active and submit it to the solicitation owner. Are you sure you want to proceed?'. Below the text are two buttons: 'NO' and 'YES'.

Figure 9 Confirm Submission

I am having trouble submitting a bid or have a Bidnet Direct question, who can I contact for assistance?

The Bidnet Direct Vendor Support team is available M-F from 8 a.m. – 8 p.m. ET. You can Contact our team at (800) 835-4603, option 2 or support@bidnet.com

Wallace Roberts & Todd, LLC

123 S. Broad Street, Suite 1450

Philadelphia, PA 19109

wkim@wrtdesign.com

215.430.5060

09.23.2024



RFQ-COP-08-24-04

COMPREHENSIVE PLANNING SERVICES FOR CHOICE NEIGHBORHOOD

SUBMITTED TO: **City of Poughkeepsie**

SUBMITTED BY: **WRT** with MASS Design Group and Ideas and Action

File #1

Letter of Interest

Addendum

Forms



MERIDEN 2020 CHOICE NEIGHBORHOOD PLAN + MERIDEN COMMONS | WRT
MERIDEN, CT

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- A** LETTER OF INTEREST Page 5
- B** SEPARATE LETTER INDICATING FEE PROPOSAL Separate Document
- C** ADDENDA..... Page 10
- D** FORMS Page 50



A

LETTER OF INTEREST

"BLOSSOM AT BARTRAM" CHOICE NEIGHBORHOOD PLAN | WRT
PHILADELPHIA, PA



September 23, 2024

Shirley Davison, Purchasing Agent
City of Poughkeepsie
62 Civic Center Plaza
Poughkeepsie, NY 12601

RE: RFQ-COP-08-24-04: Comprehensive Planning for Choice Neighborhood

On behalf of WRT and our partners MASS Design and Ideas and Action, we would like to express our enthusiasm and interest in the Planning Coordinator role to support the development of a transformative Choice neighborhood plan for the Northside neighborhood in Poughkeepsie, NY. WRT brings over 60 years of experience in planning and design, and a proven track record of collaboration with communities to create actionable plans that address complex urban challenges and support a higher quality of life for residents.

WRT's qualifications and experience in HUD's Choice Neighborhoods program is distinguished by a proven track record of transformed communities - large and small. To date we have been involved in over 20 Choice projects, demonstrating impact in small legacy cities such as Meriden, CT and Hagerstown, MD to large cities such as Houston, TX and Philadelphia, PA. The strength of our plans and consulting stems from 30 years of mixed-finance affordable housing experience in HUD's HOPE VI program and LIHTC policies in various states. In New York state, WRT is currently implementing large scale LIHTC developments in Buffalo, Schenectady, and Kingston.

WRT customizes every assignment based on each community's unique assets and challenges. Planning is a team sport. In all of our assignments we value our partnerships with the client group, project partners, and the community. When we look at Poughkeepsie's Northside neighborhood, we believe the commitment of highly skilled partners—including Poughkeepsie Children's Cabinet—existing amenities, and neighborhood assets make the Northside neighborhood an ideal location for a Choice Neighborhoods Transformation Plan. Both Poughkeepsie Housing Authority (PHA) sites are located amidst viable mixed-income development, there is a great opportunity to upgrade and increase the variety and amount of housing options for residents. To that end, Downtown Poughkeepsie's developing Main St., College Hill Park and the Walkway over the Hudson are strong community assets to build from.

WRT's multi-disciplinary approach to neighborhood planning sets up communities for transformation. Our planners are well versed in housing finance and policy, our landscape architects bring their expertise in designing culturally relevant spaces, and our architects are intimately familiar with the design and construction of mixed-income housing. Most notably, the intentionality in our community engagement practices has repeatedly resulted in tangible plans that have long-term positive impacts on low and moderate-income families.

We are committed to dedicating the necessary resources, expertise, and collaborative approach to ensure the successful and timely completion of this project. WRT values the opportunity to work closely with the City of Poughkeepsie, the Poughkeepsie Housing Authority, and community stakeholders to create a plan that centers and reflects the voices and visions of residents for a truly transformative plan.

The WRT Team states our interest and willingness to commit the resources necessary for the successful and timely completion of the project. This statement of interest will remain valid for not less than ninety (90) days from our submission on September 23, 2024. Thank you for your consideration.

Sincerely,

Woo Kim, AICP, PP, LEED AP
Principal | Urban Designer + Planner
Principal-in-Charge
123 S. Broad Street, Suite 1450
Philadelphia, PA 19109
215.430.5060 | wkim@wrtdesign.com

B

**SEPARATE LETTER
INDICATING FEE
PROPOSAL**

UNDER SEPARATE COVER
PER RFQ INSTRUCTIONS



"BLOSSOM AT BARTRAM" CHOICE NEIGHBORHOOD PLAN | WRT
PHILADELPHIA, PA



ADDENDA (SAMPLE PROJECT WORK)

In this section:

Selected pages from:

Hagerstown Choice Neighborhood Plan
(12-13)

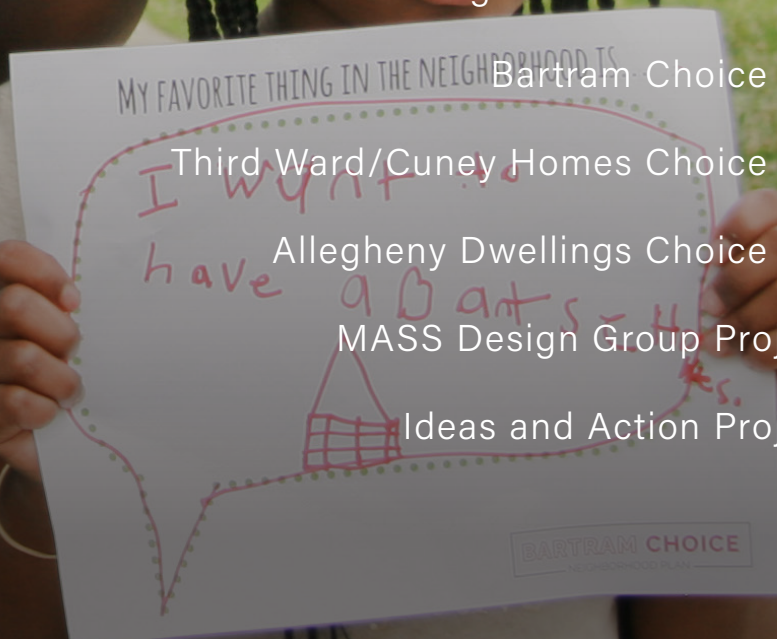
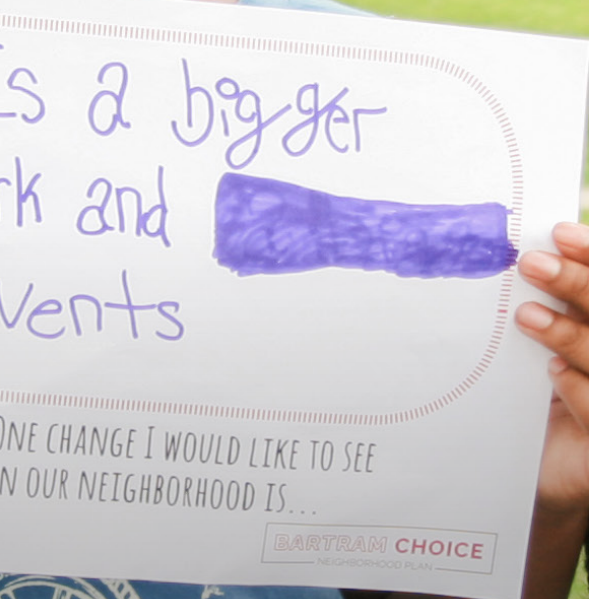
Bartram Choice Neighborhood Plan
(14-15)

Third Ward/Cuney Homes Choice Neighborhood Plan
(16-17)

Allegheny Dwellings Choice Neighborhood Plan
(18-19)

MASS Design Group Project Work Examples
(20-41)

Ideas and Action Project Work Examples
(42-47)



meet our community ambassadors!



ALYSSA
MOOLE SCHOOL STUDENT AND RESIDENT AT FREDERICK MANOR

Alyssa is most concerned about the safety of her community and older kids having things to do that keep them from getting bored. She believes boredom is leading to bullying and nuisance crimes being committed in the neighborhood.

“We need more color. Small gardens, if people could plant them. People want flower boxes instead of bushes. It would just be so much prettier, people would be like ‘Oh! That’s Frederick Manor!’ It’s nice and colorful, and they have good stuff there.”



LISA
FREDERICK MANOR RESIDENT

Originally from Sharpsburg, Lisa moved to Hagerstown and has lived in Frederick Manor for 10 years. She is honored to be a Community Ambassador for the Hagerstown Choice Neighborhoods process. Lisa loves the beauty of her city and wants “to see Hagerstown come together and push forward.”

“It’s a very quiet area, you can hear a pin drop at times and bringing the community together would be awesome. We’re better together. I think there could be better communication for better balance.”



MONIQUE
PARKSIDE HOMES RESIDENT

Monique has been a key holder for the community center at Parkside Homes for over 20 years, as well as a resident for over 30 years, and has lived in Hagerstown for over 50 years. She is incredibly proud of her three children she raised in the city and is deeply involved in supporting today’s youth.

“It [Jonathan Street] used to be where everyone would hang out like family... It’s so much going on now, so much violence. We need to get back to Community, back to love. Stop the hate. Stop the violence. Try to come together and reunite.”

COMMUNITY AMBASSADORS

Alyssa (Youth Ambassador)	Monique (Broadus)
Jennifer Calvin	Pam Hutchinson
Lisa Knight	

Hagerstown Choice Neighborhoods

Hagerstown Choice Neighborhood

Hagerstown, MD

This spread is an excerpt from the Hagerstown Choice Neighborhood Plan outline with content that introduces our community ambassadors for the project.

neighborhood leadership series

This popular series was designed for all Bartram Village and neighborhood residents to enhance communication and leadership skills, to meet neighbors with similar interests, and to learn how to take an active part in the Bartram Choice plan and other community planning and development efforts. Six two-hour sessions were held from November 2018 to February 9, 2019, at Bartram Village.

- **Session 1: Learning how to handle difficult community decisions.**
- **Session 2: Engage Neighborhood Leadership Series.**
- **Session 3: Engage Neighborhood Leadership Series.**
- **Session 4: Change is good but so is affordability.**
- **Session 5: The power of design and nature.**
- **Session 6: Take the lead!**

WRT

"Blossom at Bartram" Choice Neighborhood

Philadelphia, PA

This spread, taken from the final Choice Neighborhood Transformation Plan, highlights the community capacity building efforts for Bartram Choice.

On-site housing - Cuney Homes

Summary of detailed program

Block	Building Type	BR	BH	2BR	3BR	4BR	Total Homes	Mixed-use GSF
Block A	Multi-family	65	22	4	-	-	85	24,960.30
Block B	Multi-family	57	23	-	-	-	76	-
Block C	Townhome	4	4	7	-	-	15	-
Block D	Multi-family	42	26	8	-	-	76	21,948.30
Block E	Townhome	-	-	8	3	-	11	-
Block F	Multi-family	30	27	4	-	-	61	72
Block G	Townhome	4	4	5	2	15	-	-
Block H	Multi-family	12	10	4	-	-	26	-
Block I	Townhome	4	35	-	-	-	39	-
Block J	Townhome	-	-	9	8	-	17	-
Block K	Multi-family	6	8	-	18	-	30	-
Block L	Multi-family	6	9	2	-	-	17	-
Block M	Multi-family	25	30	10	-	-	65	-
Block N	Multi-family	24	16	-	-	-	40	3,843.00
Block O	Multi-family	5	-	-	-	-	5	-
Block P	Multi-family	35	17	3	-	-	55	-
Block Q	Multi-family	12	-	-	-	-	12	10,500.00
Block R	Multi-family	30	25	9	-	-	64	-
Block S	Garden building	-	9	3	-	-	12	-
Block T	Multi-family	48	34	8	-	-	90	-
Block U	Multi-family	28	6	-	-	-	34	4,990.00
Block V	Multi-family	12	-	-	-	-	12	-
Block W	Multi-family	12	-	-	-	-	12	-
TOTAL							847 Homes	64,179.60 GSF



LEGEND

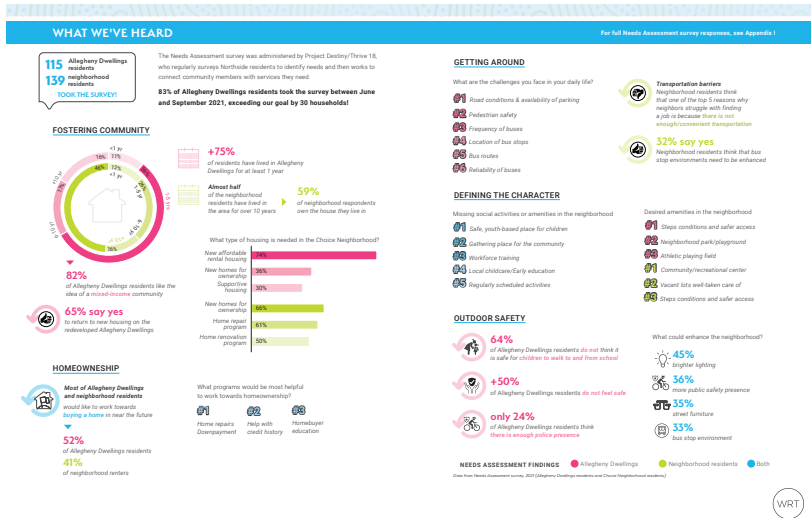
- Multi-use
- Multi-family
- Townhome/Single
- Commercial
- Neighborhood
- Low-rise

The redeveloped Cuney Homes, 82 homes with ground floor space for services and local businesses, low-rise homes for seniors, and large open space with gathering space for the community. The plan also includes a new playground, a new community center, and a new library. The plan also includes a new community center, a new library, and a new playground. The plan also includes a new community center, a new library, and a new playground.

Third Ward/Cuney Homes Choice Neighborhood

Houston, TX

This spread shows the final site plan for the redevelopment of the Cuney Homes public housing site—highlighting one-for-one replacement and the mixed-used approach for the site.



Allegheny Dwellings Choice Neighborhood

Pittsburgh, PA

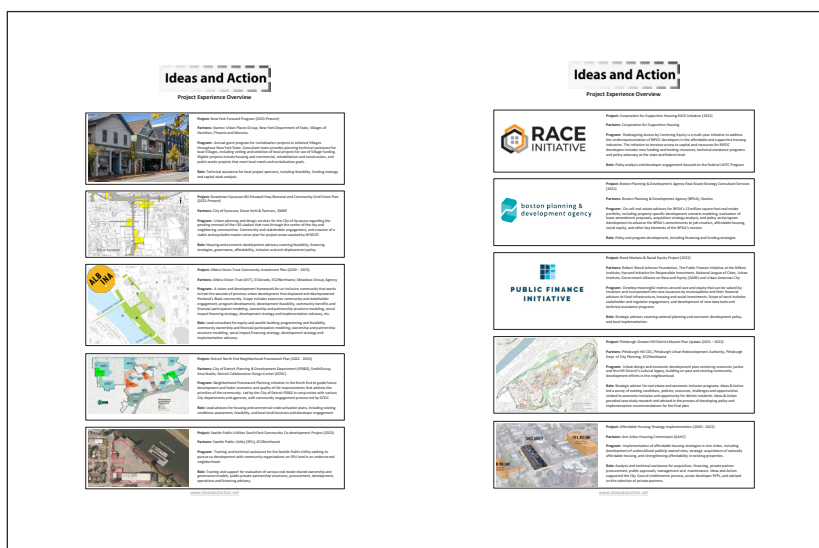
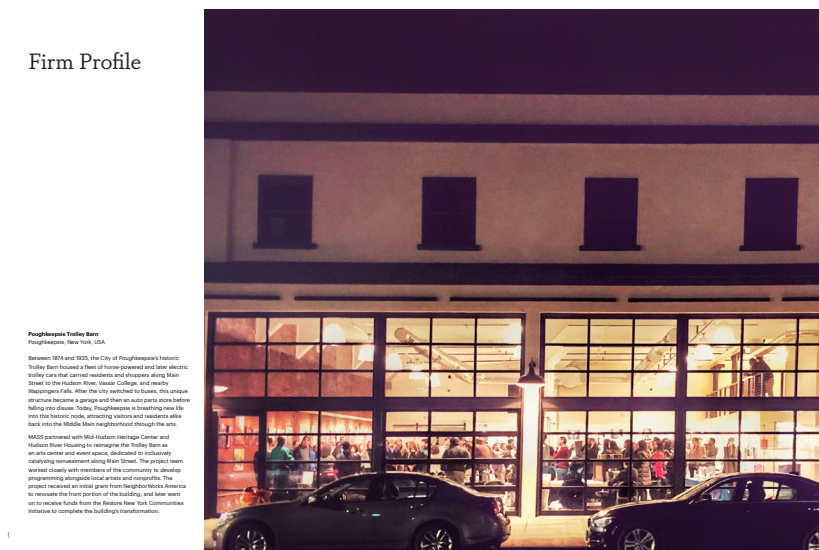
This spread highlights our approach to visualizing findings from the resident needs assessment, which was key to building understanding and awareness of priorities and opportunities for the transformation plan.

MASS Design Group Qualifications

These spreads are a compilation of project qualifications and work samples from our partner MASS Design Group.

Ideas and Action Qualifications

These spreads are a compilation of project qualifications and work samples from our partner Ideas and Action.



meet our community ambassadors!



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AT FREDERICK MANOR

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- ▲ (left) Learning how to handle difficult community decisions.
- ▲ (right) Neighborhood Leadership Series Celebration.
- ▶ (right) Neighborhood Leadership Series participants with speakers Dr. South and Chantay Love.



The sessions began with dinner from local restaurants and covered the following topics:

- **Session 1: Right under our noses—the building blocks of change.** This session examined ways to plan meaningful community development by mapping and building upon local assets and the passion and talent of area residents.

Speakers: Mary Morton, Urban Designer & Planner at WRT and Regina Young, Resident of Eastwick & Founder of Empowered CDC

- **Session 2: Music to my ears—building consensus with your inside voice.** This session explored planning as a shared problem-solving exercise, emphasizing ways to build consensus among different stakeholders and engage a wide range of ages and multicultural groups.

Speakers: Lamar Wilson, Wilson Associates

- **Session 3: Planning in Philadelphia.** This information-packed session provided an overview of the City's vision for the future—Philadelphia 2035—and relevant district plans, and how city agencies and residents work together. Participants also learned about the Citizens Planning Institute (CPI), which introduces Philadelphians to city planning, zoning and the development process so that they can help shape change in their neighborhoods. Local CPI graduates also shared their experiences.

Speakers: Donna Carney, City of Philadelphia Citizen's Planning Institute; Martine DeCamp, Philadelphia City Planning Commission; Local citizen planners — Mark Harrell and Luci Boone

- **Session 4: Change is good but so is affordability.**

With the recent attention Southwest Philadelphia is attracting, many worry about related issues of gentrification. This session explained the different tiers of affordable housing and how it is financed, and discussed strategies to preserve housing affordability long-term

Speakers: Ryan Bailey, Pennrose; Woo Kim, Principal/Urban Planner at WRT; Steve Kuzmicki, Southwest CDC

- **Session 5: The power of design and nature [trauma and resiliency].** With trauma and mental health a large concern for area residents, this session began an important conversation about trauma, healing, and the connection between mental health and outdoor green spaces. Participants also discussed other holistic approaches to healing and coping with trauma.

Speakers: Eugenia South, MD, MSHP, University of PA; Chantay Love, Founder of EMIR Healing Center

- **Session 6: Take the lead!** The final session was led by long-time PHA Resident Council leaders who shared their experiences about coming together and speaking with one voice. This session coincided with a Bus Tour of three recently redeveloped housing sites owned by PHA.

Speakers: Asia Coney, PHA Resident Advisory Board

Afterwards participants joined one another for a final graduation celebration. Over thirty-two participants took part in the leadership series.

On-site housing - Cuney Homes

► Summary of detailed program

Block	Building Type	Bedroom mix				Total homes	Mixed-use GSF
		1BR	2BR	3BR	4BR		
Block A	Multi-family	45	32	8	-	85	24,186.20
Block B	Multi-family	57	21	-	-	78	-
	Townhome	4	4	7	-	15	-
Block C	Multi-family	42	26	8	-	76	21,168.30
	Townhome	-	-	6	3	9	-
Block D	Multi-family	39	27	6	-	72	-
	Townhome	4	4	5	2	15	-
Block E	Multi-family	12	10	4	-	26	-
Block F	Townh/stacked	6	15	-	-	21	-
	Homeownership	-	-	9	8	17	-
Block G	Townh/stacked	6	6	-	18	30	-
	Homeownership	-	5	9	3	17	-
Block J	Multi-family	28	30	10	-	68	-
Block K	Multi-family	24	16	-	-	40	3,843.10
	Live-work	5	-	-	-	5	
	Homeownership	-	-	3	3	6	-
Block L	Multi-family	35	17	-	-	52	11,950.10
	Live-work	12	-	-	-	12	
	Homeownership	-	-	3	3	6	-
Block M	Multi-family	39	25	9	-	73	-
	Garden building	-	9	3	-	12	-
Block N	Multi-family	48	34	8	-	90	-
Block O	Multi-family	24	6	-	-	30	4,991.90
	Live-work	12	-	-	-	12	
TOTAL						867 homes	66,139.60 GSF mixed-use



LEGEND

- Mixed-use
- Multifamily
- Townhomes/Stacked
- Garden
- Homeownership
- Live-work

The redeveloped Cuney Homes.



The redeveloped Cuney Homes comprises 821 homes with ground floor space for services and local businesses, live-work homes for entrepreneurs, and large open space with gathering areas for the community. In addition, 46 affordable homeownership units will be developed on blocks F, G, K, and L. The intergenerational programmed open spaces and the CPTED guidelines in the design will ensure Cuney Homes will be a place where residents can thrive and improve their physical and mental health, continue creating community, and have safe and convenient access to services.

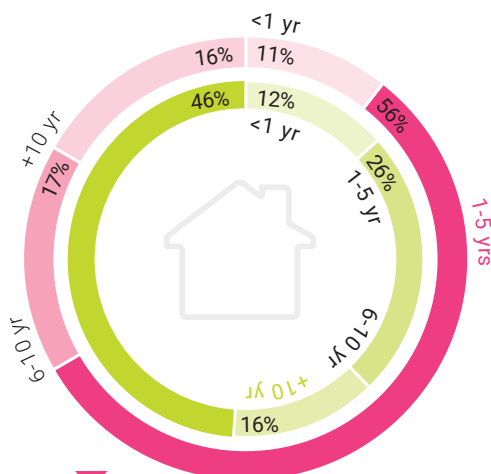
WHAT WE'VE HEARD

115 Allegheny Dwellings residents
139 neighborhood residents
TOOK THE SURVEY!

The Needs Assessment survey was administered by Project Destiny/Thrive 18, who regularly surveys Northside residents to identify needs and then works to connect community members with services they need.

83% of Allegheny Dwellings residents took the survey between June and September 2021, exceeding our goal by 30 households!

FOSTERING COMMUNITY



+75%

of residents have lived in Allegheny Dwellings for at least 1 year



Almost half of the neighborhood residents have lived in the area for over 10 years

59%

of neighborhood respondents own the house they live in

82%

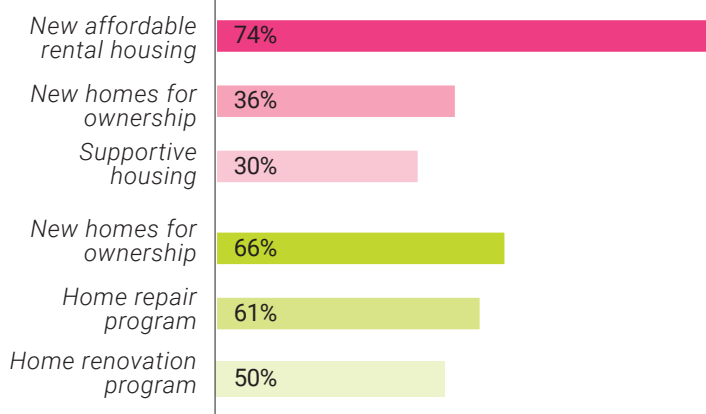
of Allegheny Dwellings residents like the idea of a **mixed-income** community



65% say yes

to return to new housing on the redeveloped Allegheny Dwellings

What type of housing is needed in the Choice Neighborhood?



HOMEOWNERSHIP



Most of Allegheny Dwellings and neighborhood residents would like to work towards **buying a home** in near the future

52%

of Allegheny Dwellings residents

41%

of neighborhood renters

What programs would be most helpful to work towards homeownership?

#1

Home repairs
Downpayment

#2

Help with
credit history

#3

Homebuyer
education

GETTING AROUND

What are the challenges you face in your daily life?

- #1** Road conditions & availability of parking
- #2** Pedestrian safety
- #3** Frequency of buses
- #4** Location of bus stops
- #5** Bus routes
- #6** Reliability of buses



Transportation barriers

Neighborhood residents think that one of the top 5 reasons why neighbors struggle with finding a job is because **there is not enough/convenient transportation**



32% say yes

Neighborhood residents think that bus stop environments need to be enhanced

DEFINING THE CHARACTER

Missing social activities or amenities in the neighborhood

- #1** Safe, youth-based place for children
- #2** Gathering place for the community
- #3** Workforce training
- #4** Local childcare/Early education
- #5** Regularly scheduled activities

Desired amenities in the neighborhood

- #1** Steps conditions and safer access
- #2** Neighborhood park/playground
- #3** Athletic playing field
- #1** Community/recreational center
- #2** Vacant lots well-taken care of
- #3** Steps conditions and safer access

OUTDOOR SAFETY



64%

of Allegheny Dwellings residents **do not** think it is safe for **children to walk to and from school**



+50%

of Allegheny Dwellings residents **do not feel safe**



only 24%

of Allegheny Dwellings residents think **there is enough police presence**

What could enhance the neighborhood?



45%

brighter lighting



36%

more public safety presence



35%

street furniture



33%

bus stop environment

NEEDS ASSESSMENT FINDINGS

● Allegheny Dwellings

● Neighborhood residents

● Both

Data from Needs Assessment survey, 2021 (Allegheny Dwellings residents and Choice Neighborhood residents)

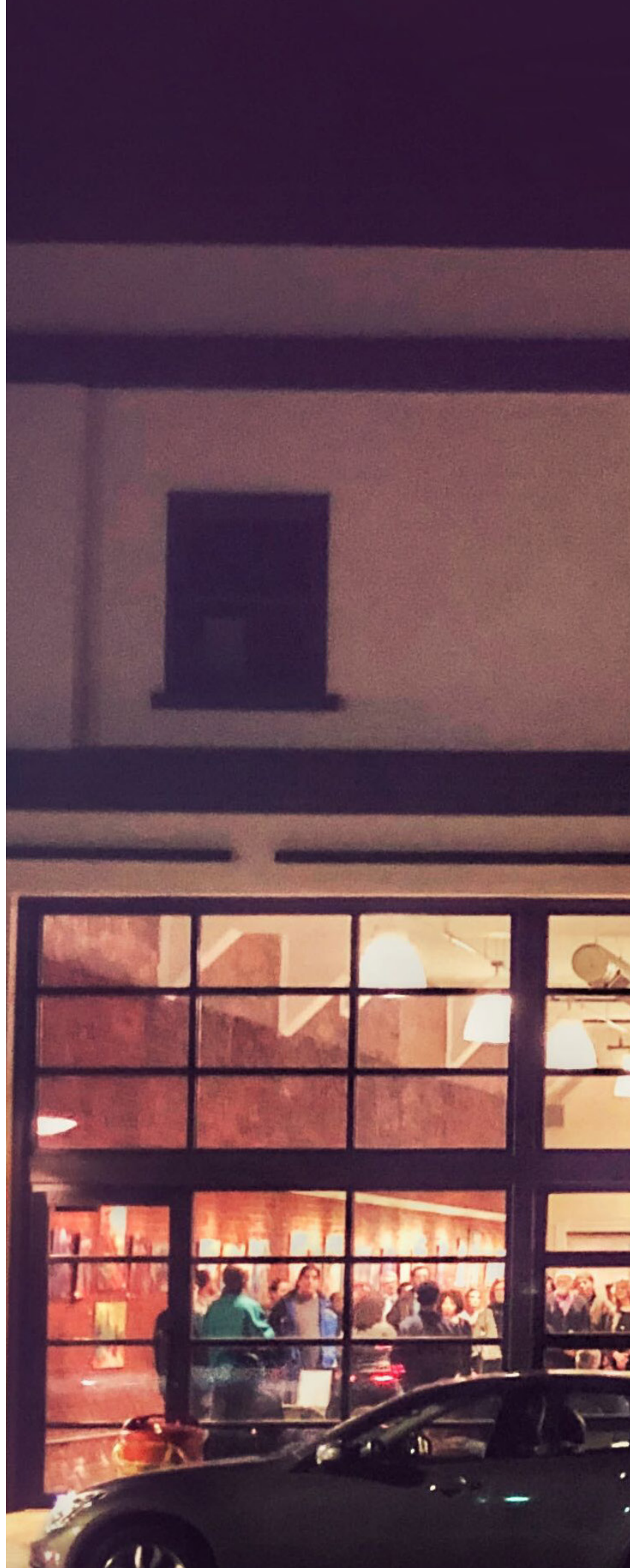
Firm Profile

Poughkeepsie Trolley Barn

Poughkeepsie, New York, USA

Between 1874 and 1935, the City of Poughkeepsie's historic Trolley Barn housed a fleet of horse-powered and later electric trolley cars that carried residents and shoppers along Main Street to the Hudson River, Vassar College, and nearby Wappingers Falls. After the city switched to buses, this unique structure became a garage and then an auto parts store before falling into disuse. Today, Poughkeepsie is breathing new life into this historic node, attracting visitors and residents alike back into the Middle Main neighborhood through the arts.

MASS partnered with Mid-Hudson Heritage Center and Hudson River Housing to reimagine the Trolley Barn as an arts center and event space, dedicated to inclusively catalyzing reinvestment along Main Street. The project team worked closely with members of the community to develop programming alongside local artists and nonprofits. The project received an initial grant from NeighborWorks America to renovate the front portion of the building, and later went on to receive funds from the Restore New York Communities Initiative to complete the building's transformation.





We are 135+ architects,
landscape architects,
builders, engineers,
writers, filmmakers, and
researchers representing
twenty countries across
the globe.

17

different professional registrations
in architecture and engineering

75%

of our board of directors are
women and/or people of color

63%

of our team are people of color

MASS Team Members' Professional Registrations

LEED Leadership in Energy and Environmental Design

RIA Rwanda Institute of Architects

AIA American Institute of Architects

RIBA Royal Institute of British Architects

RAIC Royal Architectural Institute of Canada

IER Institute of Engineers Rwanda

ASLA American Society of Landscape Architects

ICE Institution of Civil Engineers, UK

CIBSE Chartered Institute of Building Services Engineers

SACAP South African Council for the Architectural Profession

RGBO Rwanda Green Building Organization

EDGE Excellence in Design for Greater Efficiencies, IFC

IStructE Institution of Structural Engineers, UK



How We Work

“I haven’t ever seen buildings like this. In the process of making them, MASS has created a different language about what architecture can aspire to be.”

—Chris Anderson, Chief TED Curator

We immerse ourselves

Getting proximate is necessary to understand the unique constraints and opportunities, uncover questions we didn’t know need to ask, build relationships, and develop a shared vision for how design can achieve the project mission. This expanded concept of engagement also meaningfully brings a broader group of stakeholders into the process.

Deep research

We leverage grants from governments and foundations to dig deeper and uncover opportunities to catalyze and amplify the mission of our partners. We have partnered with leading researchers and think tanks, such as the Ariadne Lab, to publish and advocate for this work in peer reviewed journals of medicine and public health, op-eds, and as public policy at the national and international level.

Making architecture

We understand that each choice, each detail, each material selection is an opportunity to create value. It will affect the way services are delivered, determine what and how many jobs are created, the technologies we advance, the mark we leave on the planet, and leave a lasting impact on the people

who build and use the spaces we create. Our philosophy incorporates the most cutting edge technologies in design and fabrication, while also incorporating the value of craft, the handmade, and the locally fabricated.

We stay connected

We measure to understand how well did we do, did this building and landscape achieve our collective goals? We devise post-occupancy evaluations to measure impacts of the project, qualitatively and quantitatively.

We help tell the story

MASS began producing films as a tool to uncover the cultures, histories, and everyday experiences that inform design and make projects possible. The process of collecting narratives helps us understand and convey why a building was needed, who it is being built for, and whose hands constructed it.

We are a collective

MASS Design Group is governed by a board of directors who oversee and advise on the organization and the maintenance of our mission. The board is composed of a diverse group of thought leaders from different sectors and perspectives that meet quarterly to review the organization’s strategy and operations.







“Since MASS began in 2008, what has been central to their ethos and approach is that architecture must be both beautiful and centered on the dignity of the people that it serves.”

—Chelsea Clinton, introducing MASS for the 2017 National Design Award for Architecture





Our mission is to research, build, and advocate for architecture that promotes justice and human dignity.

We help organizations amplify their mission

MASS Design Group is a mission-driven organization founded to support partners in delivering innovative capital projects that fundamentally improve lives and act as enablers of shared prosperity. Our work focuses on leveraging architecture, as well as inclusive design and construction processes, to create better health, justice, equity, and long-term sustainability.

Over the last 12 years, we have supported partners in over 21 countries with design services. We have over 30 projects built or under construction and have served over 500,000 people through our work. Our services include architectural design, master planning, landscape architecture, engineering, and strategic planning, as well as research, evaluation, education, and policy development.

We advocate for justice and human dignity

We believe that approaching architecture as a purpose-built process requires a simple but fundamental shift: we need to think not about what buildings are, but what they do. MASS commits to longterm partnerships with mission-aligned organizations to advance justice and human dignity within schools, housing, health, education, agriculture, and the public realm in the communities in which we work.







We use a multi-disciplinary design approach, viewed through the scope of Performance and Provenance, to deliver a climate positive future that protects and enhances biodiversity, providing life-changing benefits to the communities we serve.

Performance

We design projects that are impactful, efficient, and healthy. We optimize service delivery by leveraging evidence-based research and design strategies that are proven to improve outcomes. We achieve efficiency across projects by leveraging passive systems, paired with low-energy climate control, and optimized use of space. We design for health using deep expertise in designing for air quality, use of healthy materials, and research for improving user well-being. Our landscapes are functional and regenerative — restoring biodiversity and ecosystems.

Provenance

Where our materials come from matters. We use materials that have positive social and environmental impact throughout the supply chain. This starts with transparency to ensure climate positive materials and the use of ethical labor from the source of extraction to the point of installation. What happens to our buildings and materials at their end of life also matters. We design buildings that are durable and adaptable by selecting materials that can be reused in the future.

Hudson Valley Design Lab

In 2016 MASS received support from the Dyson Foundation to launch a pilot project in the heart of downtown Poughkeepsie. Collaborating with Columbia University, the Hudson Valley Design Lab (HVDL) undertook participatory community-based research, established partnerships with leading local organizations, and identified a series of transformative projects in Poughkeepsie. Employing adaptive re-use design and development strategies, the HVDL team has unlocked over \$7.2M of new capital to support projects including the redesign of a disused Trolley Barn into an arts center, masterplan for the activation of the City's decommissioned water cistern; and the revitalization strategy for a neglected but critical waterway that runs through downtown.

HVDL has converted from a philanthropically-driven Lab to a financially sustainable, regionally-focused office with a growing team of designers, researchers, and artists. The MASS Hudson Valley office houses the new Fringe Cities Lab which is transmitting lessons-learned from Poughkeepsie to other cities that share a similar history and challenges. In addition, MASS has several other labs that host an interdisciplinary mix of emergent research, advocacy, and cross-cutting partnerships, supported by philanthropic investment.



College Hill Park Community Day



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First Lady, Jill Biden, visiting Poughkeepsie and offering support for Day One, a key project MASS is working on.

Impact Summary

The Hudson Valley Design Lab has demonstrated how philanthropy can catalyze impact and build a sustainable practice and presence in community over time.

32,010+

population of Poughkeepsie

50+

community events and public workshops

\$7.2M

unlocked capital in Poughkeepsie

18

community initiatives

Inclusive Communities | Northside Collaborative | Poughkeepsie Planning Board | Poughkeepsie Alliance (Board Member) | Successful River Cities Coalition | Dutchess County Climate Smart Communities Task Force | PK Memorial to the Named and Unnamed Slaves | Revive College Hill Park Coalition | The Art Effect (Board Member) | Parent and Community Engagement Committee | Hudson Valley Food Systems Coalition | PFP Farm to School Initiative (guest) | 100 Cups of Coffee | Poughkeepsie Affordable Housing Coalition | The Mid-Hudson Regional Sustainability Coalition | Dutchess Outreach

Project Experience

Family Partnership Center

Poughkeepsie, New York, USA

Poughkeepsie's rich industrial heritage and regional significance make it the Queen of the Hudson, a city with the potential to thrive culturally and socially as a capital of the Mid-Hudson Valley. Yet like so many manufacturing hubs on the Northeast, the city has had difficulty reinventing itself.

MASS began working in Poughkeepsie to complete a conceptual redesign of the Family Partnership Center, a one-stop shop for health and social services housed in the city's historic high school building. The proposed design supported the mission of each of the Center's tenant organizations while increasing the resiliency of the building and its grounds to climate events, and made the building and the watershed it sat on into attractive assets for the city's downtown.

Phase I, completed this year, is a dignified accessible entry pavilion that gives the historic school building a new identity as the vibrant social services hub it has been since 1997.





Hudson Valley Design Lab

Poughkeepsie, NY

Hudson Valley
Farm Hub, Hurley

CSX Rail
Trail

TMT

MLK

Pulaski
Park

US-9

Walkway over the Hudson

Scenic H

Fall Kill

68 Bridge St

289 Main

Day One

316 Main

380 Main

Brigaid + Needs
Assesment
PACE

PK Collaboration
Center
UpToDate

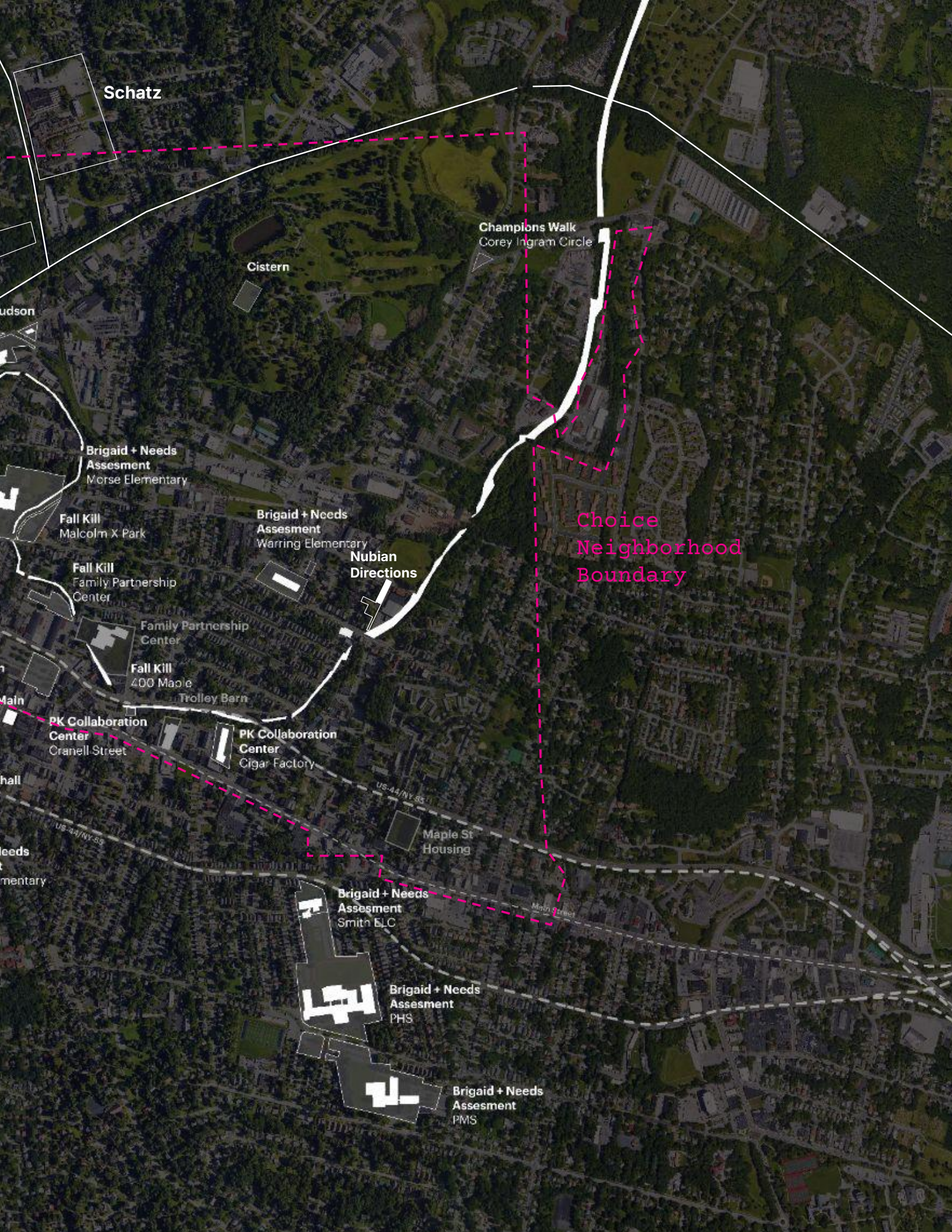
PK Food

YOU

Brigaid + N
Assesment
Clinton Ele

We work at the architectural
and urban design scale to
catalyze a more climate
resilient, ecologically
responsible, and community-
centered city that is deeply
rooted in place.

Hudson River



Schatz

Champions Walk
Corey Ingram Circle

Cistern

Brigaid + Needs
Assessment
Morse Elementary

Fall Kill
Malcolm X Park

Fall Kill
Family Partnership
Center

Family Partnership
Center

Fall Kill
400 Maple

Trolley Barn

PK Collaboration
Center
Cranell Street

PK Collaboration
Center
Cigar Factory

Maple St
Housing

Brigaid + Needs
Assessment
Smith ELC

Brigaid + Needs
Assessment
PHS

Brigaid + Needs
Assessment
PMS

Choice
Neighborhood
Boundary

Hudson Valley Design Lab

Poughkeepsie, New York, USA

Corey Ingram Circle is a celebration of local champions through the collective creation of a new gateway and memorial on Poughkeepsie's Northside.

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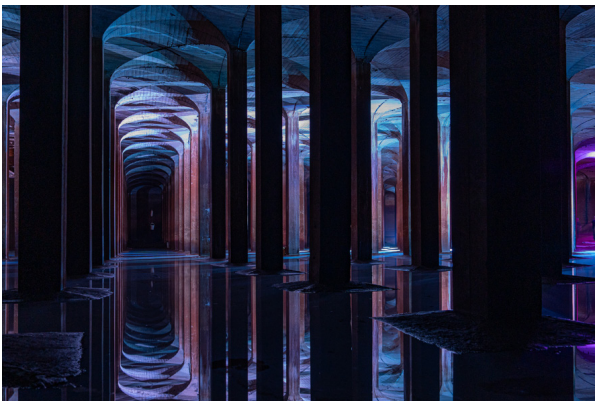
The Youth Opportunity Union (YOU) will be a public recreational and learning hub in Poughkeepsie, replacing the City's YMCA at 35 Montgomery Street.

▼



Youth engagement for Sojourner Truth State Park in Kingston, New York

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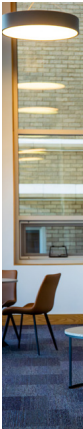


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College Hill Park Cistern: MASS is working with the City of Poughkeepsie to transform a relic of water infrastructure into a regional arts destination and catalyst for city-wide transformation.

MASS's
Partner
houses
for the

▼



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In partnership with Scenic Hudson, MASS is developing community spaces along the Middle Main portion of Po Fall Kill. A series of engagements throughout the city all community members to learn, share memories and ideas part in the design of a central portion of the creek. We a collaboration with local residents to transform this publ an educational, recreational and ecological generator.

First project in Poughkeepsie transformed the Family Partnership Center's main entry into a "community porch." The FPC provides social services, youth programs and healthcare non-profits city.



In partnership with the Art Effect, MASS has worked on the adaptive reuse of a historic transit garage into a community arts hub to revitalize downtown Poughkeepsie.

▼



new
Poughkeepsie's
owned
as, and take
are working in
ic resource into

1



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MASS designed a new state-of-the-art vehicular maintenance shop and farmer training venue for the Hudson Valley Farm Hub, a nonprofit center for regenerative agriculture that fosters an equitable and ecologically resilient food system on approximately 1,600 acres of prime farmland in Hurley, New York.

289 Main Street: Activation of a vacant storefront space on Main Street for commercial and residential uses, as well as a new office space for MASS's Poughkeepsie office.

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Fringe Cities at the Center for Architecture in New York: Exhibition of original research that explores the 20th century transformation of 100 small, independently situated cities that were severely impacted by urban renewal.

58 Parker Ave: Scenic Hudson Offices & Outdoor Community Space

Poughkeepsie, New York, USA





The Northside Hub at 58 Parker Ave is an adaptive reuse of a historic factory into a regenerative landscape, public park, community and rental space, and pandemic resilient office space for one of the regions’ strongest environmental organizations.

Since MASS Design Group arrived in Poughkeepsie, Scenic Hudson has been one of our primary supporters and partners. With a mission to preserve land and farms and create parks that connect people with the inspirational power of the Hudson River, they have been pioneers of conservation in the Hudson River Valley since 1963.

In 2019, the organization selected MASS to support their search for a new headquarters. MASS has led the development process of Scenic Hudson’s new Northside Hub from staff needs assessments, site selection, and feasibility studies, through design and into construction. The new building is scheduled to open May 2025.

Our team has helped Scenic Hudson in securing multiple state and federal approvals. The project is a NYSEDA Net Zero project (one of ten projects in the state acknowledged for accelerating decarbonization and economic development), a New York State DEC Brownfield Cleanup site, and leverages National Historic Tax credits. This innovative, all-electric design, takes advantage of the existing building’s passive environmental features of natural ventilation and daylighting to balance its future function with Historic Preservation requirements.

Date: 2019 – In Progress
Client: Scenic Hudson
Size: Built: 55,000 sq ft; Site: 2.1 acres
Services Provided: Masterplanning, Immersion, Conceptual Design, Schematic Design, Design Development, Construction Documents, Construction Administration



Housing: An Act of Justice

Our portfolio is as diverse and multi-faceted as the people we serve: from 150 units of senior housing with extensive spaces for gathering and intergenerational play, to a 15-story building atop a renovated library that hopes to desegregate a neighborhood torn apart by Urban Renewal.

MASS is leading the redesign of a two-story library, situated on twelve stories of CLT (cross-laminated timber) that will make the project Boston's first 100% affordable mass timber high-rise. The 119 units of affordable housing will include a mix of bedroom sizes.



The J.J. Carroll project includes 142 age-restricted affordable housing units alongside a health center, commercial space, and public settings to enable residents to age in community.



< The Maple Street Apartments is a 40-unit workforce housing development with a new pedestrian street, designed to build social capital and connect downtown Poughkeepsie and surrounding neighborhoods. The site is adjacent to the 1757 Glebe House, the oldest remaining house in the city, and the inspiration for the project's defining saltbox roof.

Using trauma
principles, M
a new public
survivors of c
Bozeman, Mo
v



informed design
 ASS recently completed
 facing shelter for
 domestic violence in
 ontana.



Weeksvillage is 200-unit affordable senior housing development in Brooklyn, NY, that will provide residents and neighbors with a community-based ecosystem to age in community, live well and thrive.

▼



Located on the South River in Salem, MA, El Centro connects two historically contrasting neighborhoods, Downtown and El Punto, to create a model of development that promotes justice and beauty by housing critical programs and services for Salem's most vulnerable residents.

▼



Brooke House is composed of 127 units of senior housing alongside a daycare, health clinic, and community center.

▼



< Located in Downtown Poughkeepsie, The Academy is an adaptive reuse project designed to celebrate the rich history of two historic buildings, and includes a fresh food market, food hall vendors, commissary and teaching kitchen, a craft brewery, co-working space, and 28 residential units.



< Garrett's Space is a vision of a dignified rehabilitation facility that fills a sorely-needed gap in mental health care for young people. The campus program includes a residential home for 20 young adults surrounded by paths and gardens that connect these new buildings to an existing facility dedicated to day programming and administrative offices.

Ideas and Action

Project Experience Overview

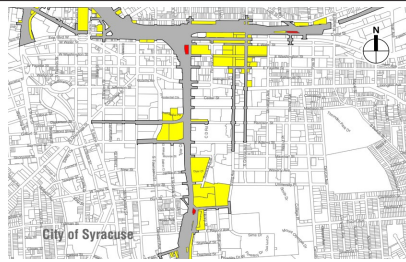


Project: New York Forward Program (2023-Present)

Partners: Stantec Urban Places Group, New York Department of State, Villages of Hamilton, Phoenix and Moravia.

Program: Annual grant program for revitalization projects in selected Villages throughout New York State. Consultant team provides planning technical assistance for local Villages, including vetting and selection of local projects for use of Village funding. Eligible projects include housing and commercial, rehabilitation and construction, and public works projects that meet local needs and revitalization goals.

Role: Technical assistance for local project sponsors, including feasibility, funding strategy and capital stack analysis.

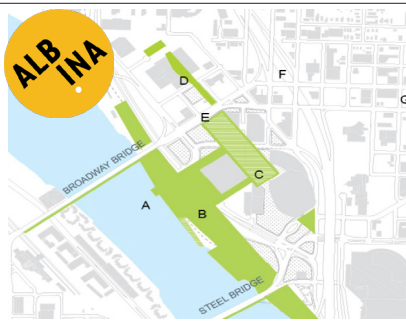


Project: Downtown Syracuse I81 Elevated Hwy Removal and Community Grid Vision Plan (2022-Present)

Partners: City of Syracuse, Dover Kohl & Partners, SWBR

Program: Urban planning and design services for the City of Syracuse regarding the pending removal of the I-81 viaduct that runs through the center of the city and neighboring communities. Community and stakeholder engagement, and creation of a viable and equitable master vision plan for project areas vacated by NYSDOT.

Role: Housing and economic development advisory covering feasibility, financing strategies, governance, affordability, inclusion and anti-displacement policy.

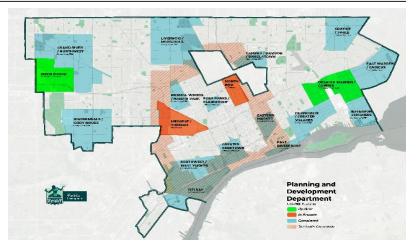


Project: Albina Vision Trust Community Investment Plan (2020 – 2023)

Partners: Albina Vision Trust (AVT), El Dorado, ECONorthwest, Meadows Group, Agency

Program: A vision and development framework for an inclusive community that works to heal the wounds of previous urban development that displaced and disempowered Portland's Black community. Scope includes extensive community and stakeholder engagement, program development, development feasibility, community benefits and financial participation modeling, ownership and partnership structure modeling, social impact financing strategy, development strategy and implementation advisory, etc.

Role: Lead consultant for equity and wealth-building programming and feasibility, community ownership and financial participation modeling, ownership and partnership structure modeling, social impact financing strategy, development strategy and implementation advisory.



Project: Detroit North End Neighborhood Framework Plan (2022 - 2023)

Partners: City of Detroit Planning & Development Department (PD&D), SmithGroup, Jima Studio, Detroit Collaborative Design Center (DCDC)

Program: Neighborhood Framework Planning initiative in the North End to guide future development and foster economic and quality of life improvements that address the priorities of the community. Led by the City of Detroit PD&D in conjunction with various City departments and agencies, with community engagement process led by DCDC.

Role: Lead advisors for housing and commercial node activation plans, including existing conditions assessment, feasibility, and local small business and developer engagement.



Project: Seattle Public Utilities South Park Community Co-development Project (2023)

Partners: Seattle Public Utility (SPU), ECONorthwest

Program: Training and technical assistance for the Seattle Public Utility seeking to pursue co-development with community organizations on SPU land in an underserved neighborhood.

Role: Training and support for evaluation of various real estate shared ownership and governance models, public-private partnership structures, procurement, development, operations and financing advisory.

Ideas and Action

Project Experience Overview



Project: Corporation for Supportive Housing RACE Initiative (2022)

Partners: Corporation for Supportive Housing

Program: Redesigning Access by Centering Equity is a multi-year initiative to address the underrepresentation of BIPOC developers in the affordable and supportive housing industries. The initiative to increase access to capital and resources for BIPOC developers includes new funding and lending resources, technical assistance programs and policy advocacy at the state and federal level.

Role: Policy analysis and developer engagement focused on the Federal LIHTC Program



Project: Boston Planning & Development Agency Real Estate Strategy Consultant Services (2022)

Partners: Boston Planning & Development Agency (BPDA), Stantec

Program: On-call real estate advisory for BPDA's 13 million square foot real estate portfolio, including property-specific development scenario modeling, evaluation of lease amendment proposals, acquisition strategy analysis, and policy and program development to advance the BPDA's commitments to job creation, affordable housing, social equity, and other key elements of the BPDA's mission.

Role: Policy and program development, including financing and funding strategies

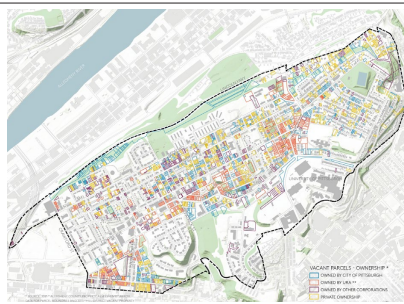


Project: Bond Markets & Racial Equity Project (2022)

Partners: Robert Wood Johnson Foundation, The Public Finance Initiative at the Milken Institute, Harvard Initiative for Responsible Investment, National League of Cities, Urban Institute, Government Alliance on Race and Equity (GARE) and Urban American City

Program: Develop meaningful metrics around race and equity that can be valued by investors and incorporated into new issuances by municipalities and their financial advisors to fund infrastructure, housing and social investments. Scope of work includes stakeholder and regulator engagement, and development of new data tools and technical assistance programs.

Role: Strategic advisors covering national planning and economic development policy, and local implementation.



Project: Pittsburgh Greater Hill District Master Plan Update (2021 – 2022)

Partners: Pittsburgh Hill CDC, Pittsburgh Urban Redevelopment Authority, Pittsburgh Dept. of City Planning, ECONorthwest

Program: Urban design and economic development plan centering economic justice and the Hill District's cultural legacy, building on past and existing community development efforts in the neighborhood.

Role: Strategic advisor for real estate and economic inclusion programs. Ideas & Action led a survey of existing conditions, policies, resources, challenges and opportunities related to economic inclusion and opportunity for district residents. Ideas & Action provided case study research and advised in the process of developing policy and implementation recommendations for the final plan.



Project: Affordable Housing Strategy Implementation (2020 – 2022)

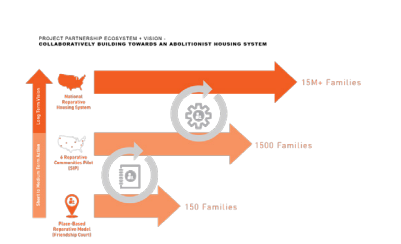
Partners: Ann Arbor Housing Commission (AAHC)

Program: Implementation of affordable housing strategies in Ann Arbor, including development of underutilized publicly owned sites, strategic acquisitions of naturally affordable housing, and strengthening affordability in existing properties.

Role: Analysis and technical assistance for acquisition, financing, private partner procurement, public approvals, management and maintenance. Ideas and Action supported the City Council entitlements process, wrote developer RFPs, and advised on the selection of private partners.

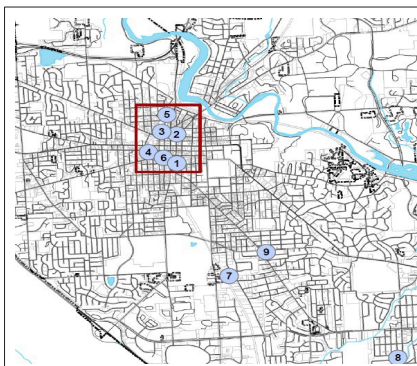
Ideas and Action

Project Experience Overview

 CLARK-FULTON COMMUNITY INVESTMENT FUND	Project: Clark-Fulton Community Investment Fund Feasibility Project (2021) Partners: Metro West Community Development Organization, Fund for Our Economic Future, Neighborhood Investment Company (NICO), Seventh Hill LLC, PAADG Studio Program: Study exploring feasibility of a community investment fund (CIF) in Cleveland, Ohio, with focuses on financial behavior, spending patterns, investment capacity, and interest in shared community ownership. Role: Finance, economic development and stakeholder engagement advisory. Ideas & Action supported engagement strategies and educational tools to assist in gauging community capacity and input for a local investment fund.
	Project: Saco, Maine Comprehensive Plan Update (2021) Partners: City of Saco, Stantec Urban Places Group Program: The State of Maine requires towns and cities to adopt a local growth management program, including a comprehensive plan and an implementation program. Plans include analysis of new economic and demographic data, real estate inventory and development analysis, and both policy and program recommendations related to housing and commercial economic development goals. Role: Consultant for housing and commercial economic development, including analysis of housing needs, existing programs and development feasibility. Ideas and Action provided land use and program recommendations to address a variety of housing and commercial goals.
	Project: Downtown Plus Strategic Master Plan, Reading, PA (2021) Partners: City of Reading Community Development Department, Reading Redevelopment Authority, Stantec Urban Places Group, Larissa Ortiz Associates Program: Downtown revitalization plan spanning existing conditions, goals across a variety of sectors, policy recommendations, public investment strategy and implementation priorities, real estate development strategy and implementation. Role: Lead consultant for housing, equity and inclusion. Deliverables included housing needs assessment, stakeholder engagement, feasibility analysis and phased policy recommendations and priorities.
	Project: Design Services for the Max Red Line TOD & Station Area Planning (2021) Partners: Tri-county Metropolitan Transportation District of Oregon, ECONorthwest Program: Activate station areas of MAX Red Line Light Rail Corridor with potential Transit Oriented Development (TOD) opportunities on TriMet controlled properties, including fee-simple ownership, command-and-control agreements with other jurisdiction authorities (e.g. ODOT), and rights-of-way within selected station areas. Role: Support for economic and social impact analysis of new transit segments and TOD, with a focus on small business stabilization and strategies for fostering new affordable commercial opportunities.
	Project: Affordable Housing Social Equity Impact Protocol (2021) Partners: LISC, Studio O, University of Virginia Program: Development of a new protocol for evaluating the social impacts of affordable housing redevelopment meant to guide socially-minded stake-holders toward more equitable outcomes. A baseline assessment tool for equitable housing redevelopment and a guide for ongoing accountability. Role: Affordable housing and community development advisory, including topics of alternative affordable housing models, equitable real estate development, and economic opportunity programming for residents.

Ideas and Action

Project Experience Overview



Project: Ann Arbor Opportunity Site Study for Long Term Affordability (2019 – 2021)

Partners: Ann Arbor Housing Commission (AAHC), City of Ann Arbor, SmithGroup

Program: A direct contract with the City of Ann Arbor's Housing Commission included the evaluation of 12 city-owned sites for a range of new affordable housing options. Ideas and Action participated in community and stakeholder engagement with AAHC to gather a range of inputs before creating financial models to assess viability of various scenarios. Ideas and Action then guided AAHC through scenario analysis for each site, investigating a variety of funding sources, ownership structures, land-tenure options, urban design elements and levels of affordability.

Role: Financial analysis and policy advice with specific financial projections to assess timing, ownership structures, urban design elements and affordability levels for a range of sites. Follow on phases of engagement and city council resolutions for implementation of recommendations including release of a request for proposals and subsequent developer selection.

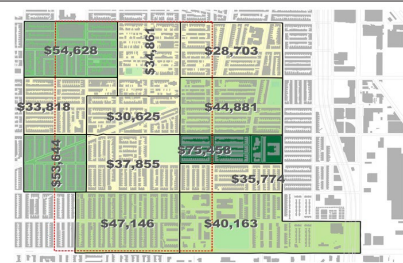


Project: New York State Downtown Revitalization Initiative (2016 – 2020)

Partners: Cities of Oswego, Elmira, Oneonta, Hudson, Albany, Schenectady NY. Empire State Development Corporation, Stantec Urban Places Group

Program: An annual state program awarding \$10 million per winning city to conduct local planning and subsidize projects that provide opportunities for employment, housing, leisure and opportunity for all income and skill levels. Program goal is to establish local goals and a strategic investment strategy to revitalize New York downtowns and stimulate both public and private investment

Role: Housing strategy and real estate development advisory for local City planning leads program-wide, as well as project-specific sponsor engagement, feasibility and financing strategy advisory.



Project: Mifflin Park and Corridor Study (2020)

Partners: Southeast Asian Mutual Assistance Associations Coalition, Inc. (SEAMAAC), Hector Design

Program: Community development plan for Mifflin Square in a South Philadelphia, representing a diverse set of local residents in coordination with 17 area organizations. Planning goals include public improvements and new programming, strengthening the business corridors and improving housing conditions and choices.

Role: Lead consultant for housing and economic development throughout the planning framework, as well as specific implementation strategies and phased recommendations.



Project: Hines Drive Greenway Corridor Study (2020)

Partners: Wayne County Parks, SmithGroup

Program: A regional community planning effort initiated by Wayne County Parks to promote linkages between neighborhoods, communities, jobs, commercial areas, and destinations along a forty plus mile river greenway spanning west of Detroit. The planning effort navigates and integrates several jurisdictions, spanning diverse communities along Hines Drive through to the Lower Rouge and Rouge River Gateway Greenway.

Role: Strategic Advisor for small business development, commercial activation, financing strategies and public-private partnerships for programming and real estate development throughout the corridor and surrounding neighborhoods.

Ideas and Action

Project Experience Overview



Project: Greater Corktown Framework Plan (2019)

Partners: Detroit Planning & Development Department (PD&D), Perkins+Will, HR&A, Scape, Projects+People

Program: Neighborhood Framework Planning initiative to guide future development that addresses the economic and quality of life priorities of the community. The scope of work builds upon previous resident engagement that identified the goals of inclusive growth and preservation of the community's unique character, cultural heritage and integrity. Strategies for housing and economic development integrate large investments including Ford Motor Company's purchase of Michigan Central Station and a federal Choice Neighborhoods Grant.

Role: Strategic advisory for affordable housing and inclusive economic development, including identification and evaluation of new development opportunities on public and private parcels.



Project: Cody Rouge/Warrendale Child Centric Neighborhood Plan (2019)

Partners: Skillman Foundation, Detroit Planning & Development Department (PD&D), Hector Design

Program: A foundation funded planning process for multiple neighborhoods as part of the City of Detroit's Strategic Neighborhood Initiative. A multi-year process to create a framework and implementation plan for housing rehabilitation, streetscapes, parks and multifamily development.

Role: Housing and economic development lead for planning team. Ideas and Action tasked with stakeholder engagement, community development and financing strategies, and project specific investment memoranda for the City of Detroit.

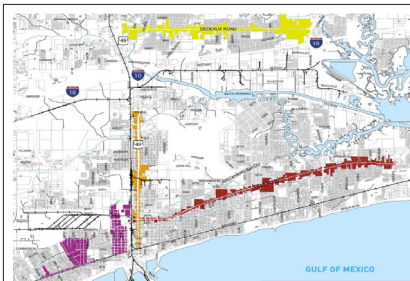


Project: Invest Health (2019)

Partners: Robert Wood Johnson Foundation, The Reinvestment Fund, Bennett Midland

Program: An initiative bringing together leaders from 50 mid-sized U.S. cities to identify barriers to public health, as well as leverage private and public investments to address these barriers. The initiative focuses on ways local public and private leaders can work together to create solution-driven and diverse partnerships.

Role: Strategic Advisor and "critical friend" for participating Invest Health cities and partners. Facilitator and speaker for periodic convenings of stakeholder learning collaboratives around health and wellness in cities



Project: Gulfport Commercial Redevelopment Zone Program (2018)

Partners: U.S. Environmental Protection Agency, City of Gulfport (MS), Spackman Mossop+Michaels

Program: Planning and program recommendations to drive economic growth and environmental sustainability in commercial corridors within the Gulfport Commercial Redevelopment Zone. Project scope includes development of a community engagement strategy with the goal of creating a model for similar communities to achieve inclusive economic development and wealth-building.

Role: Strategic Advisor identifying community development and financing strategies for the corridors and the surrounding neighborhoods.

Ideas and Action

Project Experience Overview

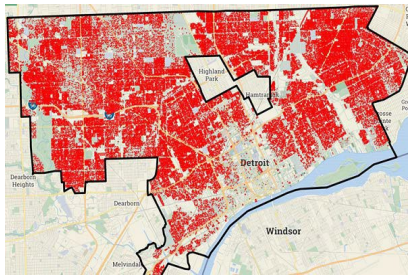


Project: Friendship Court Master Plan and Redevelopment (2018)

Partners: Piedmont Housing Alliance, Studio O.

Program: New engagement framework with current residents and community stakeholders to formulate a vision to promote opportunity and affordability at Friendship Court. Building off the initial master plan and previous efforts, the scope spans planning into implementation of a multi-phase, mixed income development that does not require relocation or displacement.

Role: Strategic Advisor to Piedmont Housing Alliance in formulating development budgets, construction timelines, financing applications and organizational capacity.



Project: Quicken Loans Community Investment Fund Right of Refusal Fund (2017)

Partners: Quicken Loans Community Investment Fund, United Community Housing Coalition (UHC), Rock Ventures, University of Michigan

Program: An initiative to provide a right-of-refusal (RoR) to Detroit residents occupying properties slated for auction after tax-lien repossession. With assistance from Quicken Loans Community Investment Fund, homes are transferred to UHC, who provides land contracts for resident.

Role: Program assessment and support, with policy advisory focused on family and neighborhood stability.



Project: Livernois McNichol Corridor Study (2017)

Partners: City of Detroit Housing and Redevelopment Department, Spackman Mossop+Michaels (SMM), and Detroit Community Design Collaborative.

Program: Planning framework to facilitate collaboration between communities and the City of Detroit to address vacancy with new productive landscape projects. The project prototyped "Neighborhood Hubs," and smaller social spaces maintained in partnership with the community. Additionally, larger clusters were identified for redevelopment and incorporated into RFPs.

Role: Strategic Advisor on economic development and housing strategies in the focus area.

WE WANT TO KNOW WHO IS PARTICIPATING TODAY-
PLACE A DOT WHERE YOU LIVE





D

FORMS

CITY OF POUGHKEEPSIE
Purchasing Department
BID FORM

Bid submitted by: Wallace Roberts & Todd, LLC

The undersigned hereby designates as his office to which such notice of acceptance may be mailed or delivered:

123 S. Broad Street, Suite 1450
Philadelphia, PA 19109

The vendor hereby agrees to the provisions of Section 103-a of the General Municipal Law which requires that upon the refusal of a person, when called before a Grand Jury to testify concerning any transaction, or contract had with the State, any political subdivision thereof, a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract,

- (c) “such person, and any firm partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or any public department, agency or official thereof, for goods, work or services, for a period of five years after such refusal, and
- (b) any and all contracts made with any municipal corporation or any public department, agency or official thereof, since the effective date of this law, by such person, and by any firm, partnership or corporation of which he is a member, partner, director or officer may be cancelled or terminated by the municipal corporation without incurring any penalty or damages on account of such cancellation or termination, but any moneys owing by the municipal corporation for goods delivered or work done prior to the cancellation or termination shall be paid.”

The vendor does hereby certify that he or it is under no such impediment or disqualification from bidding created under Section 103-b of the General Municipal Law of the State of New York.

CS-1

NON- COLLUSION AFFIDAVIT

As required by Section 139-d of the New York State Finance Law, the bidder certifies that:

- (c) the bid has been arrived at by the bidder independently and has been submitted without collusion with any other vendor of materials, supplies, or equipment of the type described in the invitation for bids, and
 - (b) the contents of the bid have not been communicated by the bidder, nor, to its best knowledge and belief, by any of its employees or agents, to any person not an employee or agent of the bidder or its surety on any bond furnished herewith prior to the official opening of the bid. The signature of the Contractor to this contract shall be deemed a specific subscription to the certificate required pursuant to Section 139-d of the State Finance Law and the Contractor affirms that the statements therein contained are true under the penalties of perjury.”
- I No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

Signed 
By Woo Kim, AICP, PP, LEED AP
(President)

Dated 09/19/2024

If a corporation, give the State of Incorporation, using the phrase "corporation organized under the laws of

_____” “

If a partnership, give names of partners, using also the phrase "co-partners trading and doing business under the firm name and style of

_____” “

If an individual using a trade name, give individual name, using also the phrase "an individual doing business under the firm name and style of

_____” “

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the City receive information that a Bidder/Contractor is in violation of the above-referenced certification, the County will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the County shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

The County reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

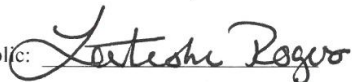
I, Woo Kim, AICP, PP, LEED AP, being duly sworn, deposes and says that he/she is the
Principal of the Wallace Roberts & Todd, LLC Corporation and that
neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

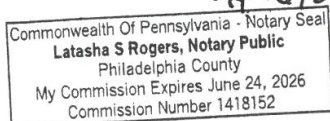
SIGNED 

SWORN to before me this

19 day of September 2024

Notary Public:


Exp: 6/24/2026



CITY OF POUGHKEEPSIE
POUGHKEEPSIE, NEW YORK
RFQ-COP-08-24-04

Planning Coordinator

Receipt of Addendum:

<u>Addendum No.</u>	<u>Date Received</u>
1	9/18/2024



**CITY OF POUGHKEEPSIE
POUGHKEEPSIE, NEW YORK**

**RFQ-COP-08-24-02
CHOICE NEIGHBORHOOD PLANNING COORDINATOR**

ADDENDUM NO. 1

September 18, 2024

This addendum contains Questions and Answers:

QUESTION: Can you please clarify the role of the three key nonprofit partners identified in the RFQ (Poughkeepsie Children's Cabinet, MASS Design Group, and Scenic Hudson)? Will these organizations serve in an advisory role, or will they directly contribute to the items listed in the scope of work?

ANSWER: All three intend to participate in the HUD required committee format, so the answer is likely both capacities.

Please acknowledge receipt of this addendum by including this receipt with your bid package!

Receipt of Addendum# 1

Signed: _____

Company Name: Wallace Roberts & Todd, LLC

REFERENCE FORM

(Duplicate as needed – **3 Required***)

For: Meriden Choice Neighborhood

Name of Reference: Charlie Adams

Address: 1301 North 31st Street

City: Philadelphia State: PA Zip: 19121

Contact Person: Charlie Adams

Phone: 857.415.4650

Email: cadams@pennrose.com

Contract Value: \$303,250

Dates of Contract: 2014-15

Scope of Contract: Choice neighborhood planning coordinator services

THIS SPACE FOR CPOK/PHA USE ONLY

Failure to provide required references may result in removal from consideration for contract ward

REFERENCE FORM

(Duplicate as needed – **3 Required***)

For: Perry Choice Neighborhood

Name of Reference: Modesto Candelario

Address: 300 Perry Street

City: Buffalo State: NY Zip: 14204

Contact Person: Modesto Candelario

Phone: 716.855.6711 extension 253

Email: mcandelario@bmha.ci.buffalo.ny

Contract Value: \$470,205

Dates of Contract: 2011-2012

Scope of Contract: Choice neighborhood planning coordinator services

THIS SPACE FOR CPOK/PHA USE ONLY

Failure to provide required references may result in removal from consideration for contract ward

REFERENCE FORM

(Duplicate as needed – 3 Required*)

For: Hagerstown Choice Neighborhood

Name of Reference: Sean M. Griffith

Address: 35 W. Baltimore St.

City: Hagerstown State: MD Zip: 21740

Contact Person: Sean M. Griffith

Phone: 301.733.6911 extension 126

Email: sgriffith@hagerstownha.com

Contract Value: \$320,000

Dates of Contract: 2024-Present

Scope of Contract: Choice neighborhood planning coordinator services

THIS SPACE FOR CPOK/PHA USE ONLY

Failure to provide required references may result in removal from consideration for contract ward

AUTHORIZATION FOR RELEASE OF INFORMATION

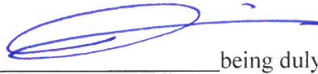
The undersigned hereby authorizes and request any person, firm or corporation to furnish any information requested by the City of Poughkeepsie in verification of the recitals comprising this 19 day of September, 2024.

Name of Contractor: Wallace Roberts & Todd, LLC

By: Woo Kim, AICP, PP, LEED AP

Title: Principal

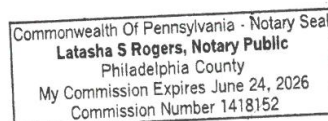
STATE OF Pennsylvania)
) SS
COUNTY OF Philadelphia)

Woo Kim, AICP, PP, LEED AP  being duly sworn, deposes and says that he is Principal of Wallace Roberts & Todd, LLC and that the answers to the foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this 19 day September, 2024


NOTARY PUBLIC

My commission expires: 6/24/2026



**REQUEST FOR
QUALIFICATIONS RFQ
COP-08-24-04
COMPREHENSIVE PLANNING SERVICES
STATEMENT OF QUALIFICATIONS**

All questions must be answered in a clear and comprehensive manner. If necessary, questions may be answered on separate attached sheet(s). This document must be notarized by a notary public.

1. Name of Company: Wallace Roberts & Todd, LLC

Address: 123 S. Broad Street, Suite 1450

City/State/Zip: Philadelphia, PA 19109

Telephone Number: 215.430.5060

Fax Number: N/A

Email: wkim@wrtdesign.com
2. Name of Owner(s): Joseph W. Healy, AIA, LEED AP BD+C

Address: 123 S. Broad Street, Suite 1450

City/State/Zip: Philadelphia, PA 19109

Telephone Number: 215.772.1474

Email: JWH@wrtdesign.com
3. Date Company was Established: 1963
4. Are you a Sole Proprietorship?: _____

Partnership?: Limited Liability Company

Joint Venture?: _____

Corporation? _____

If a corporation, please enclose a copy of corporation papers and corporate seal.
5. How many years have you been engaged in business under your present firm or trade name? 61

**REQUEST FOR
QUALIFICATIONS
RFQ COP-08-24-04
COMPREHENSIVE PLANNING SERVICES**

JOINT VENTURE QUESTIONNAIRE

The following questionnaire must be fully completed and submitted concurrently with the Contractor's Occupation Statement by all Contractors submitted as a joint venture.

Names of Firms involved in the Joint Venture: _____

1. Specify the percent of Minority Business Enterprise/Women Business enterprise (MBE/WBE) ownership in terms of profit and loss sharing.
2. Describe the Capital Contributions by each Joint Venturer.
3. Describe the financial controls of the Joint Venture: Who will keep the books, how will expenses be reimbursed and what is the authority of each Joint Venturer to commit to obligate the others?
4. Explain the relationship of ownership, options for ownership or loans between the Joint Venturers.
5. How and by whom will the on-site work be supervised?
6. Who will be responsible for material purchases and how will the purchases be financed?
7. Who will provide the equipment, the estimated cost thereof and how will the equipment be financed?
8. How and from whom will bonding be acquired; insurance; name of company(s) providing bonding and insurance.
9. Describe the experience and business qualifications of each Joint Venturer.
10. Submit copies of any Joint Venture Agreement.

Signature of Affiant

Date

Signature of Affiant

Date

Certifications and Representations of Offerors

Non-Construction Contract

U.S. Department of Housing
and Urban Development
Office of Public and Indian Housing

OMB Approval No: 2577-0180 (exp. 7/30/96)

Public reporting burden for this collection of information is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

This form includes clauses required by OMB's common rule on bidding/offering procedures, implemented by HUD in 24 CFR 85.36, and those requirements set forth in Executive Order 11625 for small, minority, women-owned businesses, and certifications for independent price determination, and conflict of interest. The form is required for nonconstruction contracts awarded by Housing Agencies (HAs). The form is used by bidders/offerors to certify to the HA's Contracting Officer for contract compliance. If the form were not used, HAs would be unable to enforce their contracts. Responses to the collection of information are required to obtain a benefit or to retain a benefit. The information requested does not lend itself to confidentiality.

1. Contingent Fee Representation and Agreement

(a) The bidder/offeror represents and certifies as part of its bid/offer that, except for full-time bona fide employees working solely for the bidder/offeror, the bidder/offeror:

- (1) ☐ has, ☒ has not employed or retained any person or company to solicit or obtain this contract; and
- (2) ☐ has, ☒ has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(b) If the answer to either (a)(1) or (a)(2) above is affirmative, the bidder/offeror shall make an immediate and full written disclosure to the PHA Contracting Officer.

(c) Any misrepresentation by the bidder/offeror shall give the PHA the right to (1) terminate the resultant contract; (2) at its discretion, to deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

2. Small, Minority, Women-Owned Business Concern Representation

The bidder/offeror represents and certifies as part of its bid/offer that it:

- (a) ☐ is, ☒ is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.
- (b) ☐ is, ☒ is not a women-owned small business concern. "Women-owned," as used in this provision, means a small business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.
- (c) ☐ is, ☒ is not a minority enterprise which, pursuant to Executive Order 11625, is defined as a business which is at least 51 percent owned by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals.

For the purpose of this definition, minority group members are:

(Check the block applicable to you)

- | | |
|---|---|
| ☐ Black Americans | ☐ Asian Pacific Americans |
| ☐ Hispanic Americans | ☐ Asian Indian Americans |
| ☐ Native Americans | ☐ Hasidic Jewish Americans |

3. Certificate of Independent Price Determination

(a) The bidder/offeror certifies that—

- (1) The prices in this bid/offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder/offeror or competitor relating to (i) those prices, (ii) the intention to submit a bid/offer, or (iii) the methods or factors used to calculate the prices offered;
- (2) The prices in this bid/offer have not been and will not be knowingly disclosed by the bidder/offeror, directly or indirectly, to any other bidder/offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and
- (3) No attempt has been made or will be made by the bidder/offeror to induce any other concern to submit or not to submit a bid/offer for the purpose of restricting competition.

(b) Each signature on the bid/offer is considered to be a certification by the signatory that the signatory:

- (1) Is the person in the bidder/offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or
- (2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above (insert full name of person(s) in the bidder/offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder/offeror's organization);
(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

- (c) If the bidder/offeree deletes or modifies subparagraph (a)2 above, the bidder/offeree must furnish with its bid/offer a signed statement setting forth in detail the circumstances of the disclosure.

4. Organizational Conflicts of Interest Certification

- (a) The Contractor warrants that to the best of its knowledge and belief and except as otherwise disclosed, it does not have any organizational conflict of interest which is defined as a situation in which the nature of work under a proposed contract and a prospective contractor's organizational, financial, contractual or other interest are such that:

- (i) Award of the contract may result in an unfair competitive advantage;
- (ii) The Contractor's objectivity in performing the contract work may be impaired; or
- (iii) That the Contractor has disclosed all relevant information and requested the HA to make a determination with respect to this Contract.

- (b) The Contractor agrees that if after award he or she discovers an organizational conflict of interest with respect to this contract, he or she shall make an immediate and full disclosure in writing to the HA which shall include a description of the action which the Contractor has taken or intends to eliminate or neutralize the conflict. The HA may, however, terminate the Contract for the convenience of HA if it would be in the best interest of HA.

- (c) In the event the Contractor was aware of an organizational conflict of interest before the award of this Contract and intentionally did not disclose the conflict to the HA, the HA may terminate the Contract for default.

- (d) The Contractor shall require a disclosure or representation from subcontractors and consultants who may be in a position to influence the advice or assistance rendered to the HA and shall include any necessary provisions to eliminate or neutralize conflicts of interest in consultant agreements or subcontracts involving performance or work under this Contract.

5. Authorized Negotiators (RFPs only)

The offeror represents that the following persons are authorized to negotiate on its behalf with the PHA in connection with this request for proposals: (list names, titles, and telephone numbers of the authorized negotiators):

6. Conflict of Interest

In the absence of any actual or apparent conflict, the offeror, by submission of a proposal, hereby warrants that to the best of its knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement, as described in the clause in this solicitation titled "Organizational Conflict of Interest."

7. Offeror's Signature

The offeror hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

Signature & Date:



09/19/2024

Typed or Printed Name:

Woo Kim, AICP, PP, LEED AP

Title:

Principal

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Wallace Roberts & Todd, LLC

123 S. Broad Street, Suite 1450

Philadelphia, PA 19109

wkim@wrtdesign.com

215.430.5060

Wallace Roberts & Todd, LLC

123 S. Broad Street, Suite 1450

Philadelphia, PA 19109

wkim@wrtdesign.com

215.430.5060

09.23.2024



RFQ-COP-08-24-04

COMPREHENSIVE PLANNING SERVICES FOR CHOICE NEIGHBORHOOD

SUBMITTED TO: **City of Poughkeepsie**

SUBMITTED BY: **WRT** with MASS Design Group and Ideas and Action

File #2

Separate Letter Indicating Fee Proposal



MERIDEN 2020 CHOICE NEIGHBORHOOD PLAN + MERIDEN COMMONS | WRT
MERIDEN, CT

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- B1** HOURLY RATES AND FEES Page 6
- B2** FIRM/TEAM DESCRIPTION Page 17
- B3** HISTORY OF COLLABORATION Page 19
- B4** FIRM/TEAM QUALIFICATIONS Page 22
- B5** FIRM/TEAM EXPERIENCE Page 44



NORTH CENTRAL PHILADELPHIA CHOICE NEIGHBORHOOD + NC FIVE IMPLEMENTATION | WRT
PHILADELPHIA, PA

A photograph of a modern building's exterior. The building features dark grey brickwork and light-colored wood paneling on the upper level. A man in a dark blue polo shirt and khaki pants is walking through a glass entrance door. The scene is brightly lit, casting shadows on the brick wall. In the foreground, there is a concrete walkway and a planter bed with green shrubs.

B1

HOURLY RATES AND FEES

FEE PROPOSAL

Below is a table that breaks down our fee proposal by firm and by task. The next page includes hourly rates for each firm.

TASK/DESCRIPTION	WRT	MASS	IDEAS AND ACTION	TOTAL
TASK 1: Pre-Planning and Coordination	\$35,000	\$3,000	-	\$38,000
TASK 2: Identify and Assess Existing Conditions	\$25,000	\$5,000	-	\$30,000
TASK 3: Identify Issues and Needs – Housing, People, Neighborhood	\$25,000	\$2,000	\$35,000	\$62,000
TASK 4: Stakeholder Engagement/Capacity Building	\$117,750	\$40,000	-	\$157,750
TASK 5: Develop Strategies and Plans – Housing, People, Neighborhood	\$50,000	\$50,000	-	\$100,000
TASK 6: Early Action Activities	\$5,000	-	-	\$5,000
TASK 7: Transformation Plan/Project Management	\$70,000	-	-	\$70,000
EXPENSES	\$17,250	-	-	\$17,250
TOTAL	\$345,000	\$100,000	\$35,000	\$480,000



WRT Hourly Billing Rates

Principal.....	\$265.00
Professional Level IV/Project Manager.....	\$200.00
Professional Level III.....	\$160.00
Professional Level II.....	\$125.00
Professional Level I.....	\$105.00
Administrative Support.....	\$120.00

Notes:
Rates are effective through December 31, 2024
Subsequent annual increases are assumed to be within 5%.

Reimbursables:
Employee Car @ \$0.58/mile or current government allowance;
Rental Car, Airline Tickets, and any other transportation charges;
Subsistence;
Reproduction (includes all blueprints, photo copies, photography, etc.);
Miscellaneous (includes postage, overnight mail, telephone, messenger, etc.

MASS.

Executive	\$345/hr
Senior Principal / Managing Director	\$320/hr
Principal / Senior Director	\$260/hr
Design Director / Director	\$205/hr
Sr Designer / Sr Architect / Manager	\$160/hr
Designer / Coordinator/ Specialist / Senior Fellow	\$135/hr
Intern / Fellow	\$55/hr

Ideas and Action

Marc Norman	\$240/hr
Merik Mulcahy	\$185/hr

PROPOSED SCOPE OF WORK

Our Approach

The scope of work outlined on the next several pages is based on our almost decade-long experience with the Choice Neighborhoods Initiative (CNI) program and understanding its keys to success. Due to the fluid nature of the Choice planning process and synergies that arise from a partner-driven approach, this scope of work is a starting point, subject to change and approval of HUD. The plan will integrate all three components— people, neighborhood, and housing—into a comprehensive framework for revitalization and transformation.

The WRT team includes partners MASS Design Group (MASS) and Ideas and Action. MASS will be providing strategic and on-the-ground support across the entirety of the Choice Neighborhoods planning process. Specifically, MASS will collaborate with WRT on community capacity building and engagement in the context of Choice Neighborhoods, provide strategic guidance and insights in the assessment and development of existing conditions, and will partner in the development and design of the Housing Plan and Neighborhood Plan.

Ideas and Action will be providing the Market Study to support and build out the understanding of the local housing market and market conditions and identify a development program for mixed-income housing in the Choice Neighborhoods.

Task 1: Pre-Planning and Coordination

1.1: Project Team Coordination

The WRT team will review the corresponding HUD contract requirements and meet with the client group staff to clarify roles and objectives and finalize contract prior to kick-off meeting. Our team will develop a list of required project data to be provided by the core team and its partners.

1.2: Partner and Stakeholder Recruitment

In coordination with the core team and project partners, the WRT team will assist in assembling additional partners and stakeholders for the steering committee and task forces in support of the transformation planning process.

1.3: Engagement/Empowerment Plan

The WRT team will develop an engagement plan for the duration of the planning process that will:

- Aim to build capacity among target housing site/ neighborhood residents
- Set expectations on required meeting participation for all parties

Task 1 Deliverables:

- Final scope, schedule, and contract
- Stakeholder list
- Engagement/empowerment plan

Task 2: Identify and Assess Existing Conditions

2.1: Review Prior Planning Efforts

The WRT Team will review and summarize relevant aspects of prior planning reports provided by core team and project partners.

2.2: Review Geography, History, Economic Development, and Housing Market

The WRT Team will analyze and summarize provided data relating to the neighborhood's geography, history, economic development, and housing market. The WRT team will rely on existing housing and economic development data from the City of Poughkeepsie and partner agencies.

2.3: Analyze and Summarize Demographic, Land Use, and Housing Data

The WRT Team will analyze and summarize data demographic, land use, and housing data to develop a demographic profile of the neighborhood.

2.4: Review Housing Stock, Education, Infrastructure, Transportation, Commercial Markets, and Neighborhood Assets

The WRT Team will analyze and summarize data provided from core team and project partners.

2.5: Review Previous and Ongoing Community-Related Surveys and Community Supportive Services

The WRT Team will review recent and ongoing community-related surveys provided by core team and project partners. The WRT Team will also analyze amenities and supportive services existing within or in close proximity to the neighborhood (grocery stores, licensed childcare centers, quality educational institutions, health facilities, etc.).

2.6: Review and Evaluate Other Relevant Data

This will include review of data from census, police reports, healthcare providers, school reports, employment, and other to determine if more comprehensive assessments are required at neighborhood level.

2.7: Develop Base Maps and Conduct Site Analysis

Based on the data provided and site reconnaissance, the WRT Team will develop base maps and conduct site analysis that will serve as the basis for the neighborhood transformation plan. Base maps and site analysis diagrams may include:

- Existing utilities and infrastructure
 - Existing zoning and regulatory constraints
 - Housing stock conditions, foreclosure, vacancy, and ownership
 - Neighborhood planning opportunities and constraints
 - Identifying amenities and key Institutions
 - Site access and locational value, barriers, and connections
 - Neighborhood assets
- Task 2 Deliverables:
- Demographic profile
 - Site visit notes and photos
 - Base maps
 - Site analysis diagrams

Task 3: Identify Issues and Needs—Housing, People, Neighborhood

3.1: Develop Needs Assessment Survey Tool

The WRT Team will work with the core team and its partner organizations to develop a comprehensive survey tool for public housing (minimum 65% of target housing site residents) and neighborhood residents in the CNI. WRT anticipates partner support in administering the surveys and inputting data into an online survey platform.



◀ HOUSTON THIRD WARD/CUNNEY HOMES CHOICE NEIGHBORHOOD PLAN | WRT HOUSTON, TX

The WRT Team will oversee this effort and will train the surveying team. Due to resident confidentiality issues, we recommend that the core team or housing authority secure all completed surveys. The survey will assess the adequacy of existing socioeconomic services and determine where community needs are not being met. The survey will look at issues related to:

- Employment
- Education
- Public Health
- Arts and Cultural Preservation
- Supportive Services
- Public Safety
- Mobility and Transportation
- Parks and Open Space
- Housing

▼ **HAGERSTOWN CHOICE NEIGHBORHOOD | WRT**
HAGERSTOWN, MD
Needs Assessment results

3.2: Analyze Data and Survey Results

The WRT Team will analyze and summarize the findings and determine gaps that will be addressed during the development of transformation plan.

3.3: Present Needs Assessment Findings

The WRT Team will present the findings to the community at a community-wide workshop/ event to allow for questions.

3.4: Choice Housing Market Analysis

Ideas and Action will conduct a Choice focused housing market study to inform the Housing Plan. Ideas and Action will complete its work in 2 phases – a preliminary market scan in coordination with WRT’s existing conditions assessment; and a technical report identifying a market for non-replacement housing in mixed-income scenarios.

Task 3 Deliverables:

- Analysis, summary, and presentation of needs assessment findings
- Market Analysis deliverables and summary presentations

BUSINESSES IN THE CHOICE NEIGHBORHOODS

Business Survey

DOES YOUR BUSINESS OWN OR RENT THE SPACE?

RENT 65%
OWN 35%



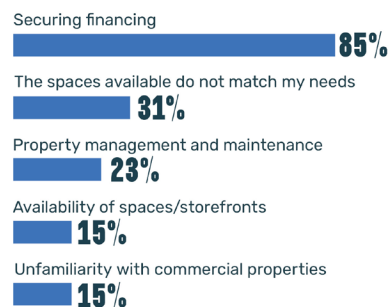
IF YOU CURRENTLY RENT YOUR SPACE/ BUILDING, ARE YOU INTERESTED IN BECOMING AN OWNER?

YES 65%
NO 35%
NOT SURE 7%



86%
of business owners
are looking to invest in their business
to attract additional customers

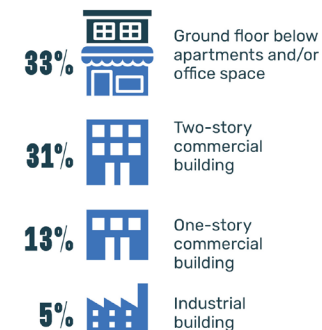
IF YOU ARE INTERESTED IN BECOMING AN OWNER BUT HAVE NOT YET, WHAT IS PREVENTING YOU?



56%
of business owners
are very satisfied with the physical
location of their business

68%
of business owners
are going to be maintaining operations
primarily the same as last year

IN WHAT TYPE OF BUILDING IS YOUR BUSINESS LOCATED?



HOW EASY IS IT FOR YOU TO MEET YOUR CURRENT BUSINESS COST AND EXPENSES/RENT OR MORTGAGES/TAXES AND UTILITIES?

40% SOMEWHAT DIFFICULT
40% SOMEWHAT EASY
13% VERY EASY
7% VERY DIFFICULT



BLOSSOM AT BARTRAM ▲
CHOICE NEIGHBORHOOD PLAN | WRT
 PHILADELPHIA, PA

The Community Ambassador program was a vital component of building capacity among residents, which ultimately led to increased enthusiasm for and participation in the planning process.

Task 4: Stakeholder Engagement/ Capacity Building

4.1: Community Engagement MOU

Working with project partners, the WRT Team will develop a detailed public engagement memorandum of understanding that will identify tools for community engagement based on neighborhood demographics and stakeholder needs. This will include a combination of interviews, public meetings, focus groups, workshops/charrettes, and special events. This will also entail a plan for disseminating information that will include creation of a central repository to post all meeting announcements, minutes, photos, and materials. This may take the form of a website, and/or a physical community bulletin board at residences or other agreed upon location(s).

4.2: Resident Capacity Building

The WRT Team will work with the client group to identify community capacity building programs to help residents develop the skill-set needed to effectively participate in the planning process and serve on working groups and the CNL Task Forces, in addition to strengthening their skill-set for employment placement.

Two program ideas are a Leadership Series and a Community Ambassador Program. A Leadership Series can cover topics such as citizen planning; social, environmental, and economic issues; team building and decision-making; community history; and fundraising.

It is expected that the WRT Team and the client group work collectively to secure a line-up of local and regional subject matter experts. A Community Ambassador program will identify neighborhood residents to disseminate plan information, advocate for plan recommendations, facilitate resident meeting attendance, and champion the planning process. It is expected that Community Ambassadors receive a small stipend for their engagement, and sign a memorandum of agreement.

4.3: Community Capacity Building

The WRT Team will participate in the HUD Convening and another Community Capacity Building activity that will be determined.



▲ **OUR LEGACY, OUR COMMUNITY:
A RENEWED VISION FOR NORTH TULSA | WRT
TULSA, OK**

Using 3D models to help visualize is a great tactic to encourage active participation and collaboration in community-wide meetings.

4.4: Outreach Materials

The WRT Team will assist with the development of materials for use in meetings, events, workshops, and visioning sessions.

4.5: Communication Materials

The WRT Team will assist with content and the creation of materials to explain and promote the CNI planning effort, including graphics, meeting announcements, photos, news items, display boards, status updates, and participation in public meetings as requested.

4.6: Neighborhood CNI Kick-off Meeting

In conjunction with the HUD Site Visit, the WRT Team will lead a neighborhood-wide kick-off meeting to introduce the CNI planning process and encourage resident and stakeholder engagement.

4.7: Community-Wide Meetings

In conjunction with the core team and its project partners, the WRT Team will organize three (3) additional community-

wide meetings and workshops, which will include presentation of the Needs Assessment Findings, a visioning workshop, and presentations of the Draft Transformation Plans. Another event may entail a community “walkshop,” inviting team members, stakeholders, and residents to walk through the neighborhood together and discuss challenges and opportunities.

4.8: Focus Group Meetings

In conjunction with the core team and project partners, the WRT Team will facilitate three (3) Focus Group meetings on particular aspects of the plan as they arise organically from the planning process.

4.9: Resident Council Meeting

The WRT Team will attend key resident council meetings (no more than two) to review the goals of the CNI, explain how residents can get involved, and keep them abreast of the plan's progress.

4.10: Steering Committee, Task Forces, and Working Groups

The WRT Team will provide facilitation and guidance to the chairs of the Task Forces. WRT will set the agenda for Steering Committee meetings and facilitate discussion. The

WRT Team has budgeted to attend a third of the anticipated 18 task force meetings (6 for Housing, 6 for People, 6 for Neighborhood) in person. The remainder of meetings will be conducted virtually. We will determine which meetings to attend during the planning process based on partner capacity, topic sensitivity, and priority.

Task 4 Deliverables:

- *Stakeholder engagement plan*
- *Presentation materials (may include boards, maps, videos, brochures)*
- *Task Force and Working Group packets (description of process, goals, role, meeting schedule)*
- *Capacity building training plan and schedule*

Task 5: Develop Strategies and Plans—Housing, People, Neighborhood

5.1: Initial Strategies For Housing, People, Neighborhood

The WRT Team will provide guidance to leadership of Task Forces and Working Groups in developing and prioritizing strategies, including best practices from similar neighborhoods.

5.2: One-for-One Housing Replacement Plan

The WRT Team will assist the Poughkeepsie Housing Authority (and procured master developer) in developing a one-for-one replacement plan that will include total number of units, housing type, tenure, and location.

5.3: Recommendations for Neighborhood Goals and Vision

The WRT Team will assist Neighborhood Task Force and Working Groups with developing aspirational vision and goals, including potential Critical Community Improvements.

5.4: Conceptual Neighborhood Plans

Based on community input, identified gaps in neighborhood services, market study findings, and the development program, the WRT Team will develop conceptual land use diagrams that identify key development nodes, gateways, linkages, and preliminary concept plans for housing and mixed-use development. We will look at historical cues for neighborhood design—housing, parks, blocks, and streetscape typologies—to inform the design of a healthy, pedestrian-friendly neighborhood that integrates architectural features reflecting the rich history of the community. We will assess opportunities for enhancing the connectivity of parks, open space, and community gathering spaces to build neighborhood identity and social resilience.

Task 5 Deliverables:

- *Focus Groups notes and summary*
- *Best practice case studies*
- *Conceptual neighborhood plan*



◀ **BEDFORD DWELLINGS
CHOICE NEIGHBORHOOD
PLAN | WRT**
PITTSBURGH, PA



◀ **BLOSSOM AT BARTRAM CHOICE NEIGHBORHOOD PLAN | WRT**
PHILADELPHIA, PA
Final plan document

Task 6: Early Action Activities

6.1: Early Action Activities

The WRT Team will assist the core team and project partners in identifying early implementable activities that will provide a visible demonstration of the promise of further neighborhood transformation.

Task 6 Deliverables

- *List of Early Action Activities*

Task 7: Transformation Plan/Project Management

7.1 Project Management

The WRT Team dedicates a percentage of project budgets towards project management in order to ensure adequate attention is paid to issues and planning team members. We lead planning processes with high standards of visual/written communication, cultural competence, emotional intelligence, design excellence, and organizational acumen. We anticipate a bi-weekly rhythm of project management meetings with key team members which can happen at a higher frequency as we build up towards planning milestones.

7.2: Bi-Weekly Project Coordination Calls

The WRT Team will organize bi-weekly conference calls for the duration of the planning process.

7.3: Bi-Monthly HUD Conference Calls

The WRT Team will participate as requested in bi-monthly HUD conference calls.

7.4: Outline with Content

The WRT Team will develop a plan outline with content as per the HUD CNL requirements.

7.5: Develop Draft Transformation Plan

The WRT Team will guide the Task Forces and Working Groups to develop a cohesive transformation plan that integrates the goals of Choice Neighborhoods:

- **Housing:** Replace distressed public housing with high-quality mixed-income housing that is well-managed and responsive to the needs of the surrounding neighborhood;
- **People:** Improve educational outcomes and intergenerational mobility for youth with services and supports delivered directly to youth and their families; and,
- **Neighborhood:** Create the conditions necessary for public and private reinvestment in distressed neighborhoods to offer the kinds of amenities and assets, including safety, good schools, and commercial activity, that are important to families' choices about their community.

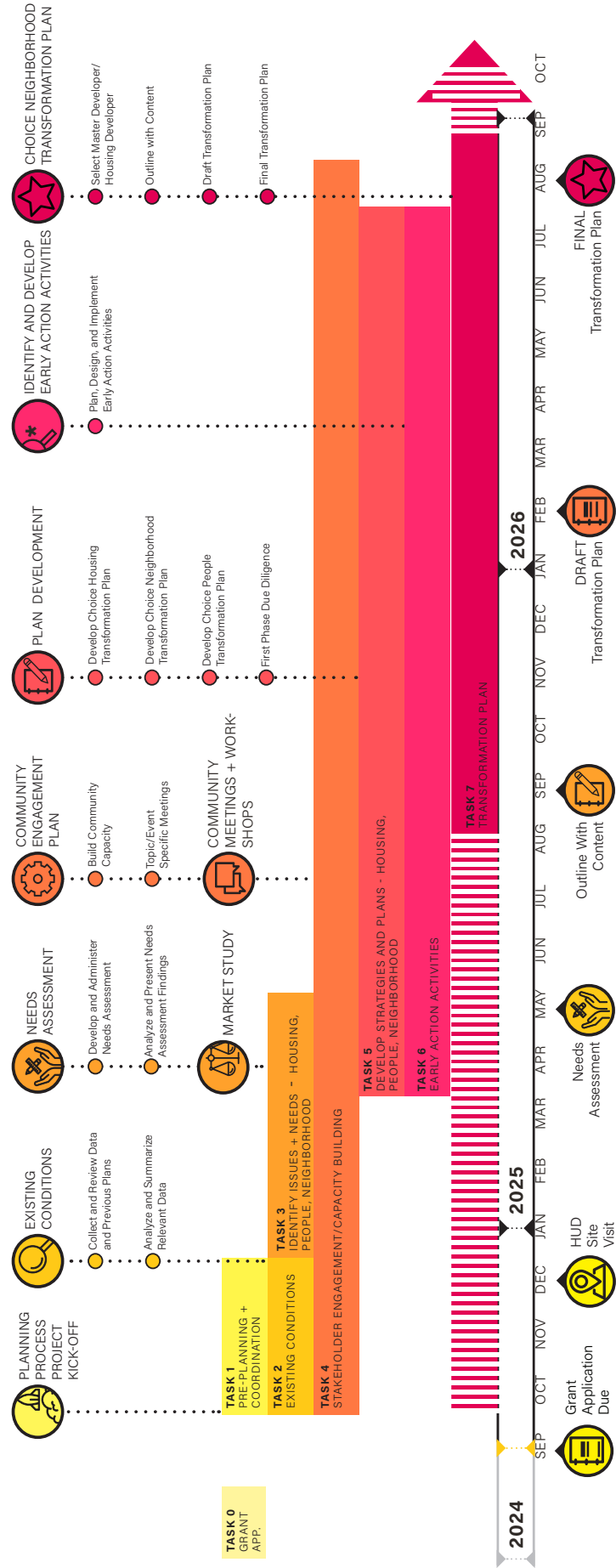
7.6: Develop Final Transformation Report

The WRT Team will develop a final plan document that can guide implementation. The final plan will include housing, neighborhood, and people plan components, metrics, partnerships, as well as phasing and implementation.

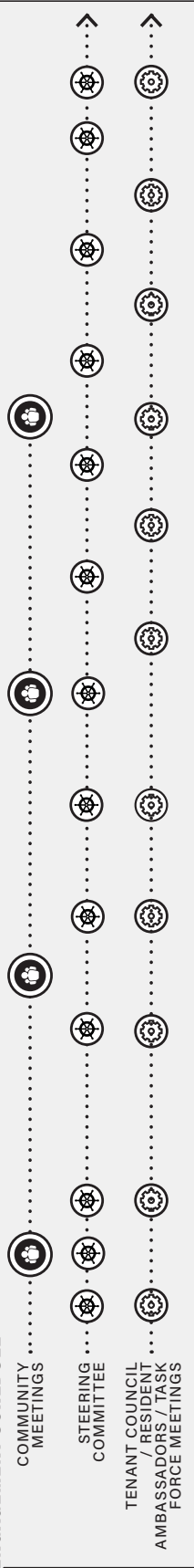
Task 7 Deliverables:

- *Outline with content*
- *Draft transformation plan*
- *Housing strategy and program*
- *Architectural concept plans*
- *Community meetings to present draft transformation plan*
- *Public meeting presentations*
- *Final transformation plan document*

DRAFT PROJECT SCHEDULE + MILESTONES



ENGAGEMENT SCHEDULE

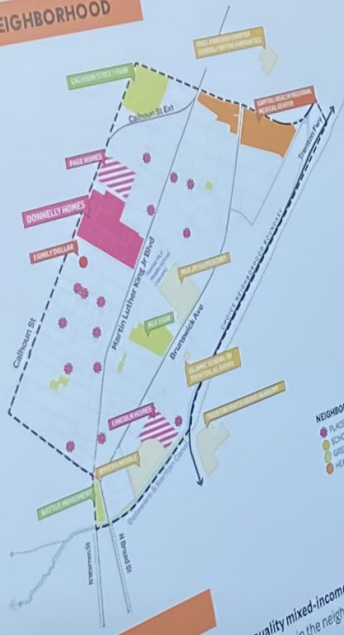


NORTH TRENTON BATTLE MONUMENT

Learn about the Trenton Choice planning process and

WHAT IS THE TRENTON CHOICE NEIGHBORHOOD INITIATIVE?

THE CHOICE NEIGHBORHOOD



WHAT WILL THIS PLAN LEAD TO?

A COMPREHENSIVE ROAD MAP TO
ACHIEVE THE COMMUNITY'S VISION
FOR MEANINGFUL CHANGE.

It will include:

- actionable goals
- timeline for implementation
- metrics to measure progress

HOW WOULD DONNELLY HOMES RESIDENTS BE AFFECTED?

- RIGHT TO RETURN**
Regardless of how the Donnelly Homes site is redeveloped, all Trenton Housing Authority residents in good standing will have the right to return.
- ONE FOR ONE REDEVELOPMENT**
For every unit of public housing that is demolished, a new unit will be replaced within the neighborhood.

HOW CAN I GET INVOLVED?

ATTEND A TASK FORCE MEETING

People meet to discuss a vision and action plan for the neighborhood.

Next meetings:

- Thursday, October 23, 6:00 to 8:00 pm
- Wednesday, October 28, 6:00 to 8:00 pm
- Thursday, October 29, 6:00 to 8:00 pm

Join in person at the Donnelly Homes redevelopment building or online via Zoom.

ANY QUESTIONS?

CHRYSTINE, Neighborhood Project Manager
Trenton Housing Authority
404-279-9804
CHRYSTINE@THA.NJ



FOLLOW US
ON FACEBOOK

https://www.facebook.com/choice-neighborhood-planning/

THREE MAIN GOALS



HOUSING: Create new, high-quality mixed-income housing on-site at Donnelly Homes and elsewhere in the neighborhood that is well maintained and managed.

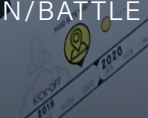


PEOPLE: Help create more quality employment opportunities for residents of Donnelly Homes and the broader neighborhood, build wealth and increase incomes, and enhance health and education.



NEIGHBORHOOD: Help attract and guide public and private reinvestment to improve safety, strengthen the commercial corridors, and enhance parks and open space.

TIMELINE



B2

FIRM/TEAM DESCRIPTION

REQUESTED RFP INFORMATION

1. Name, address, telephone/fax numbers and email address of each firm / professional on the team.

See table below:

2. Location of the primary office which will coordinate the project.

*123 S. Broad Street, Suite 1450
Philadelphia, PA 19109*

3. Identity the individual who will serve as Project Manager for the firm/team and who will direct and coordinate the project to completion.

Hannah Clark, AICP

4. Indicate the role each member of the Planning Firm / Team will play.

See table on next page

5. For any proposed sub-contractors please provide similar information as described in 1 through 4.

MASS Design Group: 289 Main Street, Suite 101, Poughkeepsie, NY 12601

Ideas and Action: 424 Grand Street #1, Brooklyn, NY 11211

See table below:

Team Member	Role	Contact Information
Woo Kim (WRT)	Principal-In-Charge	215.430.5060 / wkim@wrtdesign.com
Hannah Clark (WRT)	Project Manager	215.430.5092 / hclark@wrtdesign.com
Paul McGehee (WRT)	Planner + Urban Designer	215.430.5067 / pmcgehee@wrtdesign.com
Tanushri Dalmiya (WRT)	Planner + Urban Designer	215.430.5080 / tdalmiya@wrtdesign.com
Beatriz Vergara Aller (WRT)	Planner + Urban Designer	215.430.5038 / bvergaraaller@wrtdesign.com
Justin Brown (MASS Design)	Principal	845.473.4003 / jbrown@mass-group.org
Christopher Kroner (MASS Design)	Principal	845.473.4003 / ckroner@mass-group.org
Vrinda Sharma (MASS Design)	Senior Designer	845.473.4003 / vsharma@mass-group.org
Marc Norman (Ideas and Action)	Founder + Principal	917.647.8944 / marcnorman@ideasandaction.net
Merik Mulcahy (Ideas and Action)	Consultant	415.246.0728 / merik@ideasandaction.net

B3

HISTORY OF COLLABORATION

ALLEGHENY DWELLINGS CHOICE NEIGHBORHOOD PLAN | WRT
PITTSBURGH, PA

Basketball Court
Unit at
night

HISTORY OF COLLABORATION

WRT is excited to be partnering with MASS Design and Ideas and Action. MASS Design was a collaborator with WRT on Poughkeepsie's Choice Neighborhoods Planning Grant Application, and we are thrilled to be continuing our partnership that will leverage MASS's ongoing and impact-driven work in Poughkeepsie. Ideas and Action is a partner of MASS and brings deep knowledge and understanding of Poughkeepsie. WRT has worked extensively with the founder of Ideas and Action, Marc Norman, during his time with Durvernay and Brooks on multiple Hope VI projects.



"BLOSSOM AT BARTRAM" CHOICE NEIGHBORHOOD PLAN | WRT
PHILADELPHIA, PA



B4

**FIRM/TEAM
QUALIFICATIONS**



▲ **NORTH CENTRAL
PHILADELPHIA CHOICE
NEIGHBORHOOD PLAN
+ IMPLEMENTATION OF
NC FIVE | WRT**

PHILADELPHIA, PA
Recently, WRT and Jonathan Rose Companies (JRCo) celebrated the completion of NC Five, the fifth and final phase of the HUD Choice Neighborhood Implementation grant. WRT's involvement, which spans both planning and design, started with a planning process that became the focus of a successful \$30 million HUD Choice Neighborhoods implementation grant for the project.

ABOUT WRT

WRT is a team of planners, urban designers, architects, and landscape architects. We value the impact of our collective approach to create simple solutions for complex problems across scales. We serve our communities by designing places that enhance the natural and social environment.

WRT works across scales and professional disciplines to create forward-thinking, actionable solutions that meet the unique needs of the communities we serve. We promote the cross-pollination of ideas, perspectives, and techniques by emphasizing integrative learning, critical thinking, and creative problem solving among our staff of planners, urban designers, landscape architects, and architects, as well as with our clients and partners. We have always believed that although each professional

discipline has a focal area of expertise and concern, each must be viewed as overlapping with the others in a continuum: from the wider ecological, environmental, social, economic, and urban planning factors through landscape, urban design, and ultimately architectural form.

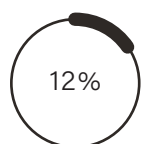
Each of the disciplines we practice seeks a balanced approach to the natural, physical, social, and economic factors in considering a project's sustainability.



ARCHITECTS



PLANNERS

URBAN
DESIGNERSLANDSCAPE
ARCHITECTS

FOUNDED IN

1963

WRT HAS WON

400+PLANNING AND
DESIGN AWARDS

Regardless of the scale of the assignment, all of the firm's work strives to meet high standards of design excellence to express the cultural identity of the place.

WRT's success is based on our tradition of excellence, innovation, and leadership in planning and design, and our commitment to the firm's guiding principles of designing with nature and reinforcing urbanism. We work with communities to address and integrate complex issues related to quality of life and physical character, growth management, economic and fiscal health, infrastructure capacity, and resource preservation and activation. We build on the strengths of those who have come before us, but welcome change as an opportunity to create impact.

Our practice is guided by the following themes:

Placemaking at all Scales

At its core, the craft of placemaking is the process of activating the public realm through design. It is our conviction that placemaking is integral to improving quality of life, supporting inclusive growth, and integrating the shared values of communities.

Achieving Equity

We believe in equitable communities that level playing fields for their most vulnerable citizens—homeless, low-income, youth, elderly, disabled, immigrant, refugee, and LGBTQ. At our core, we believe that while talent is universal, opportunity is not.

Embracing Community Values

The threads of a community create a sense of belonging, strength, comfort, and resiliency. An understanding of these threads—shared stories, common values, a similar culture—forms a foundation from which communities can build capacity, regenerate, and blossom.

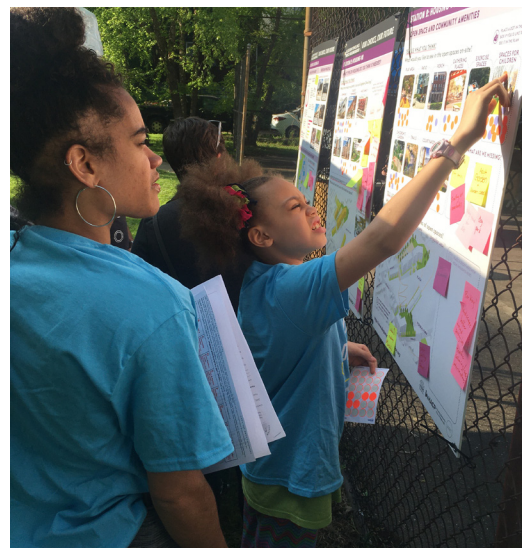
Planning For Resiliency

Our planning and design practice is guided by an ecological and systems-based approach with resiliency at its core. This approach is essential in addressing today's complex challenges dealing with environmental, social, economic, and technological changes. WRT was among the first planning and design firms to recognize the need to "design with nature" in order to sustain natural resources and provide a healthy living environment for all.

Housing + Neighborhoods Practice

WRT approaches housing as a neighborhood revitalization opportunity, harnessing social, cultural, education and heritage resources, as well as best practices in sustainable site development and high-quality building design to create walkable, transit-friendly communities.

Using a rigorous design process, we create solutions for our clients' most immediate challenges—but we also consider and calibrate the impact of our work to accommodate future challenges. We don't impose a particular aesthetic, but rather work within the context of a place to identify common goals and find the best solution through robust community engagement and consideration.



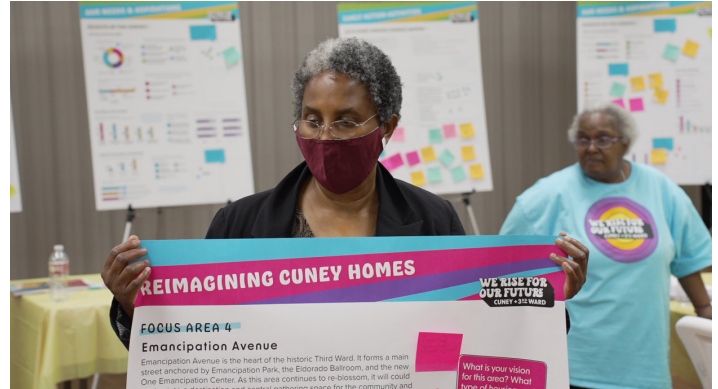
**ALLEGHENY DWELLINGS CHOICE ►
NEIGHBORHOOD PLAN | WRT
PITTSBURGH, PA**

WRT'S CHOICE NEIGHBORHOOD PROJECTS

Over the course of WRT's rich 60-year history, our team has worked on countless Choice Neighborhood, HOPE VI and other housing and neighborhood revitalization projects, both as the grant writer and planning coordinator. WRT has also received 10 implementation grant awards, where our team is often able to continue supporting the efforts as a design partner. Projects that received Choice implementation grant awards are identified with a green star (★) and projects that have been implemented without a Choice implementation grant are identified with an orange star (★).



"BLOSSOM AT BARTRAM" CHOICE NEIGHBORHOOD PLAN | WRT
PHILADELPHIA, PA



HOUSTON THIRD WARD/CUNNEY HOMES CHOICE NEIGHBORHOOD | WRT
HOUSTON, TX

Allegheny Dwellings Choice Neighborhood Plan
Pittsburgh, PA

★ **Blossom at Bartram Choice Neighborhood Plan**
Philadelphia, PA

★ **Bedford Dwellings-Middle Hill Choice Neighborhood**
Pittsburgh, PA

★ **Chouteau Court: Paseo Gateway Choice Neighborhood**
Kansas City, MO

★ **Comanche / 36 North Choice Neighborhood**
Tulsa, OK

Hagerstown Choice Neighborhood
Houston, TX

Harrison Choice Neighborhood
Philadelphia, PA

★ **Houston Third Ward/Cuney Homes Choice Neighborhood**
Houston, TX

LANEY-WALKER HARRISBURG CHOICE NEIGHBORHOOD
Augusta, GA

★ **Marshall-Ridley Choice Neighborhood Plan**
Newport News, VA

★ **Meriden 2020 Choice Neighborhood**
Meriden, CT

★ **McGinley Square Montgomery Choice Neighborhood**
Jersey City, NJ

Meridian East End Choice Neighborhoods Master Plan
Meridian, MS

Midtown Choice Neighborhoods
Kingsport, TN

★ **Mt. Ephraim Avenue Choice Neighborhood**
Camden, NJ

★ **North Central Philadelphia Choice Neighborhood**
Philadelphia, PA

★ **North Trenton / Battle Monument Choice Neighborhood Plan**
Trenton, NJ

One City. Asbury Park. Choice Neighborhoods Transformation Plan
Asbury Park, NJ

★ **Perry Choice Neighborhood**
Buffalo, NY

Roanoke Choice Neighborhoods
Roanoke, VA

★ **Sharswood-Blumberg Choice Neighborhood Plan**
Philadelphia, PA

Southside Michigan Choice Neighborhood
Mobile, AL

Westside Choice Neighborhood
Kansas City, MO

WRT'S PUBLIC HOUSING EXPERIENCE

WRT is a national leader in public housing redevelopment. Our roots stem from the HUD HOPE VI neighborhood revitalization program where our firm was responsible for almost 1/5 of all federal grants (over \$1 billion). Beginning with master plans for Richard Allen Homes in Philadelphia (1993) and Holly Park in Seattle (1994), WRT has worked with nearly a third of the housing authorities associated with the HOPE VI program. We measure our success by the positive impact we've had on the lives of thousands of low- and moderate-income families across the nation.

As HUD transitioned the HOPE VI program to Choice Neighborhoods, WRT has had a similar track record to date, we have worked on a wide range of Choice Neighborhoods projects and comprehensively transformed multiple neighborhoods in Philadelphia, Camden, Newport News, and Kansas City. The foundation of our success is our deep knowledge of mixed-income housing coupled with our nationally recognized community planning practice.

To date we have worked on 39 successful HOPE VI projects, over over 20 Choice Neighborhood projects, with 10 projects going on to receive Implementation Awards, and secured competitive tax credits awards annually from multiple state housing and finance agencies. Our recent track record in securing Choice Neighborhoods grants is unrivaled.

Affordable Home Ownership

In light of national conversations regarding wealth building, WRT has increasing experience in planning for affordable homeownership units within the context of a larger neighborhood-wide housing master plan.

Public Housing Modernization

In addition to being a nationally renowned planning firm, WRT is also at the leading edge of public housing modernization. We are familiar with programs such as RAD, Energy Contracts, 4% and 9% Low Income Housing Tax Credits, senior housing conversions as well as public housing rehabilitation.

We know public housing communities and practice from a place of empathy and care for residents. **Decades of experience have taught us that public housing residents may be some of the most vulnerable citizens in our communities, but they have the same aspirations and concerns as non-public housing residents – good design, safe streets, services for children and seniors, and access to jobs and quality healthcare.** Hence, we approach public housing master planning assignments in the same manner as all of our projects – with passion and thoughtfulness.



**SHARSWOOD-BLUMBERG CHOICE
NEIGHBORHOOD | WRT
PHILADELPHIA, PA**

WRT'S COMMITMENT TO COMMUNITY ENGAGEMENT

We are dedicated to engaging and empowering underrepresented and hard-to-reach stakeholders. From start to finish, we do the work of reaching out, listening, and responding, ensuring people's ideas, needs, and desires are effectively addressed.

WRT excels at designing public engagement strategies and tools that inform, engage, and elicit meaningful dialogue.

We see community engagement as a vital component of the planning process in order to understand and reflect the community's values and aspirations. For this reason, it is critical to begin at the outset of a project. When successful, engagement is also a capacity-building exercise that identifies champions for subsequent implementation and builds collaboration.

▼ **MARSHALL-
RIDLEY CHOICE
NEIGHBORHOOD
PLAN | WRT**
NEWPORT NEWS, VA
*Graduates of the
Neighborhood
Leadership Series*



One Size Does Not Fit All

We do not prescribe any one method of engagement. Instead, we will tailor a set of engagement tools from our extensive toolkit to the unique culture and history of the place and goals of the process. Our team is adept at working with a wide variety of stakeholders that include the very young, seniors, millennials and college students, well-informed as well as marginalized communities where trust in the public process needs to be established or rebuilt.

Reaching Specific Communities

Our approach will ensure that the participation process reaches the community at large, as well as neighborhood residents and other groups that are underrepresented or from under-resourced communities (e.g., non-English speakers, immigrants, people of color, persons with disabilities, LGBTQ, young people, seniors, etc.). We will design the process to specifically involve communities identified as target user groups in the planning process.

Resident-Focused Programs

In order to support capacity building and encouraging power sharing, WRT makes a concerted effort to encourage community members to actively participate in the planning process through specific programming. WRT has successfully lead multiple **Neighborhood Leadership Series**, which is designed to help residents develop a deeper understanding of how planning and

development projects take shape in their city or state and how to share their voices and opinions with city officials and leaders. WRT also frequently trains and hires **Community Ambassadors** (paid local residents) to conduct direct outreach to fellow community members. We have recently and successfully deployed this model in various community planning efforts in Trenton, NJ, Philadelphia, PA, and Newport News, VA. Empowering residents to conduct this type of grassroots outreach provides community members with the opportunity to be the author of their own stories and directly shape the outcome of the plan and be compensated for their time and effort as part of the planning process.

The Power of Storytelling and Compelling Graphics

Stories bring people together, inspire, and motivate. A good story is captivating, educational, frequently universal, and memorable. WRT believes that each community has its own story to tell. Our process starts by learning and getting to know the community and carefully compiling a narrative that tells the story of the current place and its future as the process evolves.

WRT believes that strong storytelling with the use of graphics and engaging visual and oral communication are critical to eliciting feedback and getting leaders and residents excited about the project, resulting in plans that are easily adopted, understood, and ultimately implemented.

Bridging the Digital Divide

WRT is currently working with other communities around the country in the re-calibration of “traditional” community engagement strategies and has created a set of tailored engagement tools (from high-tech to no tech) to enable residents to discover the distinct characteristics of their communities, as well as their needs and ambitions, and plan expectations. COVID-19 has magnified inequities and system failures that predated this crisis. One such example of inequity is apparent through the digital divide—tipping the scales in favor of those who can afford the necessary technology and infrastructure required to access the internet. WRT’s flexible engagement strategy includes a hybrid of in-person and virtual touchpoints that seek to meet people where it is most convenient for them.

TOP RIGHT: ▼ OUR LEGACY, OUR COMMUNITY: A RENEWED VISION FOR NORTH TULSA | WRT

TULSA, OK

The focus of Our Legacy Tulsa is the redevelopment of 56-acres of publicly owned land with eventual transfer to a community-led ownership model.

BOTTOM LEFT: ▼ "BLOSSOM AT BARTRAM" CHOICE NEIGHBORHOOD PLAN | WRT

PHILADELPHIA, PA

BOTTOM RIGHT: ▼ CUNEY HOMES/ THIRD WARD CHOICE NEIGHBORHOOD PLAN | WRT

HOUSTON, TX

Photos of our resident storytelling series



WRT'S COMMITMENT TO EQUITY, DIVERSITY, AND INCLUSION

WRT is focused on integrating elements of equity, diversity, and inclusion (EDI) into all of our work. A focus on EDI is critical to achieving the best project outcomes for all.

We care deeply about the social and economic health of our cities. Our focus on neighborhoods, communities, education, and parks and open space are foundational elements that promote individual and community health in such a way that our work directly helps individuals, families, and communities elevate themselves and, in doing so, improve their quality of life. This kind of “wealth-building” is not just monetary, it’s about creating a more universal wealth that is related to stable, diverse, and resilient communities and the local ecosystem. Homes, education environments, parks and open space, and even high performing buildings and landscapes are all critical pieces to building this communal wealth. Creating places that promote health and wellness and lower utility costs for families leads to additional available wealth to be invested in education and actions that lead to advancement.

EDI in Our Partnerships

We strive to hire professionals and bring aboard other firms as partners in our projects who match the diversity of communities which we serve. WRT’s collaboration includes working with communities and other design professionals on many of our projects. We often partner with M/W/DSBE firms to bring specific expertise to the team.

To this end, we are joined by Ideas and Action, a certified MBE firm with whom WRT has collaborated on several similar projects. Ideas and Action will be providing the Market Study to support and build out the understanding of the local housing market and market conditions and identify a development program for mixed-income housing in the Choice Neighborhoods.



ALLEGHENY ►
DWELLINGS CHOICE
NEIGHBORHOOD | WRT
PITTSBURGH, PA
Community event

OUR PARTNERS

MASS Design Group (MASS)

We are 135+ architects, landscape architects, builders, engineers, writers, filmmakers, and researchers representing twenty countries across the globe. MASS is a mission-driven organization founded to support partners in delivering innovative capital projects that fundamentally improve lives and act as enablers of shared prosperity. Our work focuses on leveraging architecture, as well as inclusive design and construction processes, to create better health, justice, equity, and long-term sustainability.

We believe that approaching architecture as a purpose-built process requires a simple but fundamental shift: we need to think not about what buildings are, but what they do. MASS commits to longterm partnerships with mission-aligned organizations to advance justice and human dignity within schools, housing, health, education, agriculture, and the public realm in the communities in which we work.

Hudson Valley Design Lab

In 2016 MASS received support from the Dyson Foundation to launch a pilot project in the heart of downtown Poughkeepsie. Collaborating with Columbia University, the Hudson Valley Design Lab (HVDL) undertook participatory community-based research, established partnerships with leading local organizations, and identified a series of transformative projects in Poughkeepsie. Employing adaptive re-use design and development strategies, the HVDL team has unlocked over \$7.2M of new capital to support projects including the redesign of a disused Trolley Barn into an arts center, masterplan for the activation of the City's decommissioned water cistern; and the revitalization strategy for a neglected but critical waterway that runs through downtown.

HVDL has converted from a philanthropically-driven Lab to a financially sustainable, regionally-focused office with a growing team of designers, researchers, and artists. The MASS Hudson Valley office houses the new Fringe Cities Lab which is transmitting lessons-learned from Poughkeepsie to other cities that share a similar history and challenges. In addition, MASS has several other labs that host an interdisciplinary mix of emergent research, advocacy, and cross-cutting partnerships, supported by philanthropic investment.



First Lady, Jill Biden, visiting Poughkeepsie and offering support for Day One, a key project MASS is working on.

Ideas and Action

Ideas and Action is a multidisciplinary, MBE-certified consulting firm working nationally on real estate and planning projects that promote inclusive community development. Founded in 2015 by Marc Norman, Ideas and Action leverages extensive finance, policy, planning and development experience to identify and advance the objectives of our academic, government, for-profit, non-profit and community-based partners. Ideas and Action's consulting experience spans a wide range of advisory services from needs assessments and stakeholder engagement, to policy and program evaluation, development feasibility analysis and funding strategies. Ideas and Action advises on policy and implementation through planning processes, program mix and operating plans, partner solicitation, evaluation and structuring of real estate transactions, partnerships and governance structures.



WOO
KIM

AICP, PP, LEED AP
PRINCIPAL | URBAN DESIGNER + PLANNER



PROJECT ROLE: PRINCIPAL-IN-CHARGE

PROJECT EXPERIENCE

Project Award +

Meriden 2020 Choice Neighborhood +
Meriden, CT

Perry Choice Neighborhood + Perry Homes
Buffalo, NY

Hagerstown Choice Neighborhood
Hagerstown, MD

Cuney Homes/Third Ward
Choice Neighborhood
Houston, TX

Marshall-Ridley Choice Neighborhood
Implementation +
Newport News, VA

North Central Philadelphia Choice
Neighborhood and Implementation of
Paseo Verde + + NC Five +
Philadelphia, PA

"Blossom at Bartram"
Choice Neighborhood Plan +
Philadelphia, PA

Bedford Dwellings
Choice Neighborhood Plan + Implementation
Pittsburgh, PA

Sharswood-Blumberg
Choice Neighborhood Implementation
Philadelphia, PA

Kansas City West Bluff Choice Neighborhood
Kansas City, MO

Chouteau Courts-Paseo Gateway
Choice Neighborhood
Kansas City, MO

North Trenton/Battle Monument
Choice Neighborhood
Trenton, NJ

Allegheny Dwellings
Choice Neighborhood Plan + Implementation
Pittsburgh, PA

Augusta Choice Neighborhood
Augusta, GA

Woo Kim is a principal in WRT's planning and urban design practice. His work is focused primarily on neighborhood revitalization and the redevelopment of equitable communities. To date, he has planned for the development of thousands of affordable housing units nationwide, and has transformed communities large and small. He is adept at reaching minority/immigrant population groups, and building community capacity and trust. He speaks regularly at national conferences and his work is published in *Planning Magazine* and APA's *Zoning Practice*. Woo teaches periodically at the University of Pennsylvania's School of Design. His most recent studio challenged graduate students to understand and propose policy solutions to tackle gentrification's negative side effects in rapidly growing cities.

EDUCATION

University of Pennsylvania, *Master in City Planning, Certificate in Urban Design*

University of California at Berkeley, *Bachelor of Art in Architecture*

National Charrette Institute, Certification

AFFILIATIONS + AWARDS

American Planning Association

American Institute of Certified Planners

National Association of Housing and Redevelopment Officials

ENGAGEMENT

National Planning Conference (NPC) 2019 "Unconventional Tools to Combat Gentrification"

NPC 2019 - "Is Zoning Racist?"

NPC 2018 - "Harnessing Gentrification's Momentum Towards Social Impact"

NPC 2017 - "Carrots and Sticks of Fair Housing"

NPC 2016 - "Balanced View of Fair and Affordable Housing"

NPC 2014 - "HUD Choice Neighborhoods"

APA Zoning Practice September 2017 - Zoning to Support Low-Income Housing Tax Credit Projects

Planning Magazine December 2018 - The Scales of Gentrification

Planning Magazine November 2015 - Give Choice a Chance



HANNAH CLARK

AICP
ASSOCIATE | PLANNER

PROJECT ROLE: PROJECT MANAGER



PROJECT EXPERIENCE

Project Award +

Hagerstown Choice Neighborhood
Hagerstown, MD

Kansas City West Bluff Choice Neighborhood
Kansas City, MO

Augusta Choice Neighborhood
Augusta, GA

PHA Harrison Choice Neighborhood
Philadelphia, PA

Norfolk Comprehensive Plan
Norfolk, VA

Lancaster East End Small Area Plan
Lancaster, PA

*City of Allentown Comprehensive Plan –
Allentown Vision 2030 +*
Allentown, PA

*City of Allentown
Community Ambassadors Program*
Allentown, PA

*City of Allentown Neighborhood Planning:
1st and 6th Wards*
Allentown, PA

*City of Bethlehem
Strategic Plan to Address Homelessness*
Bethlehem, PA

South Whitehall Township Comprehensive Plan
South Whitehall, PA

Downingtown Borough Comprehensive Plan
Downingtown, PA

Springfield Township Comprehensive Plan
Springfield Township (Bucks County), PA

Upper Dublin Township Comprehensive Plan
Upper Dublin, PA

Beaver County Comprehensive Plan
Beaver County, PA

OnePGH: Pittsburgh's Resilience Strategy
Pittsburgh, PA

**projects in italics completed prior to Hannah
joining WRT*

Hannah brings over a decade of experience in urban planning, resilient systems, and authentic community engagement and consensus building. Her practice spans the neighborhood, city, and regional scales. From leading community workshops to envision equitable, resilient, and inclusive neighborhoods to drafting the award-winning comprehensive plan Allentown Vision 2030, Hannah works to make planning processes accessible, engaging, and practical. Hannah brings a practitioner's perspective to her projects, understanding the real challenges communities face in planning, land use, zoning, and development and works to provide realistic, accessible, and innovative solutions that leverage existing assets to create opportunities. She has extensive experience in public speaking and community engagement, having facilitated engagement activities for groups of 10 to over 200 participants. Hannah currently serves on the Allentown City Planning Commission and as the chapter president of the Lehigh Valley/ Berks County Section of the PA APA.

EDUCATION

University of California, Berkeley, Master of City Planning

Brandeis University, Bachelor of Environmental Studies, Minor in Spanish

AFFILIATIONS + AWARDS

American Planning Association

American Institute of Certified Planners

PA Governor's Award for Local Government Excellence for Allentown Vision 2030 (awarded in March 2020)

ENGAGEMENT

Planning Commissioner, Allentown City Planning Commission (2021-2024)

Board Chair, Lehigh Valley/Berks County Section of the PA APA (2021-2023)

Community Impact Fellow, Leonard Parker Poole Institute for Health (2020-2021)

Youth Leadership Instructor – Urban Planning Seminar, Community Bike Works (Allentown, PA) (2018-2020)

LANGUAGE PROFICIENCIES

English (Native), Spanish (Highly Proficient)



PAUL L. MCGEHEE II



LANDSCAPE DESIGNER + URBAN DESIGNER

PROJECT ROLE: LANDSCAPE DESIGNER

PROJECT EXPERIENCE

Project Award +

Cuney Homes/Third Ward
Choice Neighborhood
Houston, TX

Sharswood-Blumberg Choice Neighborhood
Implementation
Philadelphia, PA

Newark360 Master Plan +
Newark, NJ

Our Legacy, Our Community:
A Renewed Vision for North Tulsa
Tulsa, OK

"Blossom at Bartram"
Choice Neighborhood Plan +
Philadelphia, PA

Golden Hill
Ulster, NY

DCHA Greenleaf Development
Washington, DC

Philadelphia Urban Agriculture Plan
Philadelphia, PA

I-35 Corridor Vision Plan
Various Locations

St. James Design Competition
San Jose, CA

Fall River Downtown
Fall River, MA

Macon Water Authority Campus Plan
Macon, GA

Willie "Woo Woo" Wong Playground
San Francisco, CA

South Central Waterfront Plan
Austin, TX

Treasure Island Streetscape Master Plan +
Open Space Design Concept
San Francisco, CA

Hunter's Point Shipyard
San Francisco, CA

Paul is a Landscape Designer and Urban Designer. Inspired by the relationship the experience of a landscape has to one's identity and story, Paul is focused on cultural landscapes (specifically Black and Queer) and the design of public space in our communities. Paul believes that such narratives make clear the function and possibility of our spaces. Thus, Paul's approach as a designer is rooted in history and collective self reflection. In addition to his design acumen, Paul is a skilled public speaker, facilitator and artist, and often utilizes these skills when working with people on developing collective visions for the future of their communities.

EDUCATION

University of California Berkeley, *Master of Landscape Architecture*
Concentration in Urban Design

University of California Berkeley, *Master of City Planning*
Concentration in Affordable Housing

Howard University, *Bachelor of Arts, Political Science,*
Community Development + Architecture

AFFILIATIONS + AWARDS

Speaker: 2014 Commencement Ceremony, CED

Contributing Illustrator: Representing Landscapes; Digital (2015)

Recipient: 2014 Eisner Prize for Creative Arts in Landscape Architecture, CED

Finalist: 2014 Olmsted Fellowship, LAF

Participant: 8th Intl Biennial on Landscape Architecture, ESTAB Barcelona

Recipient: 2011, 2012 & 2014 Berkeley Honor Design Award, UC Berkeley

Participant: 2015 Xtreme LA Challenge, LAF

1st Place: 2014 Watermarks Intl. Design Comp.



TANUSHRI
DALMIYA



PLANNER + URBAN DESIGNER

PROJECT ROLE: PLANNER + URBAN DESIGNER

PROJECT EXPERIENCE

Project Award +

Kansas City West Bluff Choice Neighborhood
Kansas City, MO

Norfolk Comprehensive Plan
Norfolk, VA

Augusta Choice Neighborhood Master Plan
Augusta, GA

PHA West Park Choice Neighborhood
Implementation
Philadelphia, PA

Research in Action Grant Work:
Unhoused, Under Attack

**Tanushri comes to WRT with extensive prior leadership positions and research, educational, and field work experience.*

Tanushri brings a unique blend of passion, experience, and expertise to her role as a Planner and Urban Designer at WRT. With a profound commitment to shaping the built environment for social impact, she stands out as a storyteller who believes in empowering communities through design. Her professional ethos revolves around creating opportunities that enable communities to leverage their intrinsic knowledge as expertise, particularly in projects that intersect urban systems, social equity, and environmental justice. Her passion is evident in her desire to work on projects that prioritize human experiences, fostering conditions for interaction, engagement, and inclusion.

Tanushri’s background is rich and varied, with prior experience working with non-governmental institutions on capacity building in refugee settlements and marginalized communities across Asia and Africa. This experience, coupled with her work with international organizations like the Inter-American Development Bank, has equipped her with a global perspective and a deep understanding of how design, policy, and systems thinking can improve livelihoods. Tanushri is not only a seasoned professional with over four years of architectural experience but also an entrepreneurial leader, having founded Vayam, a design collective in India. Her current projects at WRT, including the Choice Neighborhoods Initiative in Kansas City and the comprehensive plan for Norfolk, Virginia, reflect her dedication to using her skills in spatial analytics, 3D modeling, and computational design to make significant contributions to urban design and planning.

EDUCATION

Harvard University Graduate School of Design, *Master of Architecture in Urban Design*
RV College of Architecture (Bangalore, India), *Bachelor of Architecture*

AWARDS

Project Award: Loeb Library Collection (3x)

National Award for Excellence in Architectural Thesis Nominee (National Institute of Advanced Studies in Architecture, India)

Proactis Award: Best Architecture Design Student of the Year

Crusader in Indian Design Award (GoodHomes)

LANGUAGE PROFICIENCIES

English (Spoken), Hindi (Native), Kannada (Regional)



BEATRIZ
VERGARA ALLER

URBAN DESIGNER + PLANNER

ROLE: URBAN DESIGNER + PLANNER

PROJECT EXPERIENCE

- Project Award +
- Hagerstown Choice Neighborhood
Hagerstown, MD
- Kansas City West Bluff Choice Neighborhood
Kansas City, MO
- Cuney Homes/Third Ward
Choice Neighborhood
Houston, TX
- North Trenton/Battle Monument
Choice Neighborhood +
Trenton, NJ
- Allegheny Dwellings Choice Neighborhood
Pittsburgh, PA
- Bedford Dwellings Choice Neighborhood Plan
Pittsburgh, PA
- Augusta Choice Neighborhood
Augusta, GA
- Newark360 Master Plan +
Newark, NJ
- Trenton TOD Redevelopment Areas Plan
Trenton, NJ
- Clark-Fulton Together Neighborhood Plan
Cleveland, OH

Beatriz Vergara Aller is an urban designer at WRT and a licensed architect in Spain whose projects focus on comprehensive approaches to neighborhood transformation, urban infill, and neighborhood planning with a strong component of community and stakeholder engagement. She is experienced synthesizing complex housing, mobility, and environmental systems to create holistic urban communities.

With training in both architecture and urban design, as well as her combination of international work experience, Beatriz has a unique understanding of the symbiotic relationship of buildings, environments, and neighborhoods, and the people who inhabit them. She is particularly committed to improving how people navigate through cities and how designers provide a correspondence between social space and an accessible city. Beatriz is fluent in Spanish, English, and French which allows her to communicate effectively across diverse communities.

EDUCATION

- University of Texas at Austin, *Master of Science in Urban Design*
- Universidad de Valladolid, *Bachelor of Architecture, Master of Architecture*

AFFILIATIONS + AWARDS

- American Planning Association
- APA New Jersey Planning Award - Outstanding Plan, Newark360 Master Plan (2022)
- New Jersey Future - Smart Growth Award, North Trenton/Battle Monument Choice Neighborhood (2022)

ENGAGEMENT

- Architecture + Design Education (ADE) program, Philadelphia, 2022
- “Design as Common Good” Symposium panel speaker, Switzerland, 2021

LANGUAGE PROFICIENCIES

- Spanish (Native), English (Fluent), French (Fluent)



Justin Brown, AIA, LEED AP

Principal

M. Arch, Harvard University
BA. Arch, University of Pennsylvania, Summa
Cum Laude

Justin is a co-founder of MASS and a Design Principal focused on architectural work in the United States and quality control of projects abroad. He is dedicated to the growth of MASS's social justice portfolio and applying MASS's unique working method to projects in the US. He was the project architect for the Equal Justice Initiative's Memorial to Peace and Justice and co-founder of the Hudson Valley Office in Poughkeepsie, NY, which leverages community-based design to unlock upstream capital to build in disinvested cities.

Registration

Licensed Architect, New York - 03747

Selected Projects

58 Parker Ave: Scenic Hudson Offices & Outdoor Community Space

Scenic Hudson | Poughkeepsie, New York, USA

Principal-in-Charge | Adaptive reuse of a historic former factory in the City of Poughkeepsie into a regenerative landscape, public park, community and rental space, and pandemic resilient headquarters for one of the regions' strongest environmental organizations.
Size: 30,000 sq ft

Day One | Día Uno Learning Center

Day One Early Learning Community | Poughkeepsie, New York, USA

Advising Principal | Visioning and planning for the adaptive reuse of an existing facility to create a new and innovative early learning community in Poughkeepsie.
Size: 15,000 sq ft, 1 394 sq m

The Youth Opportunity Union

City of Poughkeepsie | Poughkeepsie, New York, USA

Advising Principal | The Youth Opportunity Union (YOU) will be a new, multi-use community facility for recreational, educational and healthy opportunities for youth in Poughkeepsie.
Size: 34,600 sf

Family Partnership Center Community Porch

Family Services, Inc. | Poughkeepsie, New York, USA

Principal | Conceptual design for the Family Partnership Center, a building that houses social services, youth programs and healthcare non-profits for the city.
Built: 3,000 sq ft

Maple Street Affordable Housing

Maple St. of Dutchess LLC | Poughkeepsie, New York, USA

Principal | Affordable housing with a new pedestrian street to build social capital and connect downtown Poughkeepsie and surrounding neighborhoods.
Size: 38,600 sq ft / 3586 sq m

MASS.

Hudson Valley Farm Hub

Hudson Valley Farm Hub | Hurley, New York, USA

Principal | Campus masterplan and agricultural shop design for a diversified research and educational farm.
Size: 27,080 sq ft / 2,516 sq m
Site: 1500 ac / 607 ha

Fringe Cities: Legacies of Renewal in the Small American City

AIA NY | Center for Architecture | New York, New York, USA

Principal-in-Charge | Exhibition of original research on 100 "Fringe Cities," defined as independently situated, small cities that were severely impacted by urban renewal.
Exhibit: 1,000 sq ft

Poughkeepsie Trolley Barn

Hudson River Housing, MidHudson Heritage Center | Poughkeepsie, New York, USA

Principal-in-Charge | Adaptive reuse of historic transit garage into a community arts hub to revitalize downtown Poughkeepsie.
Size: 14,400 sq ft / 1,338 sq m

Fall Kill Master Plan

Scenic Hudson, Inc. | Poughkeepsie, New York, USA

Principal | Activation of a forgotten urban creek for education, capacity building, recreation and communal gathering.
Site: 1 mile

The Academy Food Hall and Apartments

Baxter Built, Opportunity Poughkeepsie 1 | Poughkeepsie, New York, USA

Project Architect | Adaptive reuse of two multi-level structures into housing and a vibrant hub for collective food preparation, education, entrepreneurship, and consumption.
Size: 70,000 sq ft / 6500 sq m

National Memorial for Peace and Justice

Equal Justice Initiative | Montgomery, Alabama, USA

Project Architect | The nation's first memorial dedicated to the victims of lynching, giving form to the silenced history of racial terror in America.
Size: 6 ac / 2.4 ha



Christopher Kroner

Principal

M. Arch, Columbia University GSAPP
B. Arch, University of Virginia SARC

The leader of the Hudson Valley Office of MASS Design Group in Poughkeepsie, New York, Christopher joined MASS in 2017 to help expand its initiatives in the area. He is an fervent and award-winning practitioner of architecture and he has taught architectural and urban design in leading graduate and undergraduate universities worldwide.

Christopher sees architecture and design as a daily practice of outreach. He leads multidisciplinary teams to research, remap, and build networks to communities in need. His work showcases both adaptive reuse and new construction as coalition building methods to connect public interest and regenerate urban fabric. In addition to design work, he leads all Poughkeepsie-based community outreach work, serves as a design consultant to the Poughkeepsie Planning Board, and volunteers time as a board member to the Revive College Hill Park Coalition and The Art Effect, while maintaining a roles in community and regional coalitions, namely the Dutchess County Smart Climate Communities Taskforce, the Northside Collaborative, and the Poughkeepsie Alliance.

MASS.

Selected Projects

The Youth Opportunity Union

City of Poughkeepsie | Poughkeepsie, New York, USA

Principal-in-Charge | The Youth Opportunity Union (YOU) will be a new, multi-use community facility for recreational, educational and healthy opportunities for youth in Poughkeepsie.

Site: 3.35 acres

58 Parker Ave: Scenic Hudson Offices & Outdoor Community Space

Scenic Hudson, Inc. | Poughkeepsie, New York, USA

Advising Principal | Adaptive reuse of a historic factory in the City of Poughkeepsie into a regenerative landscape, public park, community and rental space, and pandemic resilient headquarters for one of the regions' strongest environmental organizations.

Built: 30,000 sq ft

Fall Kill Master Plan

Scenic Hudson, Inc. | Poughkeepsie, New York, USA

Principal | Activation of a forgotten urban creek for education, capacity building, recreation and communal gathering.

Site: 1 mile

Maple Street Affordable Housing

Maple St. of Dutchess LLC | Poughkeepsie, New York, USA

Project Architect | Affordable housing with a new pedestrian street to build social capital and connect downtown Poughkeepsie and surrounding neighborhoods.

Size: 38,600 sq ft / 3586 sq m

The Academy Food Hall and Apartments

Baxter Built, Opportunity Poughkeepsie 1 | Poughkeepsie, New York, USA

Principal | Adaptive reuse of two multi-level structures into housing and a vibrant hub for collective food preparation, education, entrepreneurship, and consumption.

Built: 70,000 sq ft / 6500 sq m

Poughkeepsie Trolley Barn

Hudson River Housing, MidHudson Heritage Center | Poughkeepsie, New York, USA

Principal | Adaptive reuse of historic transit garage into a community arts hub to revitalize downtown Poughkeepsie.

Built: 14,400 sq ft

Champion's Walk: Corey Ingram Circle

Poughkeepsie Alliance | Poughkeepsie, New York, USA

Principal-in-Charge | A celebration of local champions through the collective creation of a new gateway and memorial on Poughkeepsie's Northside.

Day One | Día Uno Learning Center

Day One Early Learning Community | Poughkeepsie, New York, USA

Principal-in-Charge | Visioning and planning for the adaptive reuse of an existing facility to create a new and innovative early learning community in Poughkeepsie.

Built: 15,000 sq ft, 1 394 sq m

College Hill Park Master Plan

City of Poughkeepsie | Poughkeepsie, New York, USA

Principal-in-Charge | Stewardship of a historic park to foster cultural exchange, drive economic activity, and support community health.

Site: 101 Acres

College Hill Park Cistern

City of Poughkeepsie | Poughkeepsie, New York, USA

Principal-in-Charge | Design to transform a relic of water infrastructure into a regional arts destination and catalyst for city-wide transformation.

Building: 36,000 sq ft

New City Parks: Malcolm X Park

New City Parks Initiative, Regional Plan Association | Poughkeepsie, New York, USA

Principal-in-Charge | Preliminary designs services for improved green infrastructure Poughkeepsie.

Site: 1.30 Acres



Vrinda Sharma

Senior Designer

M. Architecture and Urban Design, Columbia University GSAPP
BA Architecture, NMIMS University Mumbai, India

Vrinda joined MASS as an Urban Designer in 2017 and is based in Poughkeepsie Office. She was born and raised in India and is passionate about amplifying the strength of communities for collective empowerment. Before joining MASS she received her Master's in Architecture and Urban Design from Columbia Graduate School of Architecture, Planning and Preservation (GSAPP). She was highly inspired by the local initiatives within the community during the Fall Design Studio focused on Poughkeepsie and decided to return and work for the community. She has contributed in various local projects in Poughkeepsie including Trolley Barn - an adaptive reuse community art space and FallKill - an inclusive creek revitalization project. Her work at MASS and its model of proximity, has developed her design skills to reinforce social roots by involving the community in the discourse of design. She is also working towards developing a holistic graphic language that is inviting, informative, impactful and comprehensive, and will help in representing the dynamics of underserved groups.

Prior to the US chapter she has worked in India and holds a Bachelor's in Architecture from Balwant Sheth School of Architecture, India.

Selected Projects

58 Parker Ave: Scenic Hudson Offices & Outdoor Community Space

Scenic Hudson | Poughkeepsie, New York, USA

Project Designer | Adaptive reuse of a historic former factory in the City of Poughkeepsie into a regenerative landscape, public park, community and rental space, and pandemic resilient headquarters for one of the regions' strongest environmental organizations. 30,000 sq ft

The Academy Food Hall and Apartments

Baxter Built, Opportunity Poughkeepsie 1 | Poughkeepsie, New York, USA

Project Designer | Adaptive reuse of two multi-level structures into housing and a vibrant hub for collective food preparation, education, entrepreneurship, and consumption. 70,000 sq ft / 6500 sq m

289 Main Street

Baxter Built | Poughkeepsie, New York, USA

Project Designer | Activation of a vacant storefront space on Main Street for commercial and residential uses, as well as a new office space for MASS's Poughkeepsie office 11,500 sq ft

Poughkeepsie Trolley Barn

Hudson River Housing, MidHudson Heritage Center | Poughkeepsie, New York, USA

Project Designer | Adaptive reuse of historic transit garage into a community arts hub to revitalize downtown Poughkeepsie. 14,400 sq ft

Hudson Valley Farm Hub

Hudson Valley Farm Hub | Hurley, New York, USA

Project Designer | Campus masterplan and agricultural shop design for a diversified research and educational farm. Shop: 27,080 sq ft / 2,516 sq m Site: 1500 ac / 607 ha

MASS.

Corey Ingram Circle

Poughkeepsie Alliance | Poughkeepsie, New York, USA

Project Designer | A celebration of local champions through the collective creation of a new gateway and memorial on Poughkeepsie's Northside.

Fall Kill Master Plan

Scenic Hudson | Poughkeepsie, New York, USA

Project Designer | Activation of a forgotten urban creek for resilience and communal gathering through creative placemaking and adaptive design. 1 mile

College Hill Park Cistern

City of Poughkeepsie | Poughkeepsie, New York, USA

Project Designer | Design to transform a relic of water infrastructure into a regional arts destination and catalyst for city-wide transformation. 36,000 sq ft

Sisters of Charity Foundation: St. Vincent Charity Health Campus Facility

Sisters of Charity Foundation | Cleveland, Ohio, USA

Project Designer | Facility planning and visioning services for the oldest hospital campus in Cleveland.

Blackinton Mill Adaptive Reuse Housing

The Beyond Place, LLC | North Adams, Massachusetts, USA

Project Designer | Adaptive reuse of a historic mill for housing within a 200-acre, mixed-use hospitality project. 80,000 sq ft; Site: 200 Acres

Good Shepherd Conservancy

Good Shepherd Poultry Ranch, EJF Philanthropies | Lindsborg, Kansas, USA

Project Designer | An educational hub dedicated to the preservation of biodiversity through agricultural conservation, ecological resilience, and food system innovation. 10,000 sq ft; Site: 160 acres

Ideas and Action

Marc Norman



505 E. Huron Street, #506, Ann Arbor, MI 48104 / 917-647-8944
www.ideasandaction.net / marc@marcnorman.net

Urban planner and organizational leader and independent developer with a 25-year career at the intersection of development, finance, design, planning, and cultural programming throughout the country.

Employment

2022 - Current	Associate Dean, Schack Institute of Real Estate at the New York University
2015 - Current	President, Ideas and Action, A Consultancy working nationally on housing and community development
2021 – 2022	Faculty Director, Weiser Center for Real Estate, Ross School of Business, University of Michigan
2017 - 2022	Associate Professor of Practice, University of Michigan Taubman College of Architecture and Urban Planning
2014-2015	Loeb Fellow, Harvard Graduate School of Design 2014-15
2012-2015	Professor of Practice and Director, UPSTATE: Design Research and Real Estate at Syracuse University
2008-2012	Vice President, Deutsche Bank (DB) Community Development Finance Group
2000- 2008	Managing Director, Duvernay + Brooks LLC, New York (D+B)
1998-2000	Senior Associate, Lehman Brothers, New York
1995-1998	Senior Program Manager, Local Initiatives Managed Assets Corp. (LISC, New York Equity Fund)
1991-1995	Senior Project Manager, Skid Row Housing Trust (SRHT), Los Angeles

Education

1992	UCLA Architecture and Urban Planning: Master of Arts in Urban Planning
1989	University of California, Berkeley: Bachelor of Arts in Political Economy of Industrialized Societies
1987-1988	Institut d'Etudes Politiques, Lyon, France: Urbanism, Geo-Politics

Recent Projects

- Greater Hill District Plan, Pittsburgh PA
- Community Investment Plan, Clark Fulton, Cleveland, OH
- Albina Vision Trust, Master planning, housing and economic development, Portland, OR
- Hines Drive Greenway Plan, Economic Development Analysis, Wayne County, MI
- Advisor, Ann Arbor Housing Commission, Acquisition of Senior Housing
- Housing and Economic Development Consultant for Detroit Cody Rouge/Warrendale Framework Plan
- Financial Consultant for City of Ann Arbor City Owned Property Development and Disposition
- Strategic Advisor on Housing and Community Development Greater Corktown Framework Plan, Detroit
- Housing and Economic Development Consultant, New York State Downtown Development initiative, Schenectady, NY

Strategic Planning

- Lead and team member for a variety of engagements with non-profit, municipal and for-profit entities. Specializing in affordable and mixed income housing, economic development taking the form of master plans, RFPs, strategic interventions, financing analysis and preliminary site planning. Extensive work in assisting public entities in structuring development partnerships throughout the United States. (Ideas and Action, D+B).

Development

- Development of 300 units (SRHT). Consultant to numerous development teams and public agencies in structuring and closing over thirty multi-phase, mixed-finance transactions in seven states in partnership with more than 10 development partners and 13 housing authorities (D+B). Independent developer of small multifamily developments.

Lending

- Primary responsibility for structuring and funding loans, tax exempt bonds and tax credit equity to development projects and lines of credit to CDFIs as Vice President at Deutsche Bank (\$300 million closed).
- Responsibility for underwriting and closing predevelopment, construction and mezzanine financing (Lehman, NYEF).

Ideas and Action

Merik D. Mulcahy

208 Bowery | New York, NY 10012 | (415) 246 0728 | merik@ideasandaction.net



Merik Mulcahy is a consultant at Ideas and Action and a real estate development professional with eight years of public and private-sector experience in housing, hospitality, and commercial mixed-use development. Merik brings city government experience with public-private real estate transactions, complex programming and financing structures, capital planning and community engagement. Merik's private sector acquisitions and development experience spans 26 secondary and tertiary metro markets throughout the U.S. Merik is a graduate of Princeton University with a BA in political science, and a certificate in urban studies.

Experience

Ideas and Action, New York, NY

September 2020-Present

Consultant

- Lead analysis, deliverable production and project management for consulting engagements with academic, governmental, for-profit and non-profit partners across the U.S.
- Strategic advisory and benchmarking on financing, feasibility, governance, policy and planning for housing and community development projects

Representative engagements: Ann Arbor Housing Commission Affordable Housing Acquisition initiative (Michigan); Albina Vision Trust Community Investment Plan (Portland, OR); Downtown Syracuse I-81 Elevated Hwy Removal and Community Grid Vision Plan (New York); Detroit North End Neighborhood Framework Plan; Robert Wood Johnson Foundation Bond Markets & Racial Equity Initiative; Greater Hill District Master Plan (Pittsburgh, PA); Corporation for Supportive Housing RACE Initiative; Clark Fulton Community Investment Plan (Cleveland, OH); Boston Planning & Development Agency Real Estate Strategy Consultant Services

MCR Investors, New York, NY

November 2017-September 2020

Senior Associate – Acquisitions & Development

- Manage all aspects of acquisitions from sourcing through closing, including pipeline management, underwriting and business plan development, contract negotiation, Investment Committee approvals and full due diligence
 - Acquired 30 hotels in 19 transactions across 26 U.S. markets and 17 States
 - Managed disposition of 3 assets including the Hilton St. Louis and Hampton Inn at Oriole Park in Downtown Baltimore
- Support all aspects of capital markets activities including equity fundraising, financing and re-financing
 - \$300MM MCR Hospitality Fund LP (closed 2018), \$450MM MCR Hospitality Fund II LP (first closing June 2020) and \$150MM MCR Opportunity Fund LP (first closing June 2020) discretionary equity funds raised entirely in-house
 - \$650MM re-financing of 53-hotel portfolio and \$762MM in single asset financings across 34 transactions
- Underwrite and negotiate contracts for value-add initiatives across the MCR portfolio including:
 - Renovations and capital improvements with MCR Construction team
 - Operational improvements with MCR Property Management, including negotiation of labor agreements and 3rd party management agreements
 - Pricing and market segmentation rationalization with MCR Sales & Marketing team
 - Monetization of undermanaged real estate assets including retail, parking, event space, development rights and land

New York City Economic Development Corporation, New York, NY

September 2014-October 2017

Assistant Vice President – Real Estate Transactions Group (previous Senior Associate; Associate)

- Performed opportunistic acquisitions of residential development sites and commercial assets to advance the City's policy goals
 - Proposed and secured approval for a \$200M acquisition fund targeting \$5M-\$20M housing development sites and \$15M-\$70M Class B/C industrial-office assets in outer-borough neighborhoods
 - Managed sourcing, pipeline, underwriting and due diligence
 - Negotiated term sheets and contracts of sale with sellers
 - Presented opportunities to NYCEDC Board Real Estate Committee for approval
 - Closed on 4 development sites within the fund's first year
- Sourced, negotiated and executed real estate transactions with public and private partners for the redevelopment or re-positioning of the City of New York's real estate portfolio
 - Evaluated development and re-positioning opportunities with new entitlements, land subsidy and/or real estate tax incentives including PILOT agreements, NYS §421-a, NYS Article XI, and NYC ICAP programs
 - Built and maintained detailed pro forma financial models with complex partnership structures and financing including 4% LIHTC, NYCHDC tax-exempt bond financing, NYCHDC / NYCPD subordinate loans, New Markets Tax Credits, Federal and State Historic Tax Credits, the NYC Industrial Development Loan Fund, City Capital funds etc.

SUPPLEMENTARY INFORMATION

RECENT PLANNING AWARDS

WRT has won over 400 awards since 1965, including several recent Choice Neighborhood planning projects.



2024

AWARDS

Hoboken Housing Authority Redevelopment Plan

HOBOKEN, NJ

» NJ Future Smart Growth Award

2023

AWARDS

Kirkpatrick Heights/Greenwood Site Master Plan

TULSA, OK

» APA National, Award for Advancing Diversity and Social Change

2022

AWARDS

Newark360 Master Plan

NEWARK, NJ

» NJ APA Outstanding Plan Award

NC Five (Fifth Phase of Implementation for North Central Philadelphia Choice Neighborhood Plan)

PHILADELPHIA, PA

» AIA PA Merit Award

North Trenton/Battle Monument Choice Neighborhood Plan

TRENTON, NJ

» NJ Future Smart Growth Award

2021

AWARDS

Our Parks, Our Future: Austin Parks Long-Range Plan

AUSTIN, TX

» APA National Planning Awards - Award for Planning Excellence

West Side Pride: West Scranton Neighborhood Plan

SCRANTON, PA

» APA PA Award for Plans

2020

AWARDS

Blossom at Bartram Choice Neighborhood Plan

PHILADELPHIA, PA

» APA Pennsylvania Chapter - Best Plan Award

Denbigh-Warwick Area Plan

NEWPORT NEWS, VA

» APA Virginia Chapter - Commonwealth Plan of the Year

2018

AWARDS

Meriden 2020

MERIDEN, CT

» APA Award for Excellence in Sustainability, Sustainable Urban Design Plan or Development

AIA Pennsylvania Architecture Firm of the Year Award (2021)

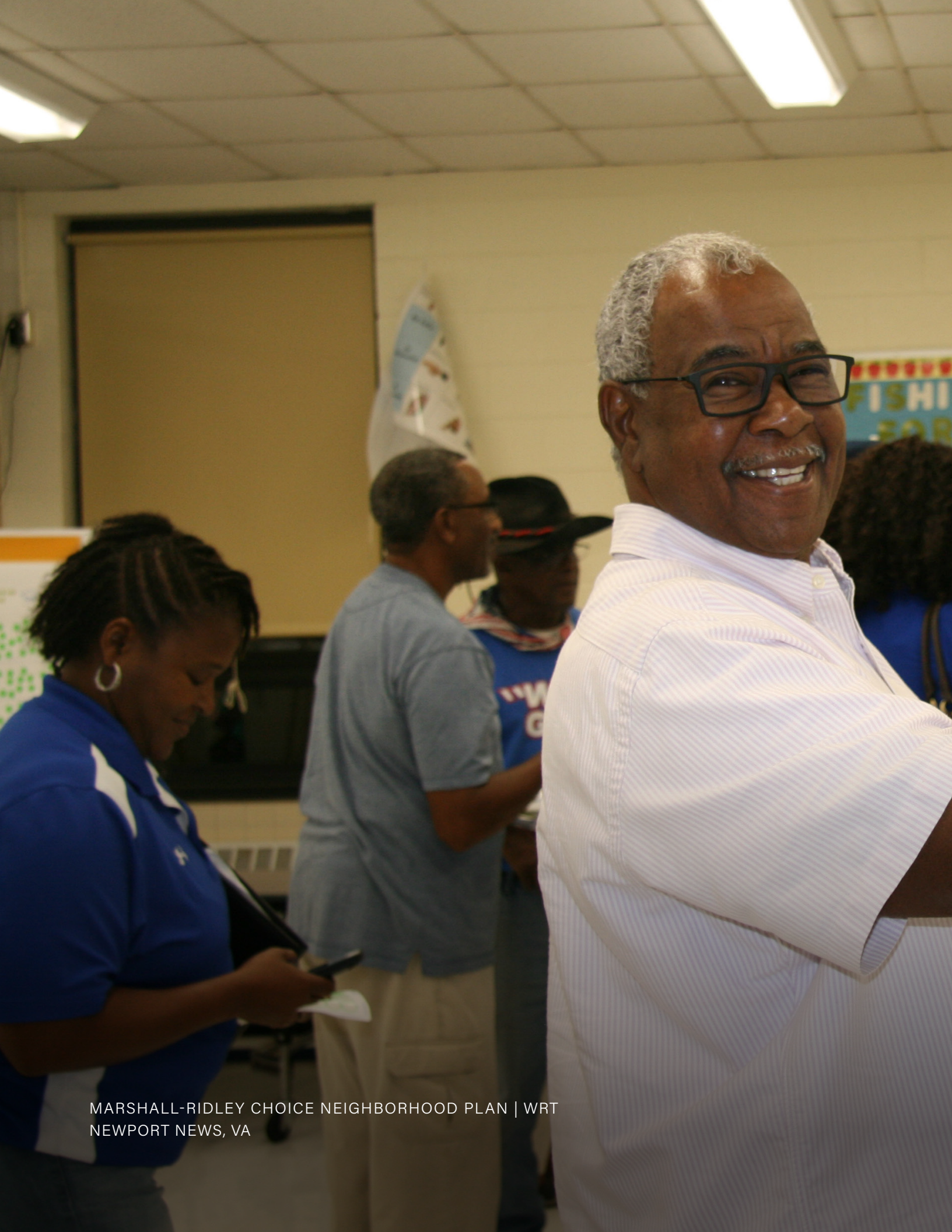
Every year, the AIA Pennsylvania Architecture Firm of the Year Award recognizes one firm whose passion and practice has produced notable architecture for at least a decade. Deserving firms will have demonstrated excellence in design and leadership through any combination of the following criteria: the breadth and/or depth of their portfolio, a healthy firm culture, influence on the practice of architecture, exemplary outcomes for clients and/or society.

Since its beginnings in 1963, WRT has remained a pioneering firm of people who want to change the world for the better. The firm was one of the first to tackle issues of ecological, social, and economic resiliency with large scale interventions and planning—something it remains committed to today.

And when many firms were in the context of the moment, WRT's founders established methods and principles that have become commonplace: an interdisciplinary approach that requires collaboration from team members across disciplines, an emphasis on an ethos rather than a signature aesthetic to unify the work, and a commitment to sustainable planning and design.



To ensure that the issues and concerns most important to clients are effectively addressed, WRT guides the development of projects through a process that depends upon a sound understanding of community values and aspirations, obtained through early and continuous citizen involvement, a national perspective on place-based design, and a commitment to understanding the site-specific opportunities and challenges as a basis for strategic decision-making. WRT's pioneering spirit infuses its practice to this day, transforming introspection into inventive new ways of serving its communities while remaining true to the firm's collective values.



MARSHALL-RIDLEY CHOICE NEIGHBORHOOD PLAN | WRT
NEWPORT NEWS, VA

B5

**FIRM/TEAM
EXPERIENCE**



PROJECT SPREADSHEET (RFP ITEM B5.1)

PROJECT/LOCATION	TEAM MEMBERS	SCOPE OF PROJECT	UNITS	FUNDING SOURCES
BEDFORD-MIDDLE HILL CHOICE NEIGHBORHOOD PLAN PITTSBURGH, PA	Woo Kim, Beatriz Vergara Aller	Planning Coordination Community Engagement Urban Design Master Planning Grant Writing Architecture	830 Housing Units Mixed-Income	Choice Planning Grant + Local Funds
MARSHALL-RIDLEY CHOICE NEIGHBORHOOD PLAN NEWPORT NEWS, VA	Woo Kim	Planning Coordination Community Engagement Urban Design Landscape Architecture Master Planning Grant Writing Architecture	520 Housing Units Mixed-Income	Choice Planning Grant + Local Funds
"BLOSSOM AT BARTRAM" CHOICE NEIGHBORHOOD PLAN PHILADELPHIA, PA	Woo Kim, Paul McGehee	Planning Coordination Master Planning Urban Design Landscape Architecture Community Engagement Grant Writing Architecture	700 Housing Units Mixed-Income	Choice Planning Grant + Local Funds
SHARSWOOD-BLUMBERG CHOICE NEIGHBORHOOD PLAN PHILADELPHIA, PA	Woo Kim, Paul McGehee	Planning Coordination Community Engagement Urban Design Architecture Master Planning	1,200 Housing Units Mixed-Income	Choice Planning Grant + Local Funds
NORTH TRENTON / BATTLE MONUMENT CHOICE NEIGHBORHOOD PLAN TRENTON, NJ	Woo Kim, Beatriz Vergara Aller	Planning Coordination Community Engagement Urban Design Master Planning Grant Writing	567 Housing Units Mixed-Income	Choice Planning Grant + Local Funds
MERIDEN CHOICE NEIGHBORHOOD PLAN MERIDEN, CT	Woo Kim	Planning Coordination Community Engagement TOD Planning Architecture	600 Housing Units Mixed-Income	Choice Planning Grant + Local Funds
NORTH CENTRAL PHILADELPHIA CHOICE NEIGHBORHOOD PLAN PHILADELPHIA, PA	Woo Kim	Community Engagement Landscape Architecture Architecture	450 Housing Units Mixed-Income	Choice Planning Grant + Local Funds
CHOUTEAU COURTS-PASEO GATEWAY CHOICE NEIGHBORHOOD PLAN KANSAS CITY, MO	Woo Kim	Planning Coordination Community Engagement Urban Design Housing + Neighborhood Planning	360 Housing Units Mixed-Income	Choice Planning Grant + Local Funds
THIRD WARD/CUNEY HOMES CHOICE NEIGHBORHOOD PLAN HOUSTON, TX	Woo Kim, Beatriz Vergara Aller, Paul McGehee	Planning Coordination Community Engagement Urban Design Housing + Neighborhood Planning	1,115 Housing Units Mixed-Income	Choice Planning Grant + Local Funds
ALLEGHENY DWELLINGS CHOICE NEIGHBORHOOD PLAN PITTSBURGH, PA	Woo Kim	Planning Coordination Community Engagement Urban Design Housing + Neighborhood Planning	344 Housing Units Mixed-Income	Choice Planning Grant + Local Funds

TOTAL COST / PLANNING GRANT AMOUNT	CHOICE IMPLEMENTATION GRANT AMOUNT	PUBLIC AND PRIVATE PARTNERS	PROJECT CONTACT
\$500,000 / \$500,000	\$50M Choice Implementation Grant	The Housing Authority of the City of Pittsburgh City of Pittsburgh TREK Development Group Residents of Bedford-Dwellings and the Hill District	JW Kim Director of Planning & Development Housing Authority of the City of Pittsburgh (T) 412.643.2732 (E) jungwook.kim@hacp.org
\$5M / \$500,000	\$30M Choice Implementation Grant	Newport News Redevelopment & Housing Authority City of Newport News Residents of Ridley Place and Newport News Hampton Roads Community Action Program Newport News Public Schools Newport News Shipyard	Karen Wilds Executive Director, Newport News Redevelopment and Housing Authority (T) 757.928.2662 (E) kwilds@nnrha.org
\$1.35M / \$1.3M	\$50M Choice Implementation Grant	Philadelphia Housing Authority City of Philadelphia Residents of Bartram Village Project Steering Committee	Andrew Meloney, AICP Director, Choice Neighborhoods Program Philadelphia Housing Authority (C) 215.833.0844 (preferred) (T) 215.684.3954 (E) andrew.meloney@pha.phila.gov
\$2M / \$300,000	\$30M Choice Implementation Grant	Philadelphia Housing Authority City of Philadelphia The Enterprise Center CDC Habitat for Humanity Residents of Norman Blumberg Apartments Residents of the Sharswood neighborhood	Andrew Meloney, AICP Director, Choice Neighborhoods Program Philadelphia Housing Authority (C) 215.833.0844 (preferred) (T) 215.684.3954 (E) andrew.meloney@pha.phila.gov
\$400,000 / \$1.3M	\$15.6M Choice Implementation Grant	Trenton Housing Authority City of Trenton Residents of Donnelly Homes + Downtown Trenton Trenton Business Owners Capitol Health	Jelani B. Garrett Executive Director, Trenton Housing Authority (T) 609.278.5015 (E) jgarrett@tha-nj.org
\$2M / \$500,000		Meriden Housing Authority City of Meriden and Partners Connecticut Housing Finance Agency Downtown Meriden Residents/Community	Charlie Adams Regional Vice President Pennrose Properties (T) 857.415.4650 (E) cadams@pennrose.com
\$3M	\$30M Choice Implementation Grant	Philadelphia Housing Authority City of Philadelphia Asociación de Puertorriqueños en Marcha Jonathan Rose Companies Residents of Norris Homes	Andrew Meloney, AICP Director, Choice Neighborhoods Program Philadelphia Housing Authority (C) 215.833.0844 (preferred) (T) 215.684.3954 (E) andrew.meloney@pha.phila.gov
\$400,000 / \$300,000	\$30M Choice Implementation Grant	HAKC, Chouteau Courts Residents, Greater Kansas City LISC, Gateway Advisory Council, Mattie Rhodes Center, KC Studio, Start at Zero, Happy Bottoms, Global FC, Jewish Vocational Services, Tech Access-Kansas City Public Library	John Monroe Director, Planning + Development HAKC (T) 816.968.4288 (E) jmonroe@hacp.org
\$568,000 / \$500,000	\$50M Choice Implementation Grant	Houston Housing Authority City of Houston Cuney Homes Resident Council Sankofa Research Institute	David Northern CEO Houston Housing Authority (T) 713.260.0501 (E) DNorthern@housingforhouston.com
\$328,100 / \$450,000		The Housing Authority of the City of Pittsburgh City of Pittsburgh TREK Development Group Fineview Citizens Council	JW Kim Director of Planning & Development Housing Authority of the City of Pittsburgh (T) 412.643.2732 (E) jungwook.kim@hacp.org



WRT led a community-authored Choice plan, partnering with Meriden Children's Zone as the Choice People Lead.

Meriden Choice Neighborhood Plan + Implementation of Meriden Commons

Meriden, CT

The transformation of Downtown Meriden is a story about social and environmental resilience planned by a perseverant community as it envisions a sustainable future for the next generation. Over two decades of incremental yet diligent investments made by the City and its stakeholders have paid off. As a result of a HUD Choice Neighborhoods Transformation Plan led by WRT, a vacant downtown once prone to persistent flooding and resultant disinvestment is today a verdant park, surrounded by 14 acres of new mixed-income, green residential developments and a newly constructed intermodal transit station which will be an express stop on the New Haven-Hartford-Springfield Rail Line.

WRT first engaged critical stakeholders and residents in the community to develop a Transformation Plan for downtown Meriden. WRT's housing plan, informed by meaningful community engagement, called for the development of over 600 mixed-income units in the city center. During the planning process, WRT successfully mediated 2 opposing forces in this community. One group of citizens pushed for deeply subsidized units in the downtown to serve the urgent need for quality affordable housing. The other group envisioned a downtown populated by higher income residents. WRT reconciled both parties by demonstrating a

mixed-income scenario, with proven models and a better understanding of housing finance and strategy.

Ultimately, the housing plan's primary goal was to incrementally increase the income levels of downtown residents without displacing the existing population. To accomplish this, WRT recommended the initial four phases to be funded by the Low-Income Housing Tax Credit (LIHTC) program administered by the Connecticut Housing Finance Agency. Once the market was "primed," WRT recommended developing market rate units to be privately financed. To date, all LIHTC phases have been fully funded and the last affordable phase is scheduled to be fully leased by the end of 2020. Pre-development for luxury rental units are underway. In addition to planning services, WRT also served as architects of both affordable and market rate phases.

Meriden Commons, the first housing phase, is a 75-unit mixed-income, mixed-use project, located on the corner of State and Mill Streets next to the newly implemented Meriden Green. The transit-oriented project provides needed housing density within the downtown and 5,000 square feet of ground-floor retail along a major commercial corridor. It is walkable to the nearby Amtrak station and local bus routes and was designed to overlook the new Meriden Green.

Meriden Commons Phase Two, is designed to meet Passive House standards, one of the most rigorous energy-based standards in the design and construction industry. All three buildings will obtain Passive House certification. The individual units in the low-rise buildings will also meet Energy Star for homes certification, achieving a HERS index in the range of 35 to 40, performing significantly better due to the Passive House design.





WRT remained a steadfast partner to the Buffalo Municipal Housing Authority for over a decade, resulting in a groundbreaking ceremony with Governor Hochul in 2024.

Perry Choice Neighborhood

Buffalo, NY

WRT assisted the Buffalo Municipal Housing Authority and the University at Buffalo Department Of Urban Studies in developing a Transformation Plan for the Perry Choice Neighborhood. Serving as both planners and architects, WRT evaluated potential replacement housing sites, developed a green infrastructure approach for the larger neighborhood, and provided the architectural and landscape design services for an ultimate program of 900-plus housing units and related open space amenities.

The Perry Choice Neighborhood Planning grant (PCN) produced a plan that transforms the PCN into a viable and sustainable mixed-income neighborhood that functions as a platform which enables residents to become economically secure and self-sufficient, to realize their full potential and to develop the critical consciousness and capacity that empowers them to guide the development of the community over time. To realize this outcome, the planning initiative is viewed through the lens of neighborhood, housing, and people that inform all aspects of the planning process. WRT also played a major role in engaging the community through the planning process. The transformation plan will feature well-designed affordable and market rate housing, linkages to quality public schools and comprehensive support services that will foster opportunities for all residents.



The neighborhood transformation plan will build upon the community's strong cultural and historical bonds and link into the surrounding context including mixed-use development of the city's Cobblestone District, complete with entertainment venues and a casino.

Commodore Perry Homes Phase 1 is a community-driven development that when complete will provide over 400 units and will transform the City of Buffalo. This development, which recently broke ground, demonstrates New York State Homes & Community Renewal commitment to addressing the affordable housing crisis affecting neighborhoods across state. Future phases of development are slated for funding.





Hagerstown Choice Neighborhood

Hagerstown, MD

WRT advised the Hagerstown client group to push the boundaries of the Choice program by targeting 3 noncontiguous public housing sites and an asset-rich downtown as subject of the grant.

The Hagerstown Choice Neighborhood boundary encompasses the downtown area bisecting multiple Hagerstown Housing Authority sites. Two of these sites (Parkside Homes and Douglass Court) border the Historic Jonathan Street District and the third site Frederick Manor borders Hagerstown's largest city-owned park. A cultural trail that emanates from the downtown area through the heart of Hagerstown's Choice neighborhood is one of the most well known and utilized community amenities. The boundaries and amenities of the Hagerstown Choice neighborhood parallels those within and in close proximity to the Historic Northside neighborhood of Poughkeepsie, NY.

In our role as Planning Coordinator on the Hagerstown Choice Neighborhood project, our work is rooted in developing a holistic understanding of neighborhood context. We took time to develop an understanding of Hagerstown's history and place in its region, the current market conditions that surround the Choice neighborhood and the city's past and current planning efforts. Most importantly, we identify community needs, opportunities and priorities, through deep community engagement. All of these elements allow us to support the City of Hagerstown and the Hagerstown Housing Authority in building an actionable plan for the future of residents within the Hagerstown Choice Neighborhood.

WRT's approach to the Hagerstown Choice Neighborhood reflects our belief in the strength of a participatory planning process. As part of our community-powered approach in Hagerstown, we actively convened over 50 community partners to engage in the plan development process. This collaboration allowed WRT to surpass the 65% threshold set by HUD around needs assessment survey completion at each of the three Hagerstown Housing Authority sites.

Together with local partners WRT continues to execute a series of engagement events, workshops, and outreach activities. To date, 450 Hagerstown community members have engaged in-person, adding invaluable context and input on plan priorities.

This intentional investment in the voices, needs, and aspirations of the residents ensures a solid foundation for the People, Housing and Neighborhood elements of our Choice Plans.



Resident Meetings @ Housing Sites, February 2024 (WRT)



We believe **our successes** are best demonstrated by the long **professional relationships** we've maintained with our clients. Often, these relationships start with a **transformative** master plan and continue with the successful **implementation** of several projects.

We are very confident that our client references will speak highly not just of our completed projects but more importantly, the ways in which we engage them as partners in the process, listen to their needs, and respect their budgetary and other limitations while creatively responding to the unique challenges each project presents.

PROJECT REFERENCES

- +** **MERIDEN CHOICE NEIGHBORHOOD**
MERIDEN, CT

Charlie Adams
Regional Vice President
Pennrose Properties
(T) 857.415.4650
(E) cadams@pennrose.com
- +** **PERRY CHOICE NEIGHBORHOOD PLAN**
BUFFALO, NY

Modesto Candelario
Assistant Executive Director
Buffalo Municipal Housing Authority
(T) 716.855.6711 extension 253
(E) mcandelario@bmha.ci.buffalo.ny
- +** **HAGERSTOWN CHOICE NEIGHBORHOOD PLAN**
HAGERSTOWN, MD

Sean M. Griffith
Executive Director
Hagerstown Housing Authority
(T) 301.733.6911 extension 126
(E) sgriffith@hagerstownha.com



Wallace Roberts & Todd, LLC

123 S. Broad Street, Suite 1450
Philadelphia, PA 19109
wkim@wrtdesign.com
215.430.5060