City of Poughkeepsie
Planning Board
Meeting Agenda

Common Council Chambers
Tuesday, March 21, 2023
6:00 PM

I. CALL TO ORDER

II. BOARD BUSINESS

1. Selection of Vice-Chair

III. APPROVAL OF MEETING MINUTES

1. Approval of February 22, 2023 Minutes

IV. SITE PLANS/SPECIAL PERMITS/SUBDIVISIONS

1. 117 N. HAMILTON STREET
REVIEW POSTPONED TO APRIL 18, 2023 MEETING AT APPLICANT'S REQUEST

2. SOUTH AVENUE LOT #937583: MULTI-FAMILY RESIDENTIAL BUILDING
Application for Site Plan Review for property at South Avenue lot of record #6061-52-937583 for construction of 87-unit, 5-story mid-rise multifamily residential development with 60 underground and 55 surface-level parking spaces. South Avenue Real Estate Associates LLC Owner/Applicant: Michael Abuladez, CEO, Argo Development; Consultant: Christopher Lapine, P.E., LEED AP, LaBella Associates; Grid #6061-52-937583; Zoning District: R-D Research and Development District; File #2022-055

CITY OF POUGHKEEPSIE PLANNING BOARD

DRAFT Meeting Minutes
Common Council Chambers
Tuesday, February 22, 2023 6:00 PM

ATTENDANCE	EXCUSED	STAFF
Anne Saylor	Marge Smith	Natalie Quinn, Development Director
Rosaura Andújar-McNeil	Nick DeLucca	Lori Garcia, Board Administrative Assistant
Robert Mallory		
Sean O'Donnell		
Paul Ackerman		
Brian Veltre		

I. CALL TO ORDER 6:06 pm

II. APPROVAL OF MEETING MINUTES

Approval of January 18, 2023 Minutes
Motion: Paul Ackerman
Second: Sean O'Donnell

III. PUBLIC HEARINGS

1. 75 N WATER STREET: MIDHUDSON DISCOVERY MUSEUM -
Sign review regarding freestanding monument sign with message board. Owner/Applicant: Mid-Hudson Discovery Museum; Consultant: GNS Sign Group; Grid #6062-66-738231; Zoning District: Waterfront District (W); File #PB2022-040

Presenting: Nancy Forrest, GNS Sign Group
Jeff Sasson, Executive Director Mid-Hudson Discovery Museum

Anne reviewed the recommendations by:

- Waterfront Advisory Committee
  - Action furthers polices 19 and 20 in the LWRP
  - In regards to LWRP policy 23
    - Limit the hold time
    - Match the monument brick to the building
    - Use native landscaping around the sign and in planting beds
- County Comments
  - County did not recommend that the board approve the sign
    - Concerned about increased impacts on surrounding community
    - This type of sign can be distracting
    - The shown image looks to be a video (although applicant confirmed that was not the intent)

- Sign is both Freestanding and an electronic message board therefore both sections of the sign code applies regarding colors and word count

Nancy Forrest replied to these comments:

- Based on many studies done, these signs are not distracting. Presented a study by the DOT regarding digital billboards. She did not have reference to other specific studies.
- The display picture is the standard illustration from the manufacturer, not a representation of what will be displayed by the museum.
- She understands the application will need to go to the ZBA for variances for the sign colors, word count and display change times.
- The changes to the dimensions of the sign and landscaping were summarized.
- Referenced the study done for the Museum by the manufacturer regarding foot candles showing there are less than 2 foot candles at the property line.

Rosaura asked about the foot candles that would reach the piano factory across the street. Nancy stated that the sign is perpendicular to the piano factory and the LED lights would not reach there as the light emitted will straight forward from the sign and not arcing.

Jeff pointed out that the public expressed desire to have more lighting in the area and that there are large, bright, lights already at the piano factory across the street.

A motion was made to open the public hearing
Motion: Rosaura Andújar-McNeil
Second: Sean O'Donnell
Carried: 6:0:0

Judy Fallon, employee at 82 N Water Street
Nicole Rios, employee at 82 N Water Street

A motion was made to close the public hearing
Motion: Rosaura Andújar-McNeil
Second: Sean O'Donnell
Carried: 6:0:0

The applicant was instructed to present the application to the ZBA to seek variances and return to the planning board once that is received. The applicant was also reminded that, because of the county's recommendations, the applicant will need a majority voe plus one to receive an approval from the Planning Board.

IV. SITE PLANS

1. 135 MAIN STREET: MULTIFAMILY RESIDENTIAL SUBDIVISION

Applications for Site Plan Review and Subdivision for subdivision of the property at 135 Main Street into two lots of record and construction of a new building containing 72 dwelling units on the new lot with the original lot containing an existing multiple dwelling with 119 units, including reconfiguration of off-street parking and open space. Owner: Omni New York; Applicant: Tinkleman Architecture; Consultant: Ken Casamento/LRC Group; Grid #6062-76-911183; Zoning District: Urban Density Residence (R-6) District; File #2021-037 and 2021-038

Presenting: Steve Tinkleman, Tinkleman Architecture

Robert Turner, Tinkleman Architecture

The improvements and changes were summarized:

- Courtyard and its activation.
- Directional path was added to the planting beds across the parking lot.
- Landscaping and planters were added to the front of the building.
- How the mechanical units on the roof are hidden.
- The glass by the entrance and courtyard that allow for transparency.
- Walkway systems from North Perry to the porte cochere improved.
- Storm water system connections explained.
- Updated utility report was presented.

Rosaura expressed concerns about the property management of this building. It was confirmed that Hudson River housing will not be doing the long term maintenance. Omni and their management partner will be handling that.

A motion was made for approval:

WHEREAS, the Planning Board has received applications for the property located at 135 Main Street from Omni New York, LLC, for Site Plan and two-lot Subdivision approval to permit the construction of a new multifamily building, Admiral Halsey II (the "Project"), consisting of 72 income restricted senior dwelling units on a new lot with the original lot containing the existing 13-story Admiral Halsey I multifamily building which consists of 119 income restricted senior dwelling units, and includes reconfigured off-street parking and usable open space which is shared between the two lots and designed to operate as a single-integrated development; and,

WHEREAS, the Project is located in the Urban Density Residence Zoning District (R-6), which district is intended to provide areas for very intense residential development; and,

WHEREAS, the Applications were first presented to the City of Poughkeepsie Planning Board September 21, 2021; and

WHEREAS, the applications were accompanied by the Site Plan prepared by Rodney E. Morrison, LPE, LRC Group, last revised February 3, 2023, and Subdivision Plat prepared by Rodney E. Morrison, LPE, LRC Group, last revised February 3, 2023 and supplemental materials as fully set forth in the attached "Application Materials and Review History"; and,

WHEREAS, the Applications are an Unlisted Action under the State Environmental Quality Review Act ("SEQRA"); and,

WHEREAS, the Planning Board declared its intent to serve as SEQRA Lead Agency and conduct a coordinated review on September 21, 2021; and,

WHEREAS, the Planning Board circulated the Full Environmental Assessment Form and application and plans to all interested and involved agencies; and,

WHEREAS, the Zoning Board of Appeals, at its August 9, 2022 meeting, consented to the Planning Board serving as lead agency for the purposes of SEQRA; and,

WHEREAS, at the September 20, 2022 meeting the Planning Board as Lead Agency of the coordinated SEQRA review adopted a Negative Declaration in accordance with Article 8 of the Environmental Conservation Law and 6 NYCRR 617 and City Code §§ 19-6.4 and 19-4.17; and,

WHEREAS, the Applicant submitted to the New York State Historic Preservation Office (SHPO) and receive a letter stating "No Adverse Effect" dated November 17, 2020 and, after resubmitting changes, again on October 12, 2022; and,

WHEREAS, at the December 22, 2022 meeting of the Zoning Board of Appeals the requested variances were unanimously approved after duly noticed public hearings were held on February 9, 2022, March 8, 2022, May 10, 2022, August 9, 2022, and November 8, 2022; and,

WHEREAS, the Planning Board opened a public hearing on this application on March 15, 2022, and, as the City returned to in-person meetings, re-noticed and re-opened the hearing for the first time on May 17, 2022 and asked the applicant to re-notice the hearing for the second time for the Planning Board's September 20, 2022 meeting due to the length of time between the May and September hearing, which was continued on November 15, 2022, December 20, 2022 and January 18, 2023 when the hearing was closed; and

WHEREAS, the Applicant has developed a robust record in support of the project as set forth in the attached "Application Materials and Review History" incorporated herein by reference, taking into consideration comments of the Planning Board, the Zoning Board of Appeals and the public.

NOW THEREFORE BE IT FURTHER RESOLVED that the City of Poughkeepsie Planning Board hereby grants the following approvals:

1. Final Subdivision approval to 135 Main Street for the creation two lots of record as shown on the subdivision plat dated 6/17/2021, with last revision date of 2/3/2023; and

2. Site Plan approval as shown on the plan dated 11/29/2022, with last revision date of 2/3/2023, for the construction of a new building, Admiral Halsey II, containing 72 dwelling units and 33 off street parking spaces on the new lot as detailed in the above referenced application, and

3. These approvals are subject to the following conditions:

    - Section 19-6.1 of the Zoning Ordinance provides that if the cost of improvements is anticipated to be in excess of $30,000, a performance bond will be established to cover the cost of improvements, based on advice from the City Engineer: following the recommendations of the Engineering Department, a performance bond will be established.

- Upon completion of the project, prior to the issuance of the final certificate of occupancy, an as-built site plan set shall be submitted to the Planning Department for certification of compliance with Planning Board approval
- Comments 1-6 noted on a letter from the engineering department dated 2/7/2023 shall be addressed to the satisfaction of that department.

Motion to Approve and receive in print.
Motion: Robert Mallory
Second: Sean O'Donnell

Carried:	6	0	0
	Aye	Nay	Abstention

2. SOUTH AVENUE LOT #937583: MULTIFAMILY RESIDENTIAL BUILDING

Application for Site Plan Review for property at South Avenue lot of record #6061-52-937583 for construction of 87-unit, 5-story mid-rise multifamily residential development with 60 underground and 84 surface-level parking spaces. South Avenue Real Estate Associates LLC Owner/Applicant: Michael Abuladez, CEO, Argo Development; Consultant: Christopher Lapine, P.E., LEED AP, LaBella Associates; Grid #6061-52-937583; Zoning District: R-D Research and Development District; File #2022-055

Presenting: Christopher Levine, LaBella Associates
Michael Arbogast, Applicant
Michael McCormack, McCormack and VanVoorhis Architects
Kathy Tether, McCormack and VanVoorhis Architects

The project was summarized and some of the changes pointed out that were made since last meeting:

- Parking was decreased to 155 spaces which allowed for better access for fire apparatus, increased landscaping space and additional open space. It will require the application to go before the ZBA to ask for a variance
- There was landscaping added but Michael expressed the desire to plant more trees along the South Ave. frontage of the property and was hoping to come to some sort of compromise with the Fire Department regarding that area.
- A "pocket park" was added to the northwestern corner with trees and benches.
- It was acknowledged that the lighting fixtures on the building needed to be more in line with the architecture of the building.
- The architecture is described as "sleek and chic". It has a lot of window mass letting ia lot of light into the units.
- The entrance on South Ave. was made to be a stronger presence:
  - The stairs were widened to include a sitting area on one side
  - There is landscaping on either side of the entrance
- The "City of Poughkeepsie" was tied into the architecture by using the pattern of lattice work at the top of the mid-Hudson bridge in the railings for the balconies
- The roof top has an area where people can go. There is screening provided for any mechanical equipment there. The aim is that the mechanicals will not be seen from the street.

Chris Kroner, architectural consultant from MASS Design, gave a summary of things discussed during review meeting and his thoughts on some of the changes to the architectural design:

- Still concerned with the lack of trees lining South Ave. Anne mentioned later that they were more than aesthetic, they can also add to safety causing drivers to drive a bit slower.
- The plans regarding the “pocket park" seem to be for passive activities. He was wondering if there was an intent to have any active participation items such as gardening.

Rosaura pointed out the discrepancy between the NRI and the DC mapper regarding the existence of wetlands. Chris explained that the wet areas were notice and that they are depressions on the site from past soil. The soils in these areas are sandy gravel. They percolate very well and are not conducive to standing water.

Anne requested a view of the proposed property from Rt 9.

A better understanding of the lighting for the balconies and night rendering was also requested.

Details of the South Ave. facing side of the building and the balconies were discussed with the board. It was recommended to remove the plantings on the balconies. It portrays a false sense of landscaping. .

The Board decided that the project should have a public hearing but it is too soon to do that. The applicant must appear before the ZBA for parking variances and a coordinated review for the purposes of SEQRA will be done.

3. 117 NORTH HAMILTON STREET
REVIEW POSTPONED TO MARCH AT APPLICANT’S REQUEST

4. 45 READE PLACE: SITE PLAN AMENDMENT
Application for site plan amendment relative to the wayfinding signage on the Vassar Brothers Hospital campus 45 Reade Place and 1 Columbia Street; Owner: Vassar Brothers Hospital; Applicant: Michael Zolnik; Consultant: Tracey Diehl, Expedite the Diehl; Grid #6061-43-843721 and #6061-35-84-11783; Hospital-Medical (H-M) District; File# 2022-053

Speaker: Mike Zelnick, Vassar Brothers Medical Center and NuVance Health

Michael pointed out some of the changes to the new plan set:

- Added a table of contents with page numbers to the title page.
- Labeled the signs that had already been approved on that page instead of on the title page.
- Adjusted the location of the “Ambulance Only” sign at the emergency department entrance.
- At the entrance of the drive to the Emergency department, “ambulance only passed this point” and a Do Not Enter symbol were added to the sign.
- Color coded building identifiers were added.
- The Reade entrance sign was added back into the book. The sign is existing but the face will be changed.

- There are two existing signs at the end of Columbia St. that were also added back in and will only have the face changed.
- One new freestanding sign was added by the old hospital entrance.

There was a motion to approve:

WHEREAS, the Planning Board has received an application for site plan amendment relative to the wayfinding signage on the Vassar Brothers Hospital Campus at 45 Reade Place and 1 Columbia Street; and,

WHEREAS, the applicant submitted a short EAF (Environmental Assessment Form) completed by Tracey Diehl on January 26, 2023, which adequately describes the proposed action; and

WHEREAS, this application for site plan is considered to be a Type II action under SEQRA; and,

WHEREAS, the action is more fully detailed on drawings revised February 15, 2023 prepared by Stratus Unlimited; and,

NOW THERFORE BE IT FURTHER RESOLVED that the Board grant site plan approval relative to the proposed amendment to wayfinding signage on the Vassar Brothers Hospital Campus at 45 Reade Place and 1 Columbia Street, with the following condition:

• Comments of Dutchess County Planning shall be addressed to the satisfaction of the city planning staff.

Motion: Anne Saylor
Second: Sean O'Donnell
Carried: 6:0:0

V. ADJOURN THE PLANNING BOARD TO MARCH 21, 2023

Motion: Paul Ackerman
Second: Rosaura Andújar-McNeil
Carried: 6:0:0

APPLICATION TO THE PLANNING BOARD
CITY OF POUGHKEEPSIE, NEW YORK

Application for Site Plan, Special Permit & Facade Approval

OFFICE USE ONLY

CODE: PLSF

ID #_____

FEE: _____
Total, from:
$500, plus
$_____
($150 per 1000 square feet of floor area), plus
$_____
($35 per number of required parking spaces), plus
$_____
($500 for special permit, if applicable)

I. PROPERTY ADDRESS: South Avenue, City of Poughkeepsie, Dutchess Co., New York; Tax Parcel ID 6061-52-937583

II. PROPERTY OWNER: South Ave Real Est Assoc LLC
ADDRESS: 510 Haight Avenue,
Poughkeepsie, NY 12603

New York, 12603 (state and zip code)

PHONE NUMBER: 914-494-2610 (include area code)

III. NAME OF APPLICANT: ARGO Development (Contact: Mr. Michael Abuladze, CEO)

ADDRESS: 95 Chestnut Ridge Road,
Montvale, NJ 07645

New Jersey, 07045 (state and zip code)

PHONE NUMBER: 914-494-2610 (include area code)

EMAIL ADDRESS: mike@argodev.com

(If applicant is NOT the owner, proof of owner's consent to the application MUST be provided.)

IV. CONSULTANT: Christopher Lapine, P.E., LEED AP

ADDRESS: 21 Fox Street,
Poughkeepsie, NY 12601

New York, 12601 (state and zip code)

PHONE NUMBER: 845-486-1478 (include area code)

V. PROPOSED USE or FAÇADE CHANGE (Summarize proposed use or uses):

87-unit, 5-story mid-rise multifamily residential development with underground and surface-level parking.

VI. ZONING DISTRICT: R-D, Research and Development District

(Proceed to XVII for special permit & façade approval only)

PROJECT INFORMATION

New construction: __X__(yes)_____ (no)

Change of use:_____ (yes) __X__ (no)

Expansion/addition:_____ (yes) __X__ (no)

Alteration:_____ (yes) __X__ (no)

Cost of Construction: $__9.3 million_____

LOT AND BULK INFORMATION:

Lot area: _____2.76_____ (acres) _____~120,226_____ (square feet)

Building Footprint: _____22,640_____ (proposed square feet for new construction)

_____NA_____ (existing square feet for change of use/expansion)

_____NA_____ (additional proposed square feet for expansion)

_____22,640_____ (total building footprint, square feet)

Lot Coverage: _____~19%_____ (percentage, building coverage only)

Gross Floor Area: _____113,200_____ (proposed square feet for new construction)

_____NA_____ (existing square feet for change of use/expansion)

_____NA_____ (additional proposed square feet for expansion)

_____113,200_____ (total gross floor area, square feet)

Building Height: 5 stories of MF residential units over one level of underground parking. (stories) _____70_____ (feet)

Floor Area Ratio: _____0.94_____ (ratio of gross floor area divided by lot area)

VIII. PROJECT PARKING INFORMATION

A) Number of Off-Street Parking Spaces required: _____143.5_____

B) Number of Off-Street Parking Spaces provided: _____144_____

C) Waiver Requested: _____ (Yes) _____X_____ (No)

Is municipal parking available within 600 feet? _____ (Yes) __X__ (No)

If yes, name all such municipal facilities: NA

(If a waiver is requested based on proximity to municipal facilities, a written request for such waiver, addressed to the City Planning Staff and the Chairman of the Planning Board, must be submitted with the application.)

If a private parking facility is to be utilized, is such facility within 600 feet?

_____ (Yes) __X__ (No)

If yes, provide the address of the facility, name of the property owner, number of spaces in the lot, number of spaces available for lease, and length of lease. Attach copy of lease. Additional information may be required by the Planning Board): NA

IX. RESIDENTIAL PROPOSALS

A) Type of Development: Multifamily residential development with underground and surface-level parking.
(Townhouse, condominium, multiple residence rental, etc.)

B) Unit Breakdown:

Number of efficiency or "studio" units: 0

Number of one (1) bedroom units: 87

Number of two (2) bedroom unit's 0

Number with three or more bedrooms: 0

Total number of units: 87

C) Is funding public? ____ Yes __X__ No
If yes, describe funding source: ARGO Development

NA

X. OFFICE PROPOSALS (____ Medical/Dental ____ Professional ____ Business)

A) Number of Employees: _____
B) Number of doctors/dentists/medical practitioners: _____
C) Days/Hours of Operation: _____

NA **XI. SERVICE BUSINESS PROPOSALS**

A) Specify Business: _____
(e.g., laundromat, drycleaner, beauty parlor, travel agency, banks)

B) Number of Employees: _____

C) Number of Washing Machines (for laundromat): _____

D) Days/Hours of Operation: _____

NA **XII. MERCANTILE PROPOSALS** (Retail _____ Wholesale _____)

A) Type of Mercantile (specify): _____

B) Number of Employees: _____

C) Days/Hours of Operation: _____

NA **XIII. STANDARD RESTAURANT/FAST FOOD RESTAURANT/COFFEE SHOP/DONUT SHOP/NIGHTCLUB/DISCOTHEQUE/BAR PROPOSALS**

A) Specify Use: _____

B) Number of seats (excluding bar stools and outdoor seating):_____

C) Meals served (i.e., breakfast, lunch, dinner): _____

D) Type of Menu: _____

E) Days/Hours of Operation: _____

F) Entertainment (live and/or recorded):_____

G) Will the restaurant contain a bar/lounge?: _____ Yes _____ No

H) If yes, how many seats at the bar? _____

I) Is a drive-through window proposed? _____

J) Is a walk-up window proposed? _____

K) Is an outdoor seating area proposed? _____

L) If yes, how many seats are proposed? _____

M) If yes, is outdoor cooking proposed? _____

NA **XIV. INDUSTRIAL/COMMERCIAL PROPOSALS** (Automobile repair, taxi, motor vehicle sales, warehouse, manufacturing, animal hospital, research facilities, etc.)

A) Specify Use: _____

B) Number of shifts (if any): _____

C) Number of employees: _____
(If shifts are proposed, list number of employees per shift)

E) Number of work bays (if automobile repair): _____

F) Days/Hours of operation: _____

NA **XV. EDUCATIONAL/INSTITUTIONAL/RECREATIONAL PROPOSALS** (e.g., Museums, Theatres, Conference Centers, Hotels, Motels, Hospitals, Nursing Homes, Assisted Living Facilities, Nursery Schools, Private Schools, Day Care Centers, Places of Worship, Marinas, Membership Clubs, etc.)

A) Specify: _____

B) Number of shifts (if any): _____

C) Number of employees: _____
(If shifts are proposed, list number of employees per shift)

D) Number of beds (hospitals, nursing homes, etc): _____

E) Number of seats in largest assembly space: _____

NA

F) Number of classrooms (schools): _____

G) Number of rental units (hotels, motels, etc.) _____

H) Number of boat slips/courts (e.g., tennis, handball, etc.), alleys: _____

I) Days/Hours of Operation: _____

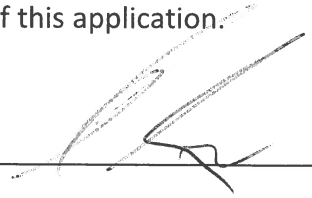
XVI. PROPOSALS NOT MENTIONED ABOVE (Please be specific):

NA

XVII. APPLICANT CERTIFICATION

I, Mr. Michael Abuladze, CEO of ARGO Development, certify that the this application has addressed the objectives outlined in the Zoning Ordinance with consideration given to the public health, safety and welfare; the comfort and convenience of the public in general or the residents or users of the proposed development and of the immediate neighborhood.

The applicant certifies that all information contained herein is accurate and complete as of the date of this application.



Signature of Applicant

11/29/22

Date

March 7, 2023

Ms. Anne Saylor, Chairperson
City of Poughkeepsie Planning Board
63 Civic Center Plaza
Poughkeepsie, NY 12601

Re: **ARGO Development – South Avenue Multi-Family Housing**
South Avenue, Poughkeepsie, NY, 12601
Tax Lot 937583

Dear Ms. Saylor:

The Applicant for the above referenced project, Argo Development, and our office, appeared before the City of Poughkeepsie Planning Board on February 22, 2023. Our office received comments issued for consideration by the City of Poughkeepsie Engineering and MASS Design n response to the site plan application for proposed development on South Avenue. The plan set has been revised in response to these comments. Below is a point-by-point response to each of the comments received:

MASS DESIGN GROUP COMMENTS, DATED FEBRUARY 20, 2023:

Drawings/Elevations:

In the conversation the development team shared example renderings that were evolving the design; these renderings have key differences to the elevations, especially as it pertains to the scale of the entrance volumes. We would encourage coordinating renderings and elevations for better clarity in subsequent review, or adding notations as to which document governs.

Response: The intent is to have both the Renderings and Elevations accurate and fully coordinated. Some components of the design (for example, the entrance volumes noted above) have been subject of additional design scrutiny and on occasion some drawings have been more advanced than others. Regardless, the design team will make every effort to submit fully coordinated renderings and elevations. It has been agreed to clearly indicate the issue DATE on each drawing so it will be clear which is the most current version.

Exterior Staircase:

The project hopes to activate the streetscape sidewalk with both a ramped sidewalk and exterior staircase near the South Avenue entrance. The sidewalk as currently drawn while it may meet minimum requirements however feels small in comparison with the building. We recommend widening the staircase to be grander in scale with the width of the entry volume of the building, or a similar study by the design team

Response: The design team acknowledges and shares the same concerns regarding the South Avenue Entrance. In response, this entry has been completely reconfigured and now includes and intermediate floor level which has a new Entrance Lobby which is at

the same level of the adjacent grade, allows for a higher ceiling height, and is composed on the exterior to a grander scale appropriate for a significant entrance.

Exterior Windows/Balconies:

We understand that the operation of the windows will be fixed picture windows above with awning (pull-in) windows below. Through discussion with the design team, we see that this choice mates well with the architectural intent.

MASS appreciates the inclusion of balconies, understanding the importance of outdoor space in a post-pandemic development that looks not just for fresh air intake, but access to fresh air. We see the balustrades on the included rendered images as an opportunity to consider patterns, material and/or craft of the region as the basis for a fabricated railing that helps to land this new project in an existing context.

Response: We confirm the window configuration as stated above (fixed picture windows above with awning in-swing windows below). Regarding the balustrades at the exterior balconies, as proposed at the previous meeting, the design team is citing the patterned metalwork at the top of the Mid Hudson Bridge as inspiration for a contextual reference. It is agreed that this must be appropriately detailed to be successful. This referenced motif may also be utilized at other locations throughout the project, such as ventilation openings at the Garage Level, or screening at the Roof Level, to unify the design.

Parking Lot Apertures:

Discussion was held regarding the ground floor and subsurface parking lots, and how the fresh air intakes would be treated in the building wall. This has been the discussion of previous applicants, and we would ask the design team to elaborate on the intent there (louvers, metal mesh, vine supporting grids, etc.)

Response: The intent is to develop the design of the infill of the openings at the Garage Level consistent with the referenced motif inspired by the top of the Mid Hudson Bridge, similar to the balconies.

Roof:

Roof plan needs clarification as we understand there will be Rooftop Mechanical Units, but we want to understand any proposed Bulkheads, Openspace, MEP Areas, Screening, etc for another review.

Response: The design team is developing a Roof Level Plan which will include roof top equipment, bulkheads, screening, and access for residents. Any visible elements will be indicated on the exterior elevations.

Generator:

Please clarify the generator location, fuel source and utility runs associated for the planning board to understand.

Response: The generator has been shown adjacent to the refuse area. The fuel source is yet to be determined.

Materials:

In the workshop we heard that the applicant is considering Cement Board Paneling vs Sheet Metals. Alternative Metal Sheeting approaches such as Zinc, and different shingling strategies such as at the Lace Mill Factory in Kingston were discussed. Please submit a materials sheet and/or physical samples for the planning board to review.

Response: The design of the exterior elevations has been updated to include zinc accent areas in a shingle pattern inspired by the precedent of the Lace Mill Factory in Kingston.

Exterior Lighting:

Discussion was held regarding lighting, and which lighting approach would be most appropriate on the facade. Given the contemporary look of the design, we encourage the design team to revise their wall mounted and parking lamp pole luminaires with something in the same spirit as the design building.

Response: The on-site lighting has been modified to be contemporary in nature and a modified photometric plan has been provided.

Benches, Tables, Site Features:

Similar to the lighting, the current detail for the benches appears to be a stock historical bench, and we would encourage them to specify a bench more compatible with the contemporary architecture design. Are these the same benches that are shown in the seating area with crushed stone on the Northwest corner of the site? Please clarify the proposed picnic table specification (material/style). Please clarify the field stone planter with a bench in the center of the pedestrian circle near the back entry with a drawing or precedent image.

Response: Benches, tables , and seating wall have been updated to speak to the same vocabulary as the building.

Landscaping:

We are encouraged that the siting of the building provides some screening of the surface parking lot behind and encourage additional density of tree plantings to add screening. We notice the shrubline along South Avenue, and while that is an encouraging buffer zone, we would ask the applicant to consider adding street trees (especially deciduous) along South Avenue to help enliven the streetscape further.

Response: The ramps along the frontage of South Avenue has been removed and red-oaks have been placed along the frontage of the site.

CITY OF POUGHKEEPSIE DEPT. OF PUBLIC WORKS & ENGINEERING COMMENTS, DATED FEBRUARY 17, 2023:

1. Verify and demonstrate available water utility is sufficient for proposed development for both domestic and fire suppression. Any fire suppression requirements to be discussed with City Fire Department and must demonstrate what is being requested is achieved.

Response: Fire service discharge calculations were provided as part of our January 27, 2023 submission.

2. Provide utility report demonstrating available sanitary sewer utility is sufficient for proposed development. Include discussion of water utility for domestic and fire suppression requirements.

   Response: The proposed project connects to the existing trunk main in the City of Poughkeepsie.

3. Indicate location of all proposed backflow devices. Coordinate with City Building Department on type that meets requirements per code.

   Response: A note has been added under City of Poughkeepsie Water Notes, on Sheet G002, indicating reduced pressure zone valve is to be provided on the fire supply line and double check valve shall be provided on the domestic supply at each location where water line enters the building. Backlfow assemblies shall be used in University of Southern California list of approved backflow prevention assemblies.

4. Provide City Standard details for Curbs, Sidewalk, Driveway, Aprons, Pipe Trench, Water TS&V etc. for work within City ROW.

   Response: City curb details has been updated with rebar reinforcement, sidewalk detail has been updated to the required thickness, concrete apron detail has been further refined with rebar reinforcement, and standard City of Poughkeepsie trench detail has been provided for water and sanitary sewer work within the ROW

5. Sheet C160 and C560 indicates Mueller Hydrant. Provide and indicate on Site Plan City Standard Hydrant – American Darling B-62-B. No equivalent or exceptions.

   Response: Said details have been updated accordingly.

6. Indicate and show on Sheet C160 and C560 water tapping sleeve and valve and redundant valve on back side of the curb. Both valves to be Red Top, Right Open.

   Response: Said details have been updated accordingly.

7. Provide design, stability calculations and certification by NYS Licensed PE for retaining walls greater than 5 feet in height.

   Response: Upon completion of geotechnical report, retaining wall designs will be provided.

8. The engineer shall certify that the native soils are acceptable for use as in infiltration practice for the development. In the event the proposed infiltration practice cannot be used, an alternative means to handle site stormwater will need to be developed and implemented for the project. Any alternative must be approved by the City Engineer.

   Response: Additional hydraulic conductivity tests will be performed in the area of the infiltration gallery to confirmed the design rate.

9. Proposed development indicates 2.5 acres of disturbance. Provide SWPPP for review.

   Response: A SWPPP was provided in November 2022. A copy of the SWPPP has been provided.

10. Prosed development indicates storm sewer discharge to NYSDOT owned storm sewer. Any work within or adjacent to NYSDOT ROW or Utility Easements must be reviewed and approved by the respective agency. Provide copies of correspondence and/or approvals.

    Response: Comment noted.

11. Any food prep areas within development requires properly sized and designed grease trap. Provide size, location, and maintenance schedule on site plan, if applicable.

    Response: No food preparation areas are proposed with the exception of the typical kitchen associated with each unit.

12. Show on Site Plan maintenance and protection of traffic for work within City ROW.

    Response: A traffic control plan has been provided on Sheet C200.

13. Provide an estimate of costs for site work.

    Response: Upon approval, and opinion of probable cost estimate will be provided.

Please find enclosed:

- 1 copy of the site plan set dated 3/7/2023
- 1 copy of the EAF, dated 1/27/2023
- 1 copy of the Architectural Elevations, dated 3/7/2023
- 1 copy of Roof Plan, dated 3/7/2023
- 1 copy of the NRI, dated 3/7/2023
- 1 copy of fire supply calculations (dated 1/27/2023 – previously provided)

We believe all remaining comments have been responded to and request to be placed on the March 21st Planning Board agenda. If you should have any questions or comments during your review of the submitted documents, feel free to reach out to me directly at (845) 486-1478.

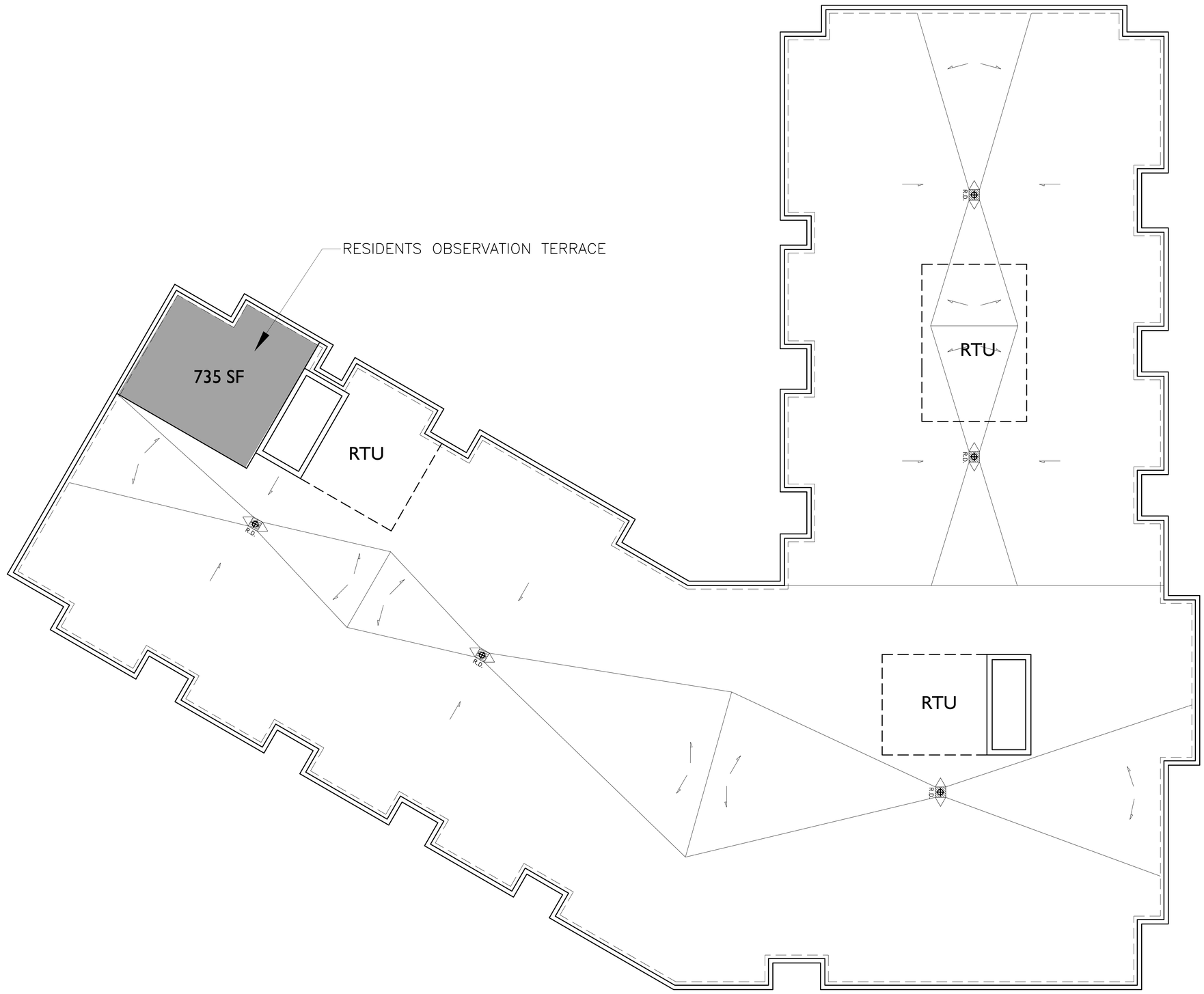
Sincerely,

Christopher Lapine

Christopher Lapine, PE
LaBella Associates | Senior Civil Engineer
Regional Marketing Leader

cc: Michael Abuladze

File



A-1 PROPOSED ROOF PLAN

1/8" = 1'-0"

N

No.	REVISION/SUBMISSION	DATE

Liscum McCormack VanVoorhis
181 Church Street Poughkeepsie, New York 12601
tel. 845.452.2268 fax. 845.452.3752 lmvarchitects.com
ARCHITECTURE PLANNING INTERIORS

PROJECT
SOUTH AVENUE PARCEL
POUGHKEEPSIE MID-RISE MULTIPLE

DRAWING
PROPOSED ROOF PLAN

SEAL

DRAWN BY

PROJECT No. 22054

CHECKED BY

DATE 3-7-2023

DRAWING No. A103

FILE P:\2022\22054

SITE PLAN

SOUTH AVENUE MULTI-FAMILY DEVELOPMENT

SOUTH AVENUE

CITY OF POUGHKEEPSIE, DUTCHESS COUNTY, NEW YORK

PROJECT NO: 2222201

NOVEMBER 28, 2022

LAST REVISED:
MAR. 7, 2023

INDEX OF DRAWINGS

PAGE NO.	REV	SHEET NO.	DATE	DESCRIPTION
1	2	G001	03/07/23	COVER SHEET
2	1	G002	01/27/23	NOTES
3	0	SVY1	11/04/22	MAP OF EXISTING CONDITIONS PREPARED FOR ARGO DEVELOPMENT
4	2	C120	03/07/23	DEMOLITION PLAN
5	2	C130	03/07/23	SITE PLAN
6	1	C131	01/27/23	TRUCK MANEUVERING PLAN
7	1	C140	01/27/23	GRADING AND EROSION &SEDIMENT CONTROL PLAN
8	2	C160	03/07/23	UTILITY PLAN
9	2	C180	03/07/23	LANDSCAPE PLAN
10	2	C190	03/07/23	PHOTOMETRIC LIGHTING PLAN
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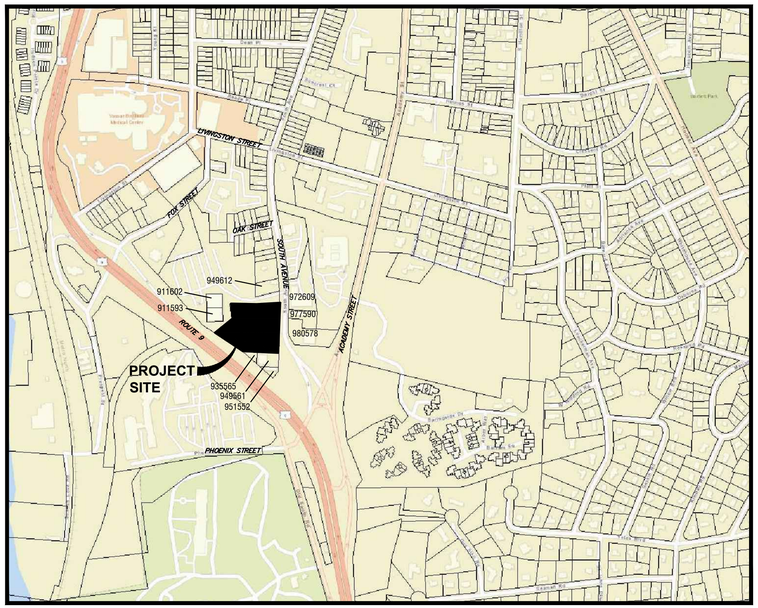
13	1	C531	03/07/23	SITE DETAILS
14	1	C532	03/07/23	SITE DETAILS
15	1	C540	01/27/23	EROSION AND SEDIMENT CONTROL DETAILS
16	1	C550	01/27/23	STORM SEWER DETAILS
17	1	C551	01/27/23	STORM SEWER DETAILS
18	2	C560	03/07/23	WATER SYSTEM DETAILS
19	2	C570	03/07/23	SANITARY SEWER DETAILS
20	2	C580	03/07/23	LANDSCAPE DETAILS



LOCATION MAP
1"=500'

Parcel #	Owner/ Owner Address
980578	Spyglass Lane LLC 235 South Ave Poughkeepsie, NY 12601
935565	City Of Poughkeepsie PO Box 300 Poughkeepsie, NY 12602
911602	Vassar Brothers Hospital 54 Page Park Dr Poughkeepsie, NY 12603
911593	Fox Street Condominiums LLC 21 Fox St Poughkeepsie, NY 12601
951552	Latham Interests Inc 250 South Ave Poughkeepsie, NY 12601
977590	South Ave of Dutchess LLC 278 Mill St Ste 100 Poughkeepsie, NY 12601
949661	John R. Satterfield, Jr 248 South Av Poughkeepsie, NY 12601
937583	South Ave Real Est Assoc LLC 510 Haight Ave Poughkeepsie, NY 12603
972609	Executive Park Assoc No 2 Ltd 60 Morrow Ave Scarsdale, NY 10583
949612	Sharad Deedwaniya PO Box 1995 Poughkeepsie, NY 12602

BULK TABLE:

CITY OF POUGHKEEPSIE ZONING DISTRICT: R-D

(SUBJECT TO REQUIREMENTS HIGH DENSITY R-5 DISTRICT PERMITTED USES [SECTION 19-3-16(2)] AND ALL OTHER REQUIREMENTS APPLICABLE TO HIGH DENSITY R-5.

ZONING REQUIREMENTS:	REQUIRED	PROPOSED
MINIMUM LOT AREA	20,000 SF	121,000± SF
MINIMUM LOT WIDTH	50 FT	321 FT
MINIMUM SETBACK REQUIREMENTS:		
FRONT	20 FT	21 FT
SIDES	35 FT	36 FT
REAR	35 FT	98 FT
MAXIMUM BUILDING HEIGHT	6 STORIES OR 70 FT	5 STORIES OVER 1-STORY GARAGE, 70 FT
MAXIMUM BUILDING LOT COVERAGE	50%	22,640 SF OR 18.8%
MINIMUM GREEN SPACE	26,100 SF	52,569 SF

PARKING SPACES REQUIRED OFF-STREET PARKING	# UNITS	REQUIRED SPACES	PROPOSED SPACES
1.0 SPACE FOR EACH STUDIO OR EFFICIENCY APARTMENT;	0 UNITS X 1.0	0 SPACES	0 SPACES
1.5 SPACES FOR EACH 1-BEDROOM APARTMENT;	87 UNITS X 1.5	130.5 SPACES	115 SPACES (1)
2.0 SPACES FOR EACH 2-BEDROOM OR LARGER APARTMENT;	0 UNITS X 2.0	0 SPACES	0 SPACES
TOTAL	87 UNITS	130.5 SPACES REQUIRED	115 SPACES* PROPOSED

* VARIANCE REQUIRED
(1) SIXTY (60) SPACES IN GARAGE, AND 55 SPACES ON SURFACE

CITY OF POUGHKEEPSIE DEPARTMENTAL SIGNATURES

Fire Chief Date

Police Chief Date

Building Inspector Date

City Engineer Date

Commissioner of Public Works Date

CITY PLANNING BOARD
CITY OF POUGHKEEPSIE, NEW YORK
SITE PLAN APPROVAL

FILE NO:

PROJECT NAME: SOUTH AVENUE MULTI-FAMILY DEVELOPMENT

PROJECT LOCATION: SOUTH AVENUE

APPLICANT: ARGO DEVELOPMENT

OFFICIALLY APPROVED at the Planning Board

meeting held the ____ day of _____ 2____

PLANNING CHAIR:

DESIGNEE:

DATE SIGNED:

CONDITION(S):

OWNER:

SOUTH AVENUE REAL ESTATE ASSOCIATION, LLC
510 HAIGHT AVENUE
POUGHKEEPSIE, NY 12603

APPLICANT:

ARGO DEVELOPMENT
95 CHESTNUT ROAD
MONTVALE, NJ 07645

TAX MAP INFORMATION:

CITY OF POUGHKEEPSIE
SECTION 6061, BLOCK 52, LOT 937583

AREA:

TOTAL PROJECT ACREAGE : 2.77± ACRES

UTILITY COMPANIES:

ELECTRIC: CENTRAL HUDSON GAS & ELECTRIC CORP
284 SOUTH AVENUE
POUGHKEEPSIE, NY 12601
(845) 452-2700

GAS: CENTRAL HUDSON GAS & ELECTRIC CORP
284 SOUTH AVENUE
POUGHKEEPSIE, NY 12601
(845) 452-2700

WATER: CITY OF POUGHKEEPSIE WATER DEPARTMENT
62 CIVIC CENTER PLAZA,
POUGHKEEPSIE, NY 12601
(845) 451-4173

SEWER: CITY OF POUGHKEEPSIE WASTEWATER (SEWER) DEPARTMENT
62 CIVIC CENTER PLAZA,
POUGHKEEPSIE, NY 12601
(845) 451-4173

OWNER/APPLICANT SIGNATURE

THE UNDERSIGNED APPLICANT FOR THE PROPERTY AND THE UNDERSIGNED OWNER OF THE PROPERTY SHOWN HEREON, STATE THAT THEY ARE FAMILIAR WITH THIS MAP, ITS NOTES AND ITS CONTENTS, AND HEREBY CONSENT TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON.

THE APPLICANT AND OWNER UNDERSTAND THEIR OBLIGATION TO THE TOWN TO KEEP THIS SITE AS PER SITE PLAN APPROVAL BY THE TOWN PLANNING BOARD UNTIL A NEW OR REVISED SITE PLAN IS APPROVED FOR THE SITE. THE APPLICANT AND OWNER UNDERSTAND THEIR OBLIGATION TO THE TOWN NOT TO OCCUPY THE PREMISES BEFORE A CO IS ISSUED BY THE TOWN BUILDING DEPARTMENT.

APPLICANT DATE

OWNER DATE

LaBella
Powered by partnership.

21 Fox Street
Poughkeepsie, NY 12601
(845) 454-3980

labellapc.com

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

NO:	DATE:	DESCRIPTION:
2	03/07/23	REVISED PER PLANNING BOARD COMMENTS
1	01/27/23	REVISED PER CITY COMMENTS
Revisions		

PROJECT NAME & LOCATION:

SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

PROJECT NUMBER: 2222201

DRAWN BY:

REVIEWED BY: CPL

ISSUED FOR: PLANNING BOARD REVIEW

DATE: 11/28/2022

DRAWING NAME:

COVER SHEET

DRAWING NUMBER:

G001

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DEMOLITION NOTES:

1. REFER TO REQUIREMENTS OUTLINED IN THE MATERIALS MANAGEMENT, HEALTH AND SAFETY, AND EROSION & SEDIMENT CONTROL PLANS AND NOTES & REMEDIAL NOTES (THIS SHEET) PRIOR TO COMMENCEMENT OF WORK.
2. CONFORM TO APPLICABLE CODE FOR SAFETY OF ADJACENT STRUCTURES, DUST CONTROL, RUNOFF CONTROL, AND HAULING, DISPOSAL AND STORAGE OF DEBRIS.
3. PROVIDE, ERECT, AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES.
4. MAINTAIN EXISTING UTILITIES TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS. DO NOT INTERRUPT EXISTING UTILITIES SERVING OPERATING FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY OWNER AND AUTHORITIES HAVING JURISDICTION.
5. NOTIFY ADJACENT OWNERS OF WORK THAT MAY AFFECT THEIR PROPERTY, POTENTIAL NOISE, UTILITY OUTAGE, OR DISRUPTION. COORDINATE WITH OWNER.
6. PREVENT MOVEMENT OR SETTLEMENT OF ADJACENT STRUCTURES. PROVIDE BRACING AND SHORING.
7. LOCATE AND IDENTIFY ALL EXISTING UTILITIES WITHIN THE CONSTRUCTION AREA. DISCONNECT AND SEAL OR CAP OFF UTILITY SERVICES THAT WILL BE AFFECTED BY THIS PROJECT. NOTIFY AFFECTED UTILITY COMPANIES BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS. VERIFY THAT UTILITIES HAVE BEEN DISCONNECTED AND CAPPED.
8. DEMOLISH AND REMOVE COMPONENTS IN AN ORDERLY AND CAREFUL MANNER.
9. PROTECT EXISTING FEATURES THAT ARE NOT TO BE DEMOLISHED.
10. CONDUCT OPERATIONS WITH MINIMUM INTERFERENCE TO PUBLIC OR PRIVATE ACCESSES.
11. MAINTAIN EGRESS AND ACCESS AT ALL TIMES. DO NOT CLOSE OR OBSTRUCT ROADWAYS, OR SIDEWALKS WITHOUT PERMITS. COORDINATE W/ AUTHORITY HAVING JURISDICTION.
12. CEASE OPERATIONS IMMEDIATELY IF ADJACENT STRUCTURES APPEAR TO BE IN DANGER. NOTIFY AUTHORITY HAVING JURISDICTION.
13. ROUGH GRADE AND COMPACT AREAS AFFECTED BY DEMOLITION TO MAINTAIN SITE GRADES AND CONTOURS.
14. FIELD VERIFY EXISTING CONDITIONS AND CORRELATE WITH REQUIREMENTS INDICATED ON DEMOLITION PLAN TO DETERMINE EXTENT OF SELECTIVE DEMOLITION REQUIRED.
15. CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH SELECTIVE DEMOLITION OPERATIONS.
16. CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN. ENSURE SAFE PASSAGE OF PEOPLE AROUND SELECTIVE DEMOLITION AREA.
17. USE WATER MIST, TEMPORARY ENCLOSURES AND OTHER SUITABLE METHODS TO LIMIT THE SPREAD OF DUST AND DIRT. COMPLY WITH GOVERNING ENVIRONMENTAL PROTECTION REGULATIONS. DO NOT USE WATER WHEN IT MAY DAMAGE EXISTING CONSTRUCTION, SUCH AS CAUSING ICING, FLOODING, AND TRANSPORTING POLLUTANTS.
18. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
19. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE START OF SELECTIVE DEMOLITION.
20. PROMPTLY DISPOSE OF DEMOLISHED MATERIALS. ALL DEBRIS RESULTING FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE AT A FACILITY APPROVED TO RECEIVE THE DEBRIS. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE. DO NOT BURN DEMOLISHED MATERIALS ON-SITE.
21. PRIOR TO THE START OF CONSTRUCTION OR EXCAVATION, TREES TO BE RETAINED SHALL BE PROTECTED BY SILT FENCE, SNOW FENCE, CONSTRUCTION FENCE, OR EQUAL, WHICH WILL BE PLACED AT THE DRIP LINE OR SEVERAL FEET BEYOND. HOWEVER, THE FENCING SHALL NOT CROSS PUBLIC SIDEWALKS. NO STORAGE OR STOCKPILING OF CONSTRUCTION MATERIALS, DEBRIS, OR EQUIPMENT SHALL OCCUR WITHIN THE FENCED AREA.
22. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH LOCAL DUST CONTROL AND/OR MONITORING ORDINANCES, AND REMEDIAL ACTION WORK PLAN PREPARED FOR THE SITE.

GENERAL CONSTRUCTION NOTES:

1. ALL UNDERGROUND UTILITIES ARE SHOWN IN THEIR RELATIVE POSITION AND DEPTH FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY THEIR ACTUAL LOCATION IN THE FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. ANY CONDITION ENCOUNTERED IN THE FIELD DIFFERING FROM THOSE SHOWN HEREON, SHALL BE REPORTED TO THE DESIGN ENGINEER BEFORE CONSTRUCTION IS TO PROCEED.
3. ALL STORM SEWER SHALL BE SMOOTH INTERIOR HDPE WITH WATER TIGHT FITTINGS.
4. CONTRACTOR TO VERIFY STATUS OF ALL UTILITY SERVICES PRIOR TO INTERRUPTION.
5. EXPLORATORY EXCAVATIONS SHALL BE PERFORMED BY THE CONTRACTOR AT ALL UTILITY CONNECTION LOCATIONS AND AS NEEDED TO VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK.
6. BEFORE CONSTRUCTING LINES TO CONNECT TO EXISTING UTILITIES, VERIFY EXISTING UTILITY INVERTS AND NOTIFY THE ENGINEER IF ANY VARIATION FROM THE PLAN IS REQUIRED.
7. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES IN SERVICE FOR THE DURATION OF THE WORK.
8. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS AND ASSOCIATED CONDITIONS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING UTILITY TRENCHES AND EXCAVATIONS AND FOR THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF THE WORK.
10. SEWER MAINS IN RELATION TO WATER MAINS: WHERE POSSIBLE, SEWERS SHALL BE LAID AT LEAST 10 (TEN) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. VERTICAL SEPARATION SHALL BE MAINTAINED TO PROVIDE 18 (EIGHTEEN) INCHES BETWEEN TOP OF SEWER AND BOTTOM OF THE WATER MAIN AT UTILITY CROSSINGS. WHEN NOT POSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION, SEWER PIPE SHALL BE PRESSURE RATED AND TESTED @ 150PSI, 10 (TEN) FEET ON EACH SIDE OF THE WATER MAIN BEING CROSSED.
11. ALL PROPOSED UTILITIES SHALL TERMINATE 5 FEET FROM ANY PROPOSED BUILDING FACE. CONTRACTOR TO COORDINATE WITH BUILDING PLANS FOR ANY CONNECTIONS.
12. ALL GRAVITY SANITARY SEWER SHALL BE SDR 21 PVC UNLESS OTHERWISE SPECIFIED.
13. IF ROCK REMOVAL BY BLASTING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVALS AND PERMITS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
14. REDUCE PRESSURE ZONE VALVE TO BE PROVIDED ON FIRE SUPPLY AND DOUBLE CHECK VALVE ON DOMESTIC SUPPLY AT EACH LOCATION WHERE WATER LINE ENTERS THE BUILDING. BACKFLOW ASSEMBLES SHALL BE LISTED IN UNIVERSITY OF SOUTHERN CALIFORNIA LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLES.
15. ALL BACKFLOW PREVENTION AND METER SHALL BE LOCATED INSIDE THE BUILDING.
16. CONTRACTOR SHALL PROVIDE AN AS-BUILT PLAN OF THE PROPOSED IMPROVEMENTS BY A LICENSED NYS SURVEYOR. IT SHALL INCLUDE BUT NOT BE LIMITED TO BUILDINGS, ROADWAYS, WALLS, UTILITIES (INCLUDING INVERTS, RIMS, PIPE SIZE AND DIMENSIONS), SIDEWALKS, ROADWAY RAMPS, CURBING, PARKING LOTS (INCLUDING STRIPING), LANDSCAPE AREAS, ETC. HARDCOPY AND ELECTRONIC COPIES SHALL BE PROVIDED TO OWNER AND PROJECT ENGINEER SEE CITY OF POUGHKEEPSIE NOTES.
17. UNDERGROUND ELECTRIC SHOWN ON THIS PLAN FOR REFERENCE ONLY. REFER TO MEP AND LIGHTING PLANS.

GRADING NOTES:

1. PRIOR TO SITE DISTURBANCE, CONTRACTOR TO INSTALL EROSION & SEDIMENT CONTROL MEASURES.
2. BOX ALL TREES AND HOUSE ALL SHRUBS AND HEDGES BEFORE PLACING EARTH AGAINST OR NEAR THEM. ORNAMENTAL TREES, SHRUBS AND HEDGES WHICH MUST BE REMOVED DURING CONSTRUCTION SHALL BE HEALED IN AND RE-PLANTED IN AS GOOD A CONDITION AS THEY WERE BEFORE THEIR REMOVAL. ANY DAMAGED TREES, SHRUBS, AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, REFER TO LANDSCAPE DRAWINGS.
3. ALL EARTHWORK SHALL BE SMOOTHLY AND EVENLY BLENDED INTO EXISTING CONDITIONS. NO WORK, STORAGE OR TRESPASS SHALL BE PERMITTED BEYOND THE BOUNDARIES OF ANY EASEMENT OR PROPERTY LINE.
4. REMOVE ALL VEGETATION, TREES, STUMPS, GRASSES, ORGANIC SOILS, DEBRIS AND DELETERIOUS MATERIALS WITHIN THE AREAS SLATED FOR CONSTRUCTION, REFER TO LANDSCAPE DRAWINGS.
5. IF PREVIOUSLY UNKNOWN CULTURAL, ARCHEOLOGICAL, OR HISTORIC REMAINS OR ARTIFACTS ARE DISCOVERED IN THE COURSE OF CONSTRUCTION OF THIS PROJECT, THE PROJECT SPONSORS SHALL SUSPEND CONSTRUCTION OPERATIONS IN THE PERTINENT AREA AND SHALL NOTIFY THE PROJECT ENGINEER. CONSTRUCTION IN THAT AREA SHALL RESUME ONLY AFTER COMPLETION OF FEDERAL, TRIBAL, AND STATE COORDINATION TO DETERMINE WHETHER PROTECTION OR RECOVERY OF THE REMAINS IS WARRANTED, OR WHETHER THE SITE IS ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES.

TREE CLEARING NOTES:

1. TREE CLEARING SHALL BE LIMITED TO THE PERIOD BETWEEN OCTOBER 30TH AND MARCH 31ST TO ENSURE NO POTENTIAL TAKE OF BAT SPECIES.

SITE PLAN NOTES:

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE AND UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
2. ALL PAVEMENT RESTORATION SHALL MEET AND MATCH EXISTING GRADES.
3. ALL SAWCUT LINES SHALL BE PARALLEL AND CURVILINEAR TO EXISTING OR PROPOSED CURBING AND SHALL BE A CONSTANT DISTANCE OF 18" MIN AWAY.
4. NOTIFY ENGINEER 48 HOURS PRIOR TO INITIALIZATION OF ANY WORK ON SITE.
5. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT PRIOR REVIEW FROM THE ENGINEER.
6. CONTRACTOR IS RESPONSIBLE FOR EMPLOYING AND MAINTAINING ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING CONSTRUCTION.
7. CONTRACTOR IS RESPONSIBLE FOR PROPERLY & SAFELY MAINTAINING AREA BETWEEN ALL ADJOINING PROPERTIES.
8. NO WORK, STORAGE OR TRESPASS SHALL BE PERMITTED BEYOND THE SITE PROPERTY LINES OR PUBLIC RIGHT-OF-WAY. ADJACENT PROPERTY OWNED BY THE DEVELOPER MAY BE BE USED FOR EQUIPMENT STORAGE DURING CONSTRUCTION OF THE PROPERTY.
9. ALL EXISTING LAWN AREA, CURBING, PAVING, SIDEWALKS, CULVERTS OR OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED BY TRENCHING OR EXCAVATION OPERATIONS SHALL BE REPLACED OR REPAIRED TO A CONDITION EQUAL TO EXISTING, AS DESCRIBED IN CONTRACT DOCUMENTS OR AS ORDERED BY ENGINEER (AOBE). MAILBOXES, SIGN POSTS, ETC SHALL BE PROTECTED OR REMOVED AND REPLACED EXACTLY AS THEY WERE BEFORE BEING DISTURBED. REMOVE AND REPLACE AFFECTED CURBING AND SIDEWALK TO NEAREST JOINT. REMOVE PAVEMENT AND REPLACE TO SAW CUT LINE, SAW CUT IN STRAIGHT LINE TO POINT NEEDED TO BLEND GRADE, REMOVE LAWN AND REPLACE TO MINIMUM LIMIT OF EXCAVATION.
10. CONTRACTOR SHALL PROVIDE AN AS-BUILT PLAN OF THE PROPOSED IMPROVEMENTS BY A LICENSED SURVEYOR. IT SHALL INCLUDE BUT NOT LIMITED TO BUILDINGS, ROADWAYS, WALLS, UTILITIES (INCLUDING INVERTS, RIMS, PIPE SIZE AND DIMENSIONS), SIDEWALKS, ROADWAY RAMPS, CURBING, PARKING LOTS (INCLUDING STRIPING), LANDSCAPE AREAS, ETC. HARDCOPY AND ELECTRONIC COPIES SHALL BE PROVIDED TO OWNER AND PROJECT ENGINEER.

LAYOUT NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL FIELD LAYOUT. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP AS BUILT PLANS FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES AND INVERTS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND THE ENGINEER. THE CONTRACTOR SHALL PROVIDE ANY CORRECTION OR ADDITIONS TO THE SATISFACTION OF THE OWNER AND THE ENGINEER BEFORE UTILITIES WILL BE ACCEPTED.
2. BUILDING DIMENSIONS TO BE TAKEN FROM ARCHITECTURAL BUILDING PLANS. NOTIFY THE ENGINEER OF ANY DEVIATION FROM CONDITIONS SHOWN ON THIS PLAN.
3. PRIOR TO THE START OF CONSTRUCTION OR EXCAVATION, TREES TO BE RETAINED SHALL BE PROTECTED BY SILT FENCE, SNOW FENCE, CONSTRUCTION FENCE, OR EQUAL, WHICH WILL BE PLACED AT THE DRIP LINE OR SEVERAL FEET BEYOND.
4. FENCING SHALL NOT CROSS PUBLIC SIDEWALKS.
5. NO STORAGE OR STOCKPILING OF CONSTRUCTION MATERIALS, DEBRIS, OR EQUIPMENT SHALL OCCUR WITHIN THE FENCED AREA.

ROCK REMOVAL NOTES:

ROCK REMOVAL IS NOT ANTICIPATED. IF ROCK REMOVAL SHALL BE NECESSARY FOR THE INSTALLATION OF THE PROPOSED WORK, SHALL BE BY MECHANICAL MEANS ONLY. BLASTING IS NOT PERMITTED.

PAVING NOTES:

1. NO VEHICULAR TRAFFIC OF ANY SORT SHALL BE PERMITTED ON THE SURFACE OF SUBBASE COURSE MATERIAL ONCE IT HAS BEEN FINE GRADED, COMPACTED, AND IS READY FOR PAVING. SUBBASE MATERIAL SO PREPARED FOR PAVING SHALL BE PAVED WITHIN THREE DAYS OF PREPARATION.
2. SUBBASE MATERIAL AND THE VARIOUS ASPHALT CONCRETE MATERIALS CALLED FOR IN THESE DRAWINGS SHALL CONFORM WITH THE MOST RECENT REFERENCED SECTION OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS. CONSTRUCTION SHALL BE AS FURTHER SET FORTH IN THOSE SPECIFICATIONS AND AS OTHERWISE PROVIDED FOR IN THESE DRAWINGS.
3. PLACE ASPHALT CONCRETE MIXTURE ON PREPARED SURFACE, SPREAD AND STRIKE-OFF USING A SELF-PROPELLED PAVING MACHINE, WITH VIBRATING SCREED. PLACEMENT IN INACCESSIBLE AND SMALL AREAS MAY BE BY HAND.
4. PROVIDE JOINTS BETWEEN OLD AND NEW PAVEMENTS OR BETWEEN SUCCESSIVE DAY'S WORK.
5. TACK COAT WHEN SPECIFIED OR CALLED OUT ON THE DRAWINGS OR REQUIRED BY THE REFERENCED SPECIFICATION SHALL CONFORM WITH THE FOLLOWING:
   A. TACK COAT SHALL MEET THE MATERIAL REQUIREMENTS OF 702-90 ASPHALT EMULSION FOR TACK COAT OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED 2017, SHALL BE APPLIED IN ACCORDANCE WITH SECTION 407 – TACK COAT SHALL BE IN ACCORDANCE WITH THOSE SPECIFICATIONS AND AS OTHERWISE PROVIDED FOR IN THESE DRAWINGS.
   B. REMOVE LOOSE AND FOREIGN MATERIAL FROM ASPHALT SURFACE BEFORE PAVING NEXT COURSE. USE POWER BROOMS, BLOWERS OR HAND BROOM.
   C. APPLY TACK COAT TO ASPHALT PAVEMENT SURFACES & AND SURFACES OF CURBS, GUTTERS, MANHOLES, AND OTHER STRUCTURES PROJECTING INTO OR ABUTTING PAVEMENT. DRY TO A "TACKY" CONSISTENCY BEFORE PAVING.
   D. TACK COAT ENTIRE VERTICAL SURFACE OF ABUTTING EXISTING PAVEMENT.
6. AFTER COMPLETION OF PAVING AND SURFACING OPERATIONS, CLEAN SURFACES OF EXCESS OR SPILLED ASPHALT, GRAVEL OR STONE MATERIALS TO THE SATISFACTION OF THE ENGINEER.

CITY OF POUGHKEEPSIE PLANNING BOARD - SANITARY & SEWER NOTES:

1. FLOOR DRAINS, IF CONSTRUCTED, SHALL BE CONNECTED TO THE SANITARY SEWER. FLOOR DRAINS DO NOT INCLUDE FOUNDATION/FOOTER DRAIN: ALL DISCHARGES TO THE SANITARY SEWER SHALL COMPLY WITH THE EFFLUENT LIMITS OF THE LOCAL AND/OR DUTCHESS COUNTY SANITARY CODE.
2. SANITARY SEWERS AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE CITY OF POUGHKEEPSIE. ALL SANITARY SEWER SYSTEM COMPONENTS SHALL BE INSTALLED BY OR UNDER THE SUPERVISION OF A CITY OF POUGHKEEPSIE LICENSED PLUMBER IN ACCORDANCE WITH THE CITY PLUMBING CODE.
3. MAJOR EARTHWORK SHALL BE COMPLETED PRIOR TO INSTALLATION OF ANY SANITARY SEWER MAINS AND APPURTENANCES. ALL CONNECTING SEWER LINES SHALL BE FLUSHED BEFORE TESTED.
4. CITY SANITARY SEWER MAINS ARE TO BE POLYVINYL CHLORIDE (PVC) SDR-21. PROJECT SANITARY LATERALS SHALL BE PVC, SDR-35, UNLESS OTHERWISE NOTED.
5. FINAL SEWER COLLECTION SYSTEM LAYOUT IS SUBJECT TO REVIEW, REVISION AND APPROVAL BY THE MUNICIPAL SEWER DEPARTMENT.
6. ALL SANITARY PIPE AND/OR MANHOLES SHALL BE A MINIMUM OF TEN (10) HORIZONTAL FEET FROM THE WATER MAIN. SANITARY PIPE SHALL HAVE A MINIMUM 18" SEPARATION FROM ANY WATER MAIN OR WATER SERVICE LINE. IF FOR SOME REASON THIS SEPARATION CANNOT BE ACHIEVED, SANITARY SEWER PIPE IN THE AREA SHALL BE SDR-21 PRESSURE RATED PIPE, AND ONE FULL LENGTH OF WATER MAIN SHALL BE CENTERED UNDER OR OVER THE SEWER. ALL SANITARY SEWER CONSTRUCTION SHALL BE TO SPECIFICATIONS OF THE MUNICIPAL SEWER DEPARTMENT.
7. ALL SANITARY TESTING SHALL BE PERFORMED UNDER THE SUPERVISION OF THE PROJECT ENGINEER, AND, CERTIFICATES OF COMPLIANCE WITH THE INSTALLATION SPECIFICATIONS, TEST STANDARDS, APPROVED PLANS OR APPROVED AMENDMENTS SHALL BE PROVIDED TO THE APPROPRIATE SEWER AUTHORITY AS A CONDITION OF APPROVAL FOR OPERATION.
8. ALL SANITARY SEWER CONSTRUCTION SHALL BE SUBJECT TO INSPECTION BY THE MUNICIPAL SEWER SUPERINTENDENT PRIOR TO BACKFILLING. PIPE BEDDING AND PIPE ZONE MATERIAL SHALL BE IN ACCORDANCE WITH THIS SHEET, DETAIL 1.
9. ALL NEW SANITARY SEWER MANHOLE COVERS SHALL BE MINIMUM NOMINAL 24" DIAMETER CAST IRON AND SHALL READ "SANITARY SEWER". FRAMES SHALL BE 8-INCHES IN HEIGHT.
10. INDICATOR TAPE SHALL BE PLACED 12" BELOW FINISHED GRADE DIRECTLY ABOVE ALL SANITARY LINES.
11. LOCATION OF SEWER LATERAL CLEAN OUTS ARE TO BE PLACED AS SHOWN ON THE APPROVED SITE PLAN AND NOT TO EXCEED EVERY 75' MEASURED FROM THE SEWER MAIN CONNECTION OR AS DETERMINED BY THE MUNICIPAL SUPERINTENDENT OF SEWERS WHERE LOCATIONS ARE NOT SPECIFICALLY SHOWN.
12. EXTERNAL DROP MANHOLES SHALL BE USED FOR SEWERS ENTERING AT AN ELEVATION OF 24 INCHES OR HIGHER AT THE INLET OF A SEWER MANHOLE.

TESTING GRAVITY SEWER SYSTEM:

1. CONTRACTOR SHALL INSPECT AND TEST THE INSTALLATIONS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION WHEN WORK IS READY FOR TESTING. AFTER ALL TESTS HAVE BEEN PERFORMED, EVIDENCE OF COMPLIANCE SHALL BE FORWARDED TO OWNER/ENGINEER AND THE AUTHORITY HAVING JURISDICTION PRIOR TO ACCEPTANCE.
2. THE CONTRACTOR SHALL TEST AND INSPECT FOR ALIGNMENT OF ALL SANITARY SEWERS.
3. EACH MANHOLE-TO-MANHOLE SECTION SHALL BE REJECTED OR ACCEPTED BASED ONLY ON RESULTS OF ITS OWN INDEPENDENT SECTION TEST AND NOT ON RESULTS OF ANY ONE TEST RUN SIMULTANEOUSLY OVER MORE THAN ONE CONSECUTIVE MANHOLE-TO-MANHOLE SECTION. THE ONLY EXCEPTION ALLOWED: ACCEPTING SEVERAL CONSECUTIVE MANHOLE-TO-MANHOLE SECTIONS BASED ON ONE COMBINED INFILTRATION TEST INDICATING ZERO INFILTRATION.
4. LOW PRESSURE AIR TESTING SHALL BE PERFORMED UNDER DIRECTION OF ENGINEER ACCORDING TO ASTM F1417. LOW PRESSURE AIR TEST IS A COMPARISON OF THE MEASURED TIME NECESSARY FOR ONE (1) PSIG PRESSURE DROP TO OCCUR, IF AT ALL, WITH MINIMUM ALLOWABLE TIME FOR THAT PRESSURE DROP TO OCCUR DETERMINED BY METHODS INDICATED IN ASTM F1417. IF THE ONE (1) PSIG PRESSURE DROP OCCURS FASTER THAN ALLOWABLE TIME, SECTION IS UNACCEPTABLE.
5. AN AIR TEST SHALL NOT BE RUN UNTIL SECTION OF LINE TO BE TESTED HAS BEEN CLEANED OF ALL FOREIGN MATERIAL BY FLUSHING AND HAS BEEN VISUALLY INSPECTED AND APPROVED BY THE ENGINEER. CERTAIN PIPE MATERIALS PRODUCE MORE CONSISTENT RESULTS WHEN INTERIOR OF PIPE IS WETTED PRIOR TO TESTING.
6. WHERE FLEXIBLE PIPE IS USED, CONTRACTOR SHALL TEST ALL MAINLINE PIPE FOR MAXIMUM ALLOWABLE DEFLECTION OF 5% OF OUTSIDE DIAMETER. DEFLECTION TESTS SHALL BE PERFORMED USING A CIRCULAR STEEL BALL ON SLED 1/16-INCH IN DIAMETER SMALLER THAN ALLOWABLE INSIDE DIAMETER OF FLEXIBLE PIPE WHEN DEFLECTED A MAXIMUM OF 5% OF OUTSIDE DIAMETER. DEFLECTION TESTING OF ANY PIPE SHALL BE DONE NO SOONER THAN 30 DAYS AFTER DATE OF INSTALLATION OF PIPE SECTION UNLESS WRITTEN EXCEPTION.
7. SEWERS SHALL BE LAID WITH STRAIGHT ALIGNMENT BETWEEN MANHOLES. STRAIGHT ALIGNMENT SHALL BE CHECKED EITHER USING A LASER BEAM OR LAMPING. TESTING SHALL COMPLY WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
8. MANHOLES, WHICH CANNOT BE PROPERLY AIR TESTED, SHOULD BE VISUALLY INSPECTED AND LEAKAGE-TESTED USING INTERNAL OR EXTERNAL HYDROSTATIC PRESSURE. LEAKAGE TESTING SHALL COMPLY WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
9. IN AREAS WHERE CONVENTIONAL TESTING IS IMPRACTICAL (I.E. AREAS DESIGNATED BY ENGINEER WHERE EXISTING SERVICES ARE TIED INTO NEW LINE IMMEDIATELY AND ANY BLOCKAGE COULD RESULT IN HEALTH PROBLEMS) NO LINES SHALL BE BACKFILLED UNTIL EACH PIPE SECTION AND CONNECTION IS INSPECTED AND APPROVED.
10. WHERE SEWERS ARE CONSTRUCTED OF PRESSURE-RATED PIPE AND INSTALLED WITH LESS THAN 18 INCHES VERTICAL SEPARATION FROM EXISTING OR PROPOSED WATER MAINS, SEWERS SHALL BE HYDROSTATICALLY TESTED AT 150 PSI TO ASSURE WATER TIGHTNESS. HYDROSTATIC ACCEPTANCE TESTS SHALL BE CONDUCTED AS SPECIFIED FOR TESTING WATER MAINS, EXCEPT THAT TESTING MAY BE PERFORMED WITH THE PIPE SECTION PARTIALLY BACK-FILLED.
11. IF THE ALLOWABLE RATE OF AIR LEAKAGE IS EXCEEDED, THE CONTRACTOR SHALL LOCATE POINTS OF EXCESSIVE LEAKAGE AND SHALL PROMPTLY CORRECT, REPAIR, AND BRING SYSTEM UP TO THE STANDARD. COSTS OF ALL SUCH REPAIRS AND CORRECTIVE MEASURES, INCLUDING COSTS OF REPEATED TESTS, SHALL BE BORN BY CONTRACTOR, THE SEWER LINE SECTION (INCLUDING MANHOLES AND BUILDING SERVICES) UNDER TEST SHALL NOT BE ACCEPTED UNTIL THESE TEST CRITERIA ARE MET.
12. SANITARY MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH ASTM C1244. A VACUUM OF 10 INCHES OF Hg SHOULD BE DRAWN ON THE MANHOLE AFTER ALL HOLES ARE PLUGGED, AND INLETS/OUTLETS ARE TEMPORARILY PLUGGED AND SECURED. THE TIME IS MEASURED FOR THE VACUUM TO DROP TO 9 INCHES Hg. THE MANHOLE IS ACCEPTED IF THE MEASURED TIME MEETS OR EXCEEDS THE VALVES PRESENTED IN TABLE 1 OF ASTM C1244. IF THE MANHOLE FAILS THE INITIAL TEST, IT SHALL BE REPAIRED BY AN APPROVED METHOD UNTIL A SATISFACTORY TEST IS OBTAINED. MANHOLES, WHICH CANNOT BE PROPERLY AIR TESTED, SHOULD BE VISUALLY INSPECTED AND LEAKAGE-TESTED USING INTERNAL OR EXTERNAL HYDROSTATIC PRESSURE. LEAKAGE TESTING SHALL COMPLY WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

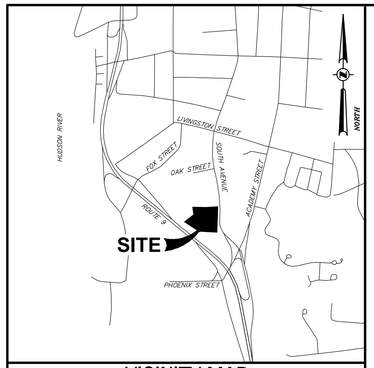
WATER MAIN DISINFECTION NOTES:

1. APPROVED AND TESTED WATER MAIN SHALL BE DISINFECTED PER A.W.W.A. SECTION C651, LATEST EDITION. TABLET OR POWDERED METHOD IS NOT ALLOWED.
2. THE CONTRACTOR SHALL NOTIFY THE MUNICIPALITY AND THE PROJECT ENGINEER 48 HOURS PRIOR TO DISINFECTING THE SERVICE LINES.
3. DISINFECTED WATER MUST REMAIN IN THE WATER MAINS FOR A MINIMUM OF 24 HOURS BEFORE BEING THOROUGHLY FLUSHED OUT.
4. WATER SERVICE LINES SHALL BE DISINFECTED AS PER AWWA SECTION C651 WHERE:
   A. CHLORINE CONCENTRATION IN WATER LINES SHALL BE NO LESS THAN 50 MG/L AT START OF 24-HOUR TEST.
   B. CHLORINE RESIDUAL SHALL BE NO LESS THAN 10 MG/L AT END OF TEST.
5. PRIOR TO RECEIVING CERTIFICATE OF OCCUPANCY, MICROBIOLOGICAL SAMPLES SHALL BE COLLECTED FROM BOTH ENDS AND THE MIDDLE OF EACH NEW LINE. ALL LINES SHALL NOT BE USED UNTIL MICROBIOLOGICAL SAMPLES ARE ACCEPTED BY THE CITY OF POUGHKEEPSIE. RESULTS OF ALL MICROBIOLOGICAL TESTING SHALL BE SUBMITTED TO THE CITY OF POUGHKEEPSIE ALONG WITH ENGINEER'S CERTIFICATE OF COMPLETION.

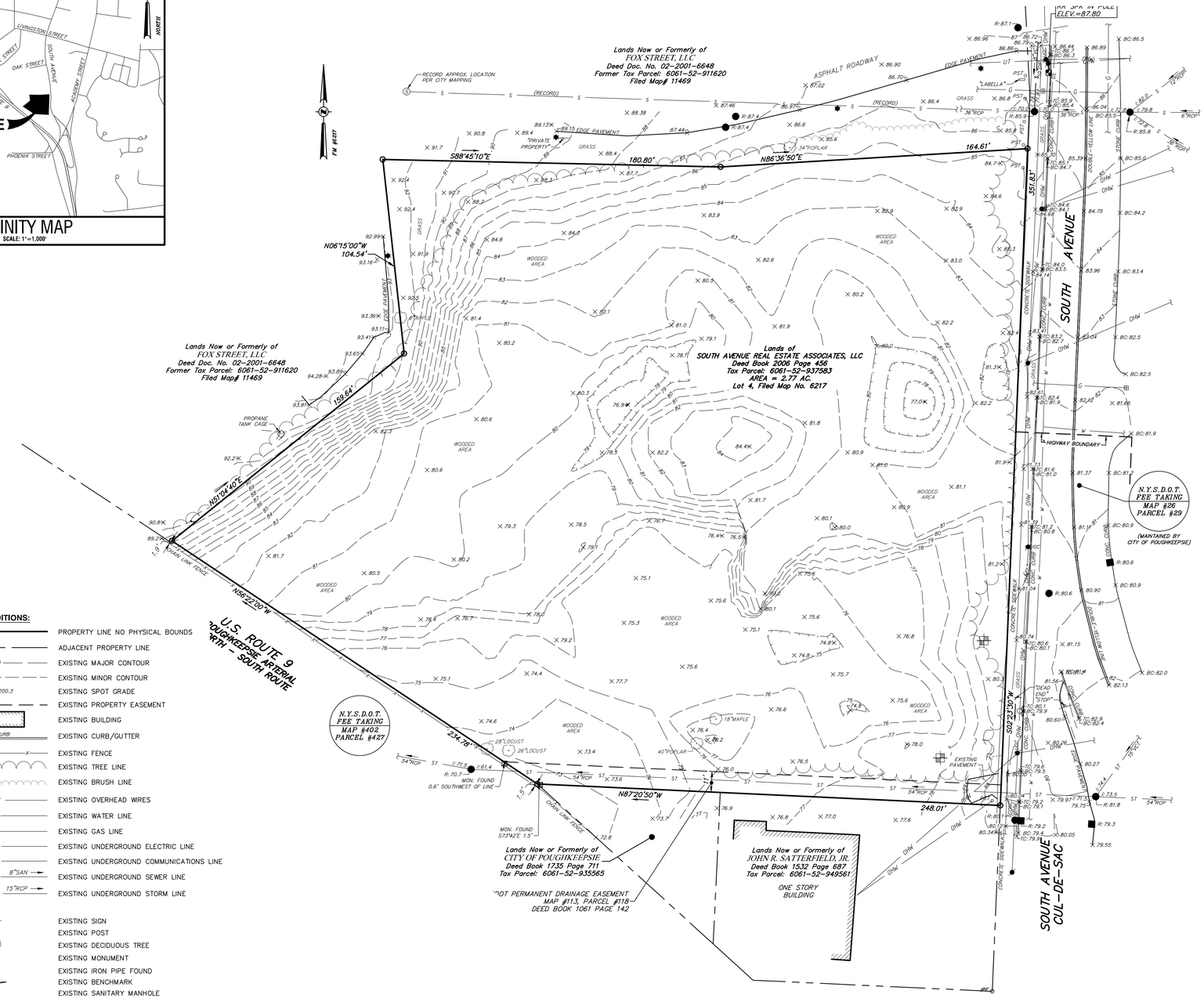
TESTING WATER MAINS:

1. AFTER TRENCH HAS BEEN BACKFILLED, HYDROSTATIC ACCEPTANCE TESTS, CONSISTING OF A PRESSURE TEST AND A LEAKAGE TEST, SHALL BE PERFORMED ON ALL SECTIONS OF WATER MAINS INSTALLED. LEAKAGE TEST SHALL BE CONDUCTED CONCURRENTLY WITH PRESSURE TEST. TEST SECTION SHALL BE LIMITED TO 1,500 FT (MAX.). TESTS SHOULD BE CONDUCTED TO FIRST VALVE IN BUILDING.
2. AFTER ALL TESTS AND INSPECTIONS HAVE BEEN PERFORMED EVIDENCE OF COMPLIANCE SHALL BE FORWARDED TO OWNER/ENGINEER AND THE CITY OF POUGHKEEPSIE PRIOR TO ACCEPTANCE.
3. ALL WATER FOR TESTS SHALL BE FURNISHED AND DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. SOURCE AND/OR QUALITY OF WATER WHICH THE CONTRACTOR PROPOSES TO USE IN TESTING LINES SHALL BE ACCEPTABLE TO THE ENGINEER.
4. HYDROSTATIC PRESUMPTIVE TESTS MAY BE PERFORMED WHEN SYSTEM IS PARTIALLY BACKFILLED TO SIMPLY CHECK WORK, BUT ACCEPTANCE OF SYSTEM SHALL BE BASED ON HYDROSTATIC TESTS RUN ON FINISHED SYSTEM AFTER IT HAS BEEN COMPLETELY BACKFILLED. ALL HYDROSTATIC TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C 600 OR LATER ADDITION, AS MODIFIED HEREIN.
5. FOR THE PRESSURE TEST, SYSTEM SHALL BE PRESSURIZED AND MAINTAINED AT A MINIMUM OF 150 POUNDS PER SQUARE INCH, OR 1.5 TIMES THE WORKING PRESSURE, WHICHEVER IS GREATER, BASED ON THE ELEVATION OF THE LOWEST POINT IN THE SECTION BEING TESTED AND CORRECTED TO THE ELEVATION OF THE GAUGE. PROVISIONS SHALL BE MADE TO RELIEVE AIR TRAPPED AT HIGH POINTS IN THE SYSTEM THROUGH ADJACENT HYDRANTS OR THROUGH TAPS AND CORPORATION STOPS INSTALLED FOR THIS PURPOSE BY THE CONTRACTOR. AFTER SAID PRESSURE HAS BEEN MAINTAINED SUCCESSFULLY, WITH FURTHER PUMPING AS REQUIRED, FOR A PERIOD OF AT LEAST TWO HOURS, THE SECTION UNDER TEST SHALL BE CONSIDERED TO HAVE PASSED THE PRESSURE TEST.
6. LEAKAGE TEST SHALL BE PERFORMED CONCURRENTLY USING A MINIMUM TEST PRESSURE OF 150 LBS/SQUARE INCH, OR 1.5 TIMES THE WORKING PRESSURE, WHICHEVER IS GREATER, BASED ON THE ELEVATION OF THE LOWEST POINT IN THE SECTION UNDER TEST AND CORRECTED TO ELEVATION OF THE GAUGE. LEAKAGE TEST DURATION SHALL BE A MINIMUM OF 2 HOURS AFTER LEAKAGE RATE HAS STABILIZED.
7. MAXIMUM ALLOWABLE LEAKAGE SHALL BE AS SHOWN IN THE FOLLOWING TABLE:
   ALLOWABLE LEAKAGE PER 1000 FT (305M) OF PIPELINE (GPH)

| AVG.



VICINITY MAP
SCALE: 1"=1,000'



LEGEND:

EXISTING CONDITIONS:

- PROPERTY LINE NO PHYSICAL BOUNDS
- ADJACENT PROPERTY LINE
- 110 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- × 200.3 EXISTING SPOT GRADE
- EXISTING PROPERTY EASEMENT
- EXISTING BUILDING
- CONC. CURB EXISTING CURB/GUTTER
- X X X EXISTING FENCE
- EXISTING TREE LINE
- EXISTING BRUSH LINE
- OHW EXISTING OVERHEAD WIRES
- W EXISTING WATER LINE
- G EXISTING GAS LINE
- UE EXISTING UNDERGROUND ELECTRIC LINE
- UT EXISTING UNDERGROUND COMMUNICATIONS LINE
- S 8"SAN EXISTING UNDERGROUND SEWER LINE
- ST 15"RCP EXISTING UNDERGROUND STORM LINE

SYMBOLS:

- EXISTING SIGN
- PST EXISTING POST
- EXISTING DECIDUOUS TREE
- EXISTING MONUMENT
- IPF EXISTING IRON PIPE FOUND
- EXISTING BENCHMARK
- S EXISTING SANITARY MANHOLE
- D EXISTING DRAINAGE MANHOLE
- C EXISTING CATCH BASIN
- E EXISTING ELECTRIC MANHOLE
- E EXISTING ELECTRIC BOX
- EXISTING GUY WIRE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- UGC EXISTING CONDUIT TO/FROM UNDERGROUND
- EXISTING GAS VALVE
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING TEST PIT

ABBREVIATIONS:

- × BC: 200.3 EXISTING SPOT GRADE BOTTOM CURB
- × TC: 200.3 EXISTING SPOT GRADE TOP CURB
- × R: 216.3 EXISTING RIM ELEVATION
- × I: 200.3 EXISTING INVERT ELEVATION

1 SV1 EXISTING CONDITIONS SURVEY
SCALE: 1" = 30'

NOTES:

UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

SURVEYED WITHOUT THE BENEFIT OF A TITLE SEARCH.

SUBJECT TO COVENANTS, EASEMENTS, RESTRICTIONS, CONDITIONS AND AGREEMENTS OF RECORD.

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SUBSURFACE STRUCTURES NOT VISIBLE OR READILY APPARENT ARE NOT SHOWN AND THEIR LOCATION AND EXTENT ARE NOT CERTIFIED.

TOPOGRAPHY SHOWN HEREON WAS COMPILED FROM A FIELD SURVEY COMPLETED SEPTEMBER 26, 2022 BY LABELLA ASSOCIATES PC, DATUM NAVD-88, 1 FOOT CONTOUR INTERVAL.

NORTH ORIENTATION IS PER FILED MAP NO. 6217, SEE FILED MAP REFERENCE NO. 1 BELOW.

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

THE CONTRACTOR SHALL COMPLY WITH NEW YORK STATE INDUSTRIAL CODE RULE 753 - 48 HOURS PRIOR TO DIGGING CALL DIGSAFELY NEW YORK 1-800-962-7962 TO HAVE PUBLIC UTILITY LOCATIONS PAINTED.

FILED MAP REFERENCE:

1. REFERENCE IS HEREBY MADE TO A CERTAIN MAP ENTITLED "SUBDIVISION PLAT BENDERSON DEVELOPMENT CO. INC., SITUATE IN THE CITY OF POUGHKEEPSIE DUTCHESS CO., N.Y." AND FILED IN THE DUTCHESS COUNTY CLERK'S OFFICE ON OCTOBER 6, 1981 AS FILED MAP NO. 6217.
2. REFERENCE IS HEREBY MADE TO A CERTAIN MAP ENTITLED "FOX STREET, LLC. SUBDIVISION PLAT OF LANDS OF FOX STREET, LLC., CITY OF POUGHKEEPSIE, DUTCHESS COUNTY, NEW YORK" AND FILED IN THE DUTCHESS COUNTY CLERK'S OFFICE ON NOVEMBER 1, 2002 AS FILED MAP NO. 11469.

DEED REFERENCE:

1. CITY OF POUGHKEEPSIE TO SOUTH AVENUE REAL ESTATE ASSOCIATES, LLC, DATED FEBRUARY 18, 1998 AND RECORDED IN THE DUTCHESS COUNTY CLERK'S OFFICE ON MARCH 10, 1998 AS LIBER 2006 OF DEEDS AT PAGE 456.

TAX PARCEL DESIGNATION:

CITY OF POUGHKEEPSIE, DUTCHESS COUNTY, NEW YORK
6061-52-937583

AREA:

2.77 AC.

FLOOD ZONE NOTE:

PARCEL IS SHOWN TO LIE WITHIN "OTHER AREAS, ZONE X" AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) FOR THE CITY OF POUGHKEEPSIE, IDENTIFIED AS MAP NUMBER 36027C0358E, BEARING AN EFFECTIVE DATE OF MAY 2, 2012.

David H. Dippel, L.S. NYS #050677

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THIS SURVEY MAP IS BASED ON AN ACTUAL FIELD SURVEY COMPLETED ON OCTOBER 4, 2022 AND THAT THIS SURVEY MAP WAS MADE BY ME OR UNDER MY DIRECTION, AND CONFORMS WITH THE MINIMUM STANDARD OF PRACTICE ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS.

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Poughkeepsie, NY 12601
(845) 454-3980

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ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

SOUTH AVE
MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

30 0 30
SCALE IN FEET
1"=30'

NO:	DATE:	DESCRIPTION:
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY: FJM
REVIEWED BY: DHD
ISSUED FOR:
DATE: 10/04/2022
DRAWING NAME:

MAP OF EXISTING CONDITIONS PREPARED FOR ARGO DEVELOPMENT

DRAWING NUMBER:

SV1

11/16/2022 9:04:27 AM
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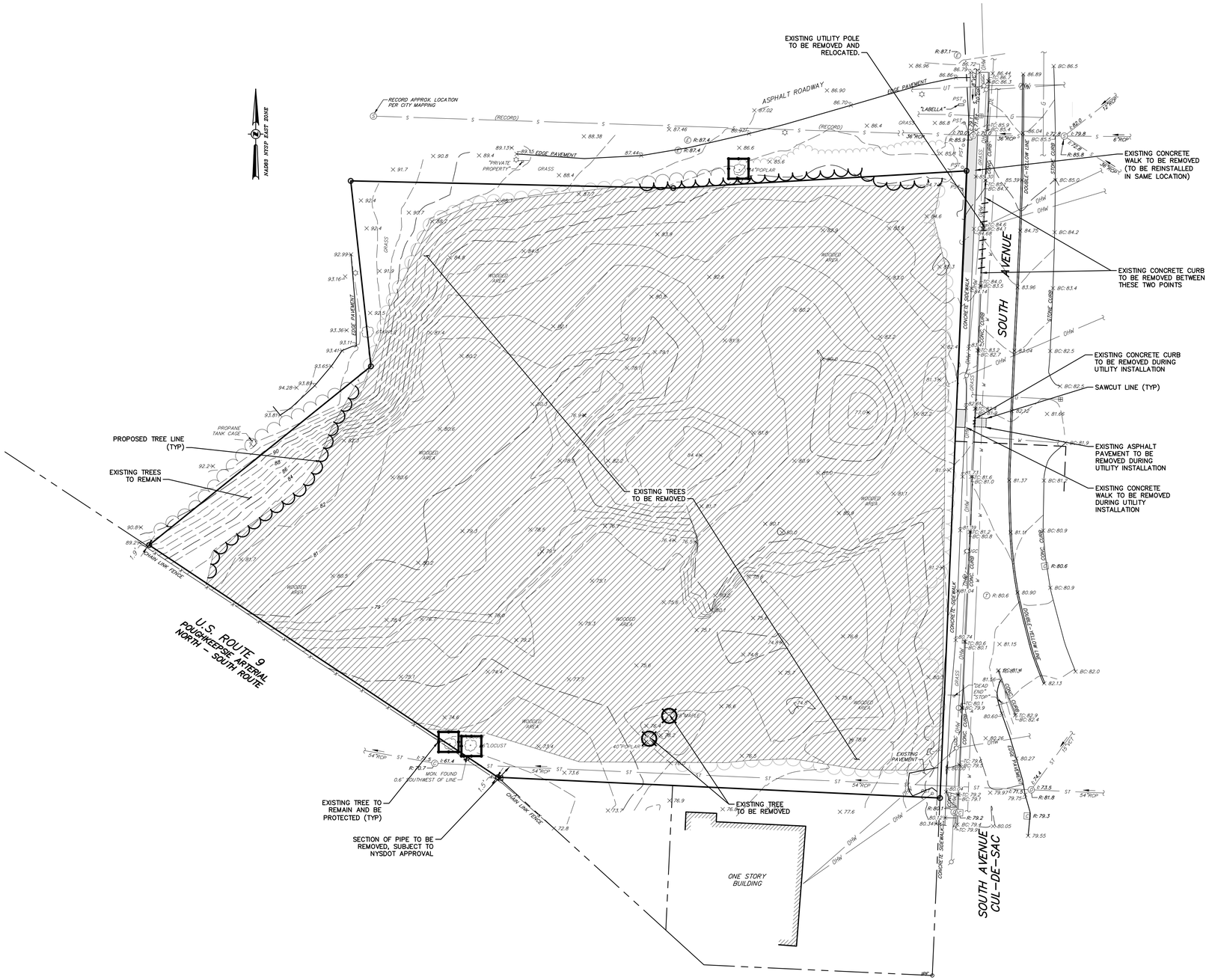

1 C-120 DEMOLITIONS PLAN
SCALE: 1" = 30'

LEGEND:

- EXISTING FEATURE TO BE REMOVED
- EXISTING TREE TO BE REMOVED
- EXISTING SITE FEATURE TO BE REMOVED
- EXISTING PAVEMENT & SIDEWALK TO BE REMOVED
- EXISTING BUILDING TO BE REMOVED
- WORKLIMITS
- TREE PROTECTION FENCING
- N.I.C. NOT IN CONTRACT
- EXISTING STRUCTURE TO BE REMOVED, N.I.C
- PAVEMENT SAWCUT LINE

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STATE OF NEW YORK
CHRISTOPHER PAUL LAFAVE
079470
LICENSED PROFESSIONAL ENGINEER

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE
MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
2	03/07/23	REVISED PER PLANNING BOARD COMMENTS
1	01/27/23	REVISED PER CITY COMMENTS
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

DEMOLITION PLAN

DRAWING NUMBER:

C120

3/7/2023 1:20:39 PM
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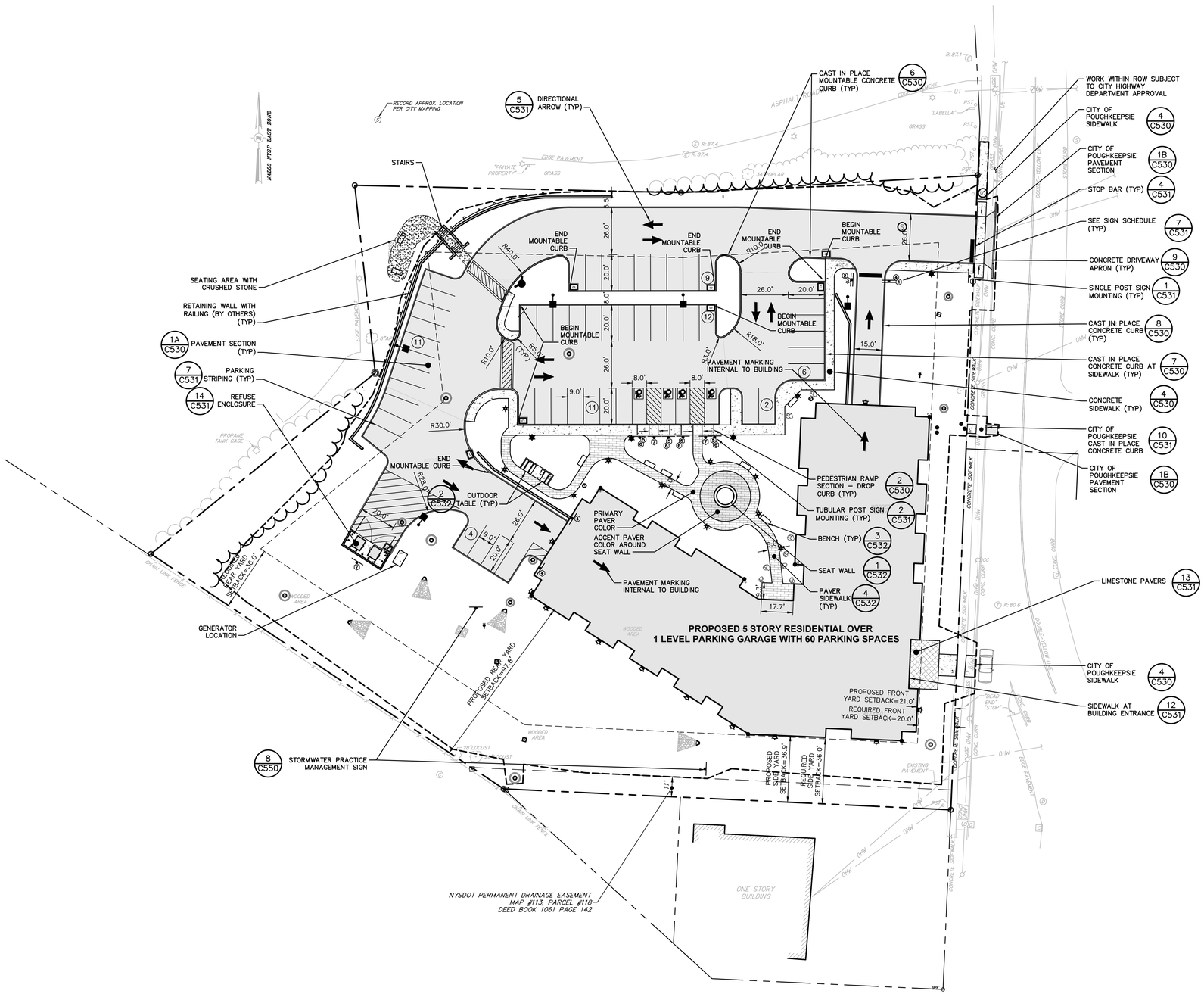
Date Printed: Mar 07, 2023, 1:20pm



1 C-130 SITE PLAN
SCALE: 1" = 30'

SITE LEGEND:

- PROPERTY LINE
- SETBACK LINE
- BUILDING
- PAVEMENT
- ROAD CENTER LINE
- SIDEWALK
- CURB
- WORK LIMITS
- CONCRETE SURFACE
- ROAD LINING & STRIPING
- SIGN
- 2 POSTED SIGN
- BOLLARD
- MAILBOX
- PARKING COUNT

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
2	03/07/23	REVISED PER PLANNING BOARD COMMENTS
1	01/27/23	REVISED PER CITY COMMENTS
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

SITE PLAN

DRAWING NUMBER:

C130

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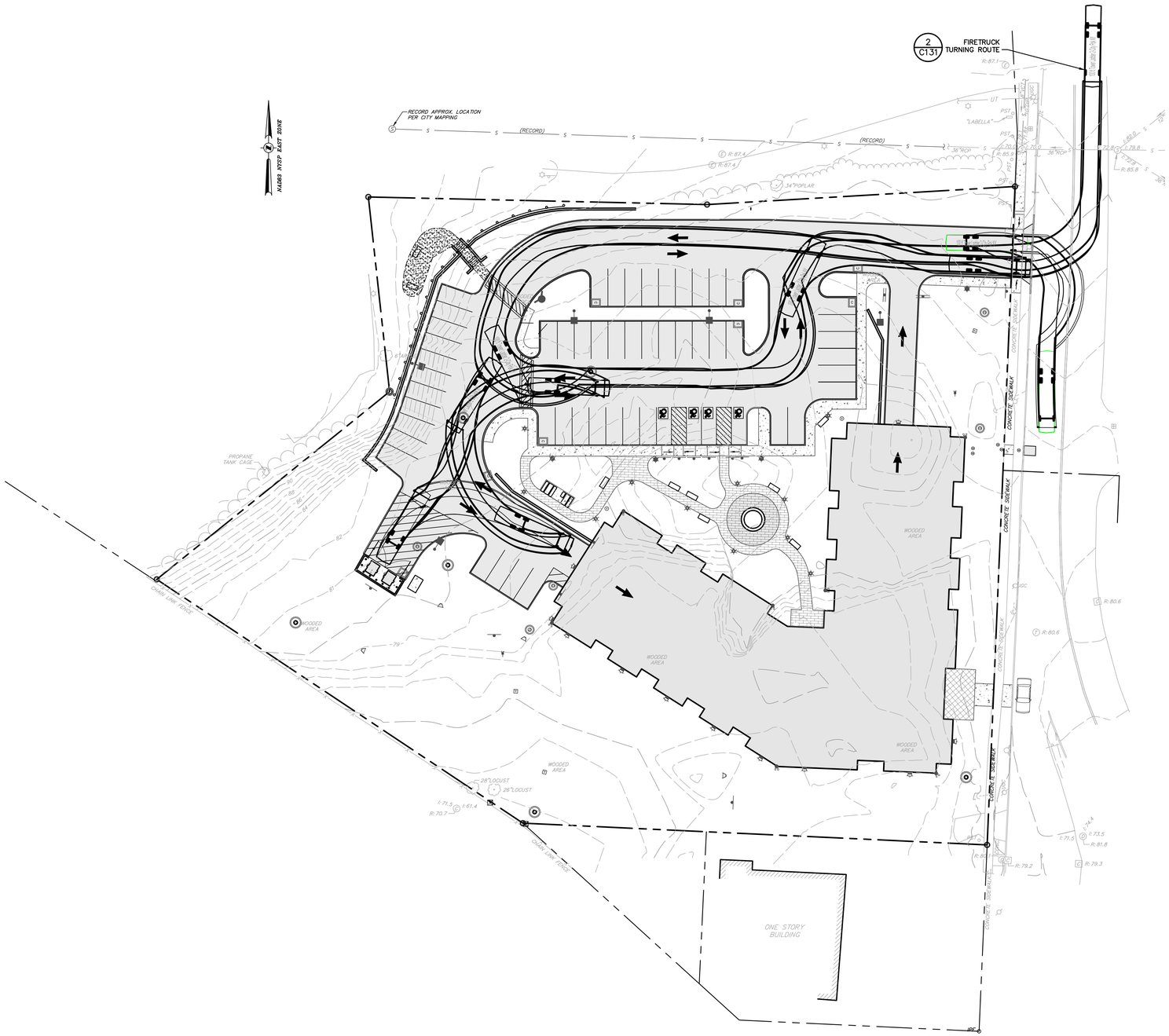

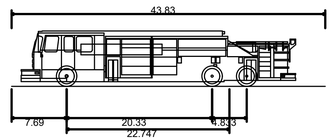

100 ft Tower Ladder 2-City Pok NY

Overall Length	43.830ft
Overall Width	8.167ft
Overall Body Height	7.745ft
Min Body Ground Clearance	0.656ft
Track Width	8.167ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	35.440ft

2 / C-131 CITY OF POUGHKEEPSIE LADDER TRUCK

SCALE: NTS

1 / C-131 TRUCK MANEUVERING PLAN

SCALE: 1" = 30'

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE
MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
1	01/27/23	REVISED PER CITY COMMENTS
Revisions		

PROJECT NUMBER: 2222201

DRAWN BY:

REVIEWED BY: CPL

ISSUED FOR: PLANNING BOARD REVIEW

DATE: 11/28/2022

DRAWING NAME:

TRUCK MANEUVERING PLAN

DRAWING NUMBER:

C131

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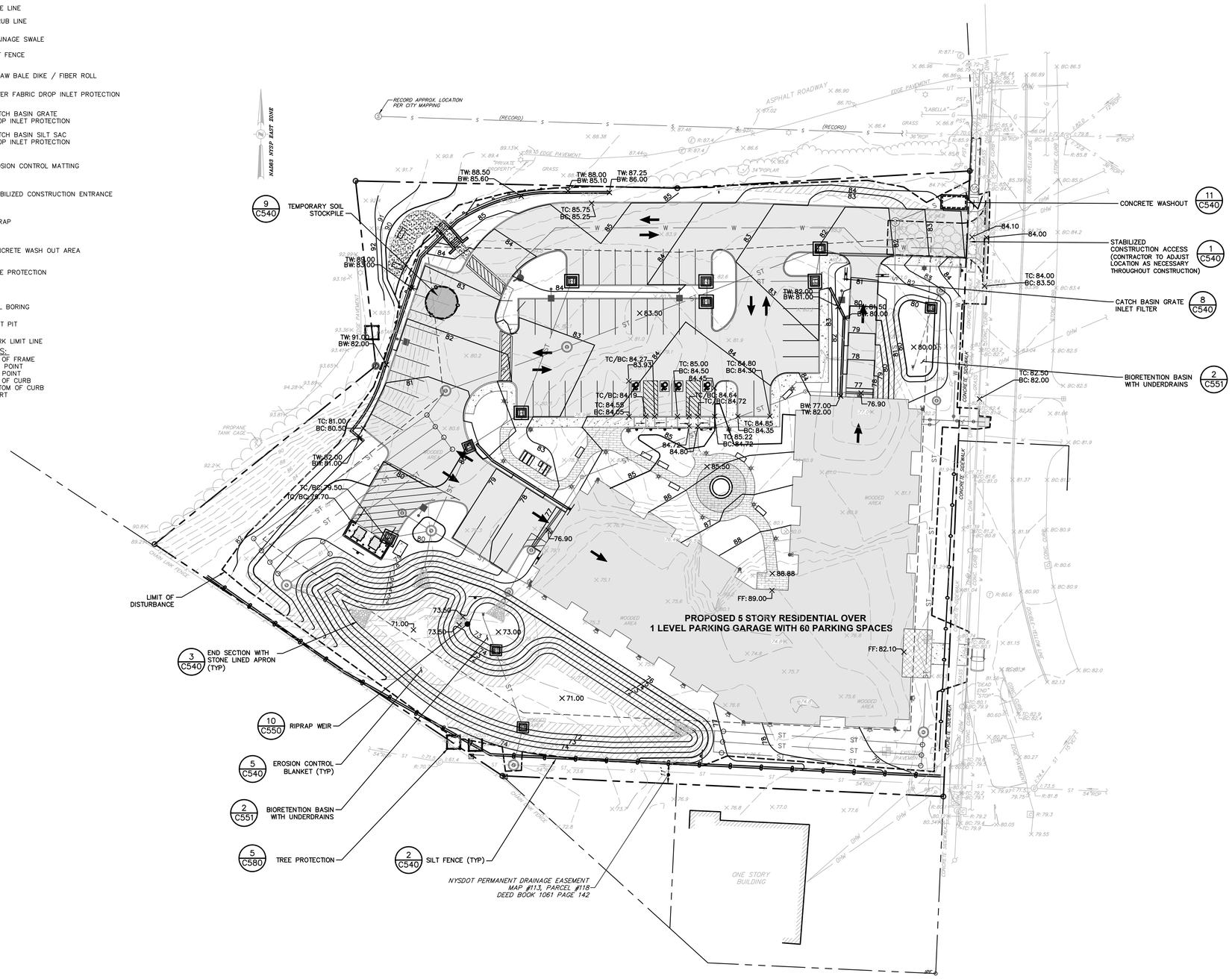
Date Printed: Mar 07, 2023, 1:21pm

ESC AND GRADING LEGEND:

- PROPERTY LINE
- BUILDING
- XXX — 10 FT CONTOUR
- XXX — 2 FT CONTOUR
- XXX.X — SPOT GRADE
- TREE LINE
- SHRUB LINE
- DRAINAGE SWALE
- SILT FENCE
- STRAW BALE DIKE / FIBER ROLL
- FILTER FABRIC DROP INLET PROTECTION
- CATCH BASIN GRATE DROP INLET PROTECTION
- CATCH BASIN SILT SAC DROP INLET PROTECTION
- EROSION CONTROL MATTING
- STABILIZED CONSTRUCTION ENTRANCE
- RIPRAP
- CONCRETE WASH OUT AREA
- TREE PROTECTION
- SOIL BORING
- TEST PIT
- WORK LIMIT LINE

ABBREVIATIONS:

TF	TOP OF FRAME
HP	HIGH POINT
LP	LOW POINT
TC	TOP OF CURB
BC	BOTTOM OF CURB
INV	INVERT



1 C-140 GRADING AND EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 30'

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE
MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
1	01/27/23	REVISIONS PER CITY COMMENTS
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

GRADING AND EROSION & SEDIMENT CONTROL PLAN

DRAWING NUMBER:

C140

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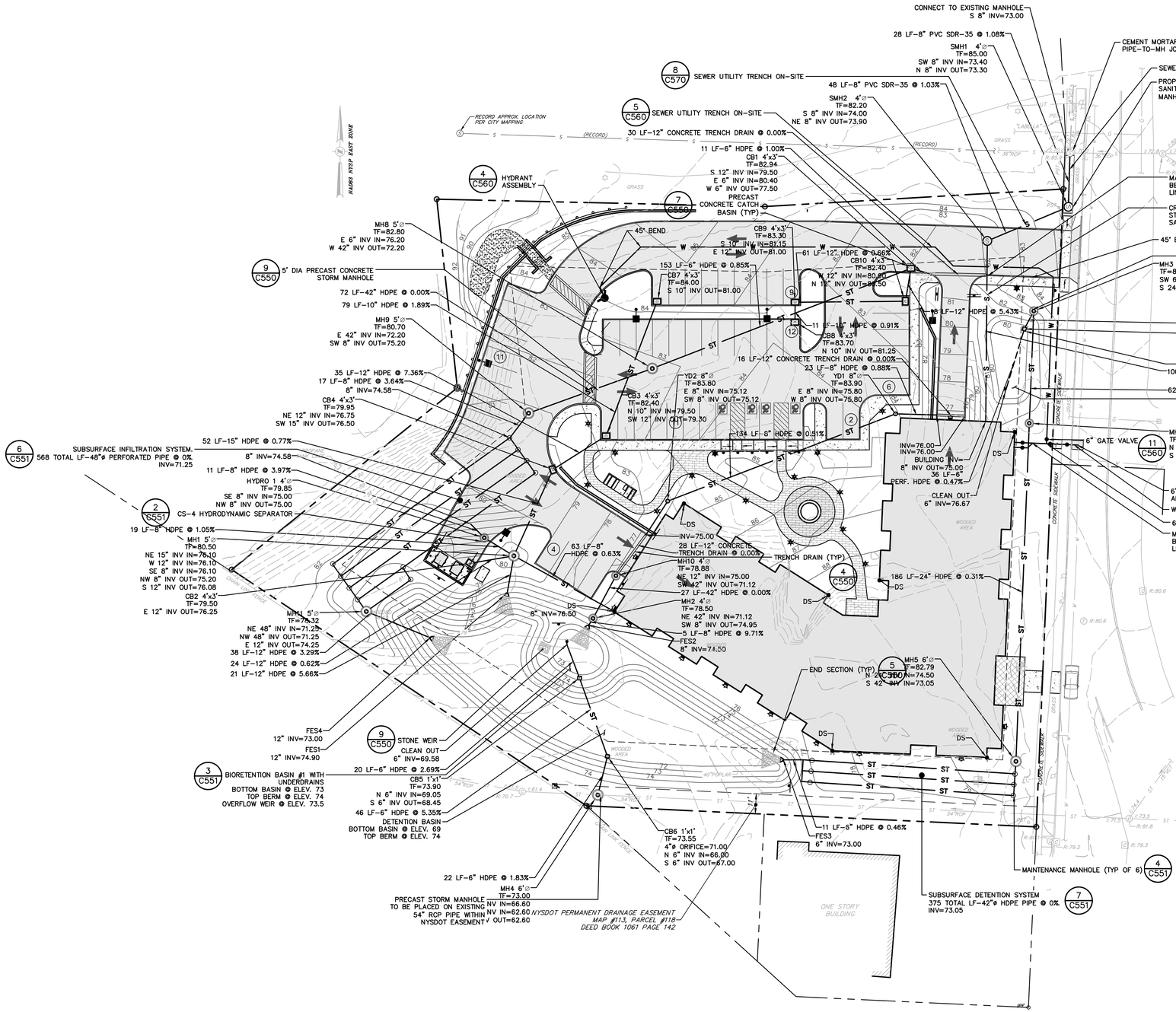

1 C-160 UTILITY PLAN
SCALE: 1" = 30'

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE
MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
2	03/07/23	REVISED PER PLANNING BOARD COMMENTS
1	01/27/23	GENERAL REVISIONS
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

UTILITY PLAN

DRAWING NUMBER:

C160

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Date Printed: Mar 07, 2023, 1:22pm

LANDSCAPING & LIGHTING LEGEND:

PROPOSED BUILDING

PROPOSED TREE LINE

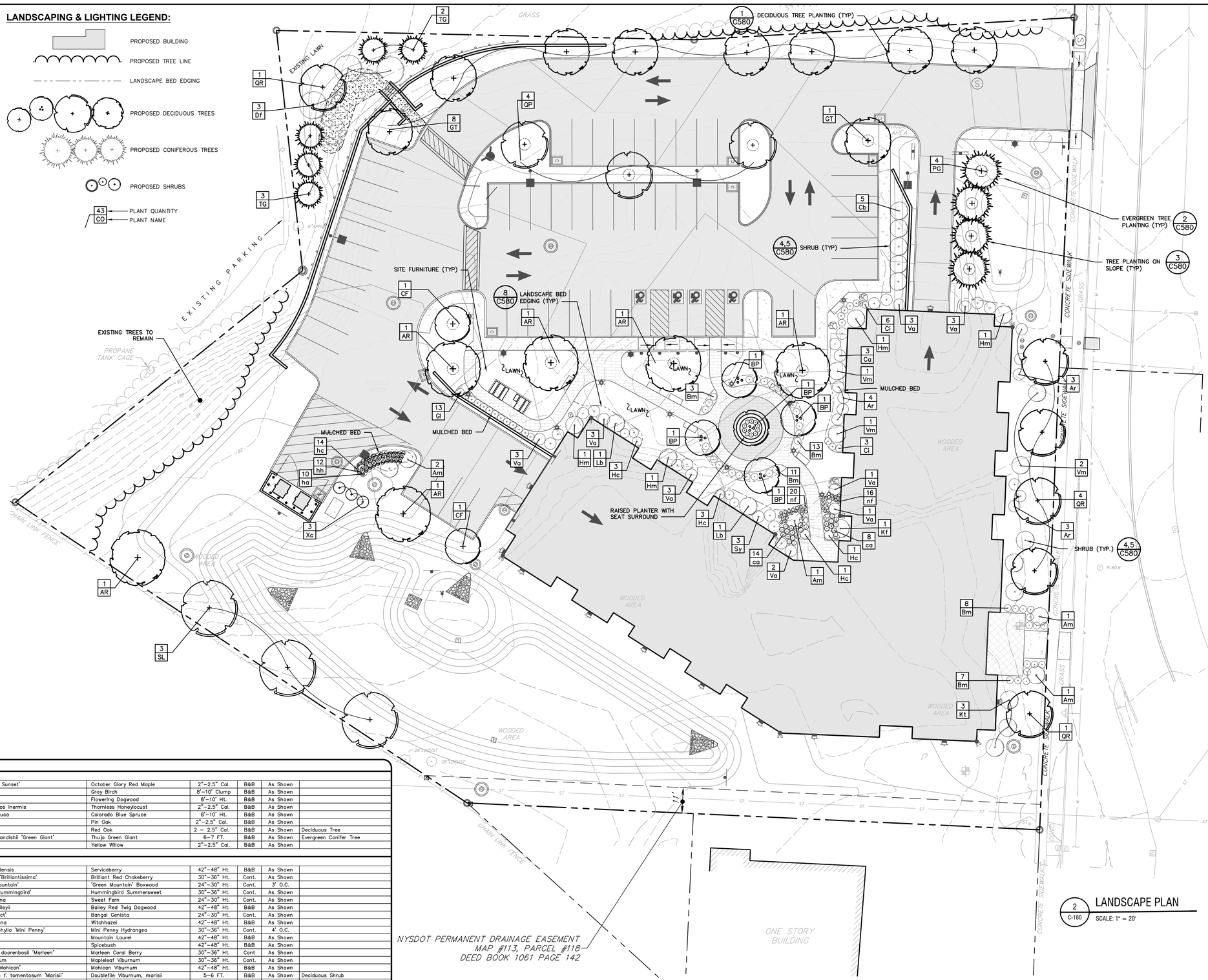
LANDSCAPE BED EDGING

PROPOSED DECIDUOUS TREES

PROPOSED CONIFEROUS TREES

PROPOSED SHRUBS

43 CO — PLANT QUANTITY / PLANT NAME



2 C-180 LANDSCAPE PLAN
SCALE: 1" = 20'

PLANT LIST

QTY	ABRV						
TREES							
6	AR	Acer rubrum 'Red Sunset'	October Glory Red Maple	2"–2.5" Cal.	B&B	As Shown	
5	BP	Betula populifolia	Gray Birch	8'–10' Clump	B&B	As Shown	
2	CF	Cornus florida	Flowering Dogwood	8'–10' Ht.	B&B	As Shown	
9	GT	Gleditsia triacanthos inermis	Thornless Honeylocust	2"–2.5" Cal.	B&B	As Shown	
4	PG	Picea pungens glauca	Colorado Blue Spruce	8'–10' Ht.	B&B	As Shown	
3	QP	Quercus palustris	Pin Oak	2"–2.5" Cal.	B&B	As Shown	
6	QR	Quercus rubra	Red Oak	2 – 2.5" Cal.	B&B	As Shown	Deciduous Tree
5	TG	Thuja plicata x standishii 'Green Giant'	Thuja Green Giant	6–7 FT.	B&B	As Shown	Evergreen Conifer Tree
3	SL	Salix Lutea	Yellow Willow	2"–2.5" Cal.	B&B	As Shown	
SHRUBS							
5	Am	Amelanchier canadensis	Serviceberry	42"–48" Ht.	B&B	As Shown	
10	Ar	Aronia arbutifolia 'Brilliantissima'	Brilliant Red Chokeberry	30"–36" Ht.	Cont.	As Shown	
41	Bm	Buxus x 'Green Mountain'	'Green Mountain' Boxwood	24"–30" Ht.	Cont.	3' O.C.	
3	Ca	Clethra alnifolia 'Hummingbird'	Hummingbird Summersweet	30"–36" Ht.	Cont.	As Shown	
9	Ci	Comptonia peregrina	Sweet Fern	24"–30" Ht.	Cont.	As Shown	
5	Cb	Cornus sericea baileyii	Bailey Red Twig Dogwood	42"–48" Ht.	B&B	As Shown	
13	Gl	Genista lydia 'Select'	Bangal Genista	24"–30" Ht.	Cont.	As Shown	
4	Hm	Hamamelis virginiana	Witchhazel	42"–48" Ht.	B&B	As Shown	
8	Hc	Hydrangea macrophylla 'Mini Penny'	Mini Penny Hydrangea	30"–36" Ht.	Cont.	4' O.C.	
1	7	Kalmia latifolia	Mountain Laurel	42"–48" Ht.	B&B	As Shown	
2	Lb	Lindera benzoin	Spicebush	42"–48" Ht.	B&B	As Shown	
3	Sy	Symphoricarpos x doorenbosii 'Marleen'	Marleen Coral Berry	30"–36" Ht.	Cont	As Shown	
19	Va	Viburnum acerifolium	Mapleleaf Viburnum	30"–36" Ht.	Cont.	As Shown	
4	Vm	Viburnum latana 'Mohican'	Mohican Viburnum	42"–48" Ht.	B&B	As Shown	
3	Df	Viburnum plicatum f. tomentosum 'Marisii'	Doublefile Viburnum, marisii	5–6 FT.	B&B	As Shown	Deciduous Shrub
3	Xc	Ilex crenata 'Steeds'	Steeds Upright Holly	6 FT.	B&B	As Shown	
PERNNIALS/GRASSES							
36	nm	Adiantum pedatum	Northern Maidenhair Fern	#3	Cont.	24" O.C.	mulched bed
22	ca	Calamagrostis x acutiflora 'Karl Foerster'	Foerster's Feather Reed Grass	#3	Cont.	As Shown	
13	hc	Hemerocallis 'Happy Returns'	Happy Returns Dwarf Daylily	#3	Cont.	18" O.C.	White & Purple Flowering Variety
12	hh	Hemerocallis 'Hyperion'	Hyperion Daylily	#3	Cont.	24" O.C.	Canary yellow, mid / late summe
11	ha	Hemerocallis 'Autumn Accent'	Autumn Accent Daylily	#3	Cont.	24" O.C.	crimson, late summer bloom
10	pa	Pennisetum alopcuroides 'Hameln'	Hameln Fountain Grass	#3	Cont.	24" O.C.	

1 C-180 PLANT LIST
SCALE: NTS

* ALL DISTURBED AREAS NOT SPECIFICALLY CALLED OUT FOR NEW IMPROVEMENTS SHALL BE TOPSOILED, SEEDED WITH LAWN SEED MIX, & MULCHED (TYP)

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE
MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
2	03/07/23	REVISED PER PLANNING BOARD COMMENTS
1	01/27/23	REVISED PER CITY COMMENTS
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

LANDSCAPE PLAN

DRAWING NUMBER:

C180

LEGEND:

- PROPOSED BUILDING
- WALL MOUNTED LIGHT
- POST–TOP MOUNTED LUMINAIRE / POLE
- POST AND LUMINAIRE
- CEILING–MOUNTED CANOPY LIGHT FIXTURE
- $\times^{1.2}$ FOOT CANDLE SPOT VALUES AT GROUND
- PHOTOMETRIC CONTOUR, FOOT CANDLE VALUE
- EXISTING UTILITY POLE
- BLC BACK–LIGHT SHIELD, ALSO KNOWN AS A "HOUSE–SIDE"SHIELD
- P LIGHT POLE
- PT LIGHT POLE, W POST–TOP FIXTURE
- W WALL MOUNTED
- C FIXTURE MOUNTED UNDER CANOPY

NOTE:

1. WALL MOUNTED FIXTURE SHALL BE INSTALLED WITH THE LIGHT IN THE DOWNWARD POSITION.

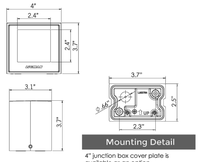
WALL MOUNTED LUMINAIRE:
MANUFACTURER: LIGMAN LIGHTING
MODEL: ULEE–30001 LEEDS 2 SMALL SURFACE DOWNLIGHT
ADA DARK SKY APPROVED, FULL CUT–OFF
WARM WHITE (2700K), AND AMBER

4 C190 WALL MOUNTED LIGHTING FIXTURE DETAIL
SCALE: NTS

LIGHTING NOTES:

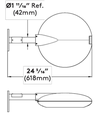
1. PROPOSED LIGHTING AS MANUFACTURED BY GARDCO/SIGNIFY LIGHTING, SELUX LIGHTING, AND LIGMAN LIGHTING.
2. GRID NUMBERS SHOWN REPRESENT FOOT CANDLE VALUES AT GROUND PLANE.
3. THE LIGHTING FIXTURES, SURFACE LOCATIONS AND ASSOCIATED PHOTOMETRIC VALUES ARE IDENTIFIED BY LABELLA ASSOCIATES. DETAILED DESIGN OF THE LIGHTING SPECIFICATIONS, LIGHTING CONDUIT, WIRING, AND CONTROL CIRCUITRY SHALL BE BY OTHERS.
4. IF DISCREPANCIES EXIST BETWEEN THE LIGHTING SCHEDULE AND LIGHTING PLAN, THE PLAN SHALL DICTATE.
5. THE EXISTING STREET LIGHTS IN THE RIGHT–OF–WAYS HAVE NOT BEEN INCLUDED IN THIS PHOTOMETRIC ANALYSIS. THE LIGHT LEVELS SHOWN HEREON REFLECT THE PROPOSED LIGHTING ON SITE.
6. EXISTING AND PROPOSED UTILITIES NOT SHOWN ON THIS SHEET FOR CLARITY. REFER TO SHEET C160 FOR UTILITY PLANS.
7. ALL LIGHTING FIXTURES SHALL BE FULL CUT–OFF.
8. PER CITY OF POUGHKEEPSIE CODE, ALLOWABLE LIGHT LEVEL AT PROPERTY BOUNDARY IS ____ FOOTCANDLES.

5.5w LED 570 Lumens
IP65 - Suitable For Wet Locations
IK07 - Impact Resistant
Weight 1.7 lbs



4" junction box cover plate is available as an option

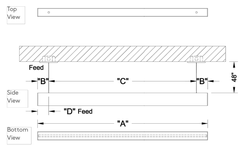
SW Short Arm Wall
EPA = 0.39ft² (0.04m²)
Weight = 23lbs. (10kg)



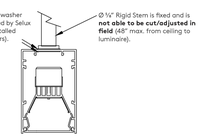
WALL MOUNTED LUMINAIRE:
SELUX LIGHTING
DISCERA 4, SHORT ARM WALL MOUNT
ADA DARK SKY APPROVED, FULL CUT–OFF
WARM WHITE (3000 K)

3 C190 WALL MOUNTED LIGHTING FIXTURE DETAIL
SCALE: NTS

Rigid Stem Mounting (RS)

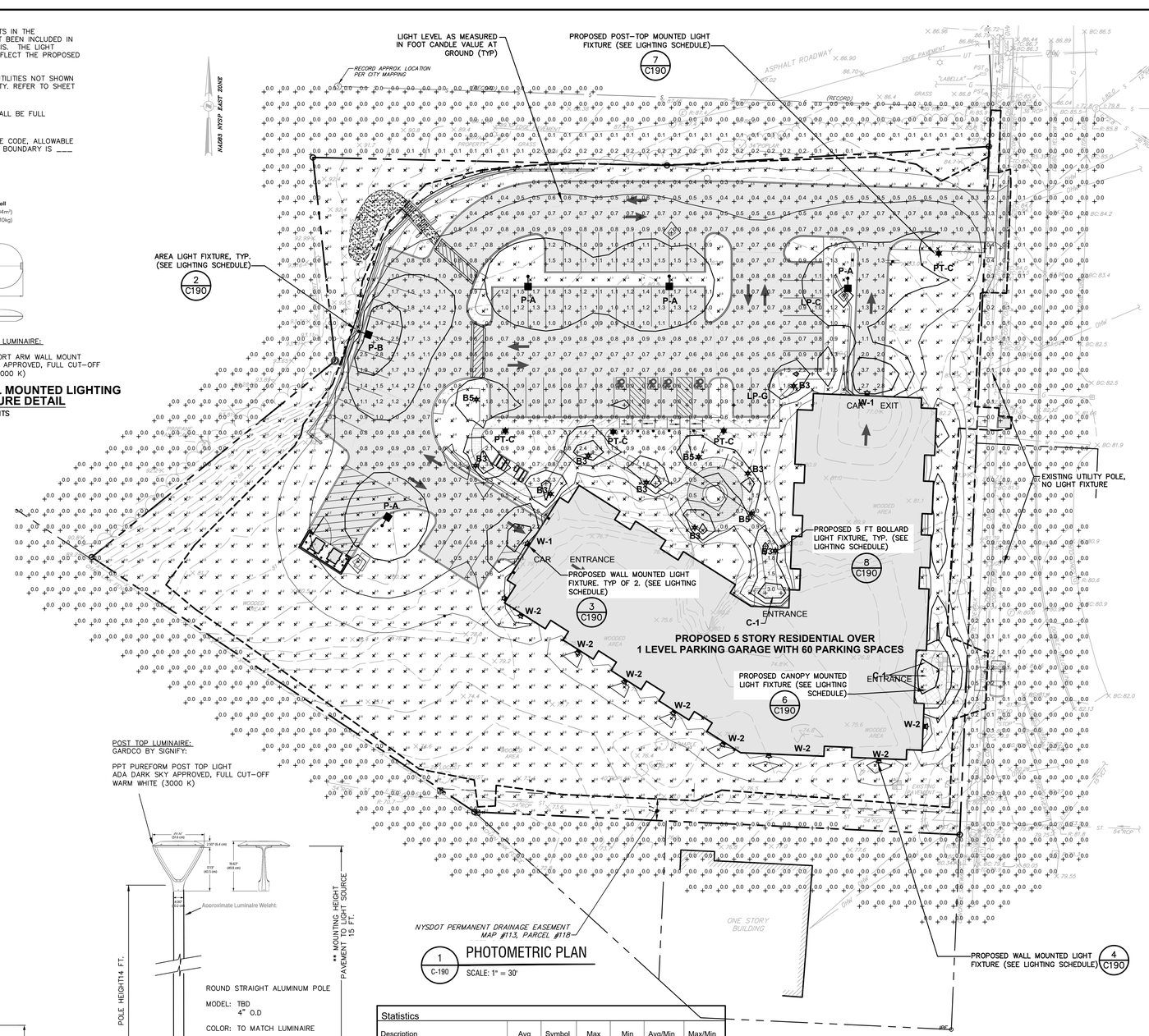


Rigid Stem Mounting (RS)



WALL MOUNTED LUMINAIRE:
SELUX LIGHTING
M60, SHORT ARM WALL MOUNT
ADA DARK SKY APPROVED, FULL CUT–OFF
WARM WHITE (3000 K)

6 C190 CANOPY MOUNTED LIGHTING FIXTURE DETAIL
SCALE: NTS



1 C-190 PHOTOMETRIC PLAN
SCALE: 1" = 30'

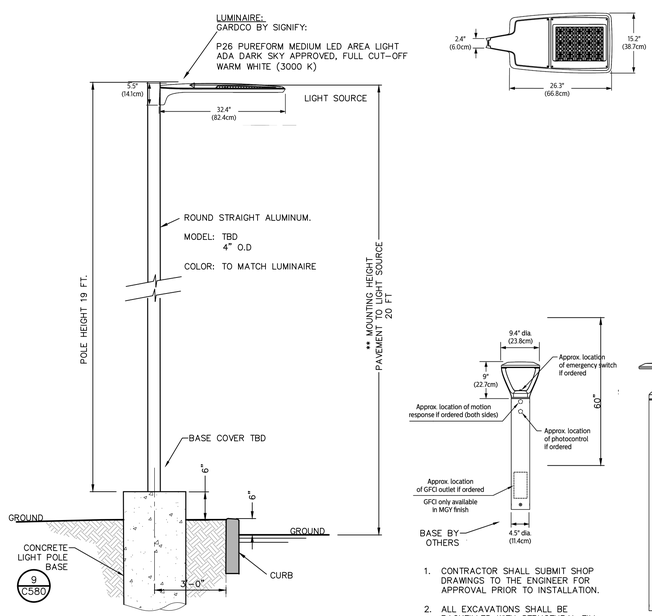
Statistics

Description	Avg	Symbol	Max	Min	Avg/Min	Max/Min
Stat Zone # 1_TO PROPERTY LINE	0.6 fc	×	7.1 fc	0.0 fc	N/A	N/A
Stat Zone # 2_PAVEMENT	0.9 fc	+	3.7 fc	0.0 fc	N/A	N/A
Stat Zone # 3_PED. WALK at BLDG	1.2 fc	+	3.4 fc	0.5 fc	2.4:1	6.8:1

Schedule

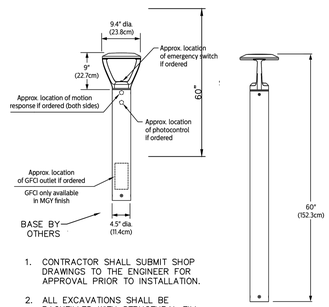
Label	QTY	MOUNT HEIGHT	POLE LENGTH	Manufacturer	Catalog	Description	Number Lamps	Lamp Output LUMINS	LLF	Input Power WATTS	Notes
P-A	4	20 FT	19 FT	PHILIPS GARDCO	P26-48L-400-WW-G2-5	PureForm Gen2 - Area Medium (P26), 48 LED's, 3000K CCT, TYPE 5 OPTIC,	1	7917	0.95	60.07694	Post and Arm
P-B	1	20 FT	19 FT	PHILIPS GARDCO	P26-48L-400-WW-G2-BLC	PureForm Gen2 - Area Medium (P26), 48 LED's, 3000K CCT, TYPE BLC OPTIC, .	1	5872	0.95	60.07694	Post and Arm, Back Lgt Cutoff
PT-C	4	15 FT	14FT	GARDCO	PPT-196L-450-WW-G2-5--UNV	PPT Pureform Post Top, 196 LED's, 3000K CCT, TYPE 5 OPTIC, Comfort Light Engine, 80CRI	1	2127	0.95	20.9	Post Top
B-3	8	4.9 FT		SIGNIFY GARDCO	PBL-14L-100-NW-G2-3-UNV	Pureform Gen2 - PBL Bollard, Type 3. 3000K	1	492	0.95	6.1	Bollard
B-5	3	4.9 FT		SIGNIFY GARDCO	PBL-14L-100-NW-G2-5-UNV	Pureform Gen2 - PBL Bollard, Type 5. 3000K	1	538	0.95	6.1	Bollard
W-1	2	12 FT.		Selux Corporation	DSC4Lx-R3-5G350-30-XX-XX-UNV-HS	Discera 4, Type 3. 3000K CCT	1	2473	0.95	32	wall mount at parking entrance and exit
W-2	9	12 FT.		LIGMAN	ULEE-30011-EW-Amber	Leeds One side	2	197	0.95	10.4	wall mount
C-1	4	12 FT.		Selux Corporation	L60W-1C20-35-LW-X-04--XX-UNV	M60 LED Direct Wet Location	1	1658	0.95	19.3	suspended under entrance canopy

LUMINAIRE:
GARDCO BY SIGNIFY:
P26 PUREFORM MEDIUM LED AREA LIGHT
ADA DARK SKY APPROVED, FULL CUT–OFF
WARM WHITE (3000 K)



2 C190 AREA LIGHTING FIXTURE DETAIL
SCALE: N.T.S.

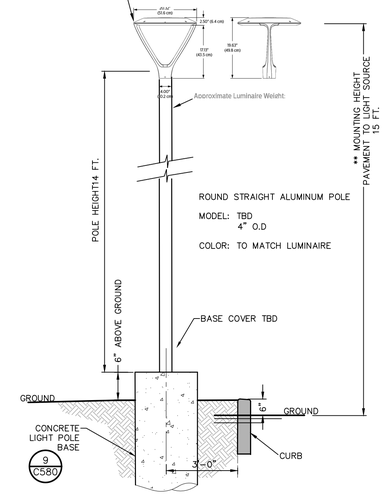
NOTES: 1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
2. ALL EXCAVATIONS SHALL BE BACKFILLED WITH STRUCTURAL FILL AND COMPACTED TO 95% OF MAXIMUM MATERIAL DENSITY.
3. ELECTRICAL POWER SUPPLY, WIRE, AND CONDUIT BY OTHERS.



1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
2. ALL EXCAVATIONS SHALL BE BACKFILLED WITH STRUCTURAL FILL AND COMPACTED TO 95% OF MAXIMUM MATERIAL DENSITY.
3. ELECTRICAL POWER SUPPLY, WIRE, AND CONDUIT BY OTHERS.

8 C190 BOLLARD DETAIL
SCALE: N.T.S.

POST TOP LUMINAIRE:
GARDCO BY SIGNIFY:
PPT PUREFORM POST TOP LIGHT
ADA DARK SKY APPROVED, FULL CUT–OFF
WARM WHITE (3000 K)



NOTES: CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
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7 C190 PEDESTRIAN SCALE LIGHTING FIXTURE DETAIL
SCALE: N.T.S.

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APPLICANT NAME & ADDRESS:
ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:
SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

2	03/07/23	REVISED PER PLANNING BOARD COMMENTS
1	01/27/23	REVISED PER CITY COMMENTS
NO:	DATE:	DESCRIPTION:
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

PHOTOMETRIC PLAN

DRAWING NUMBER:

C190

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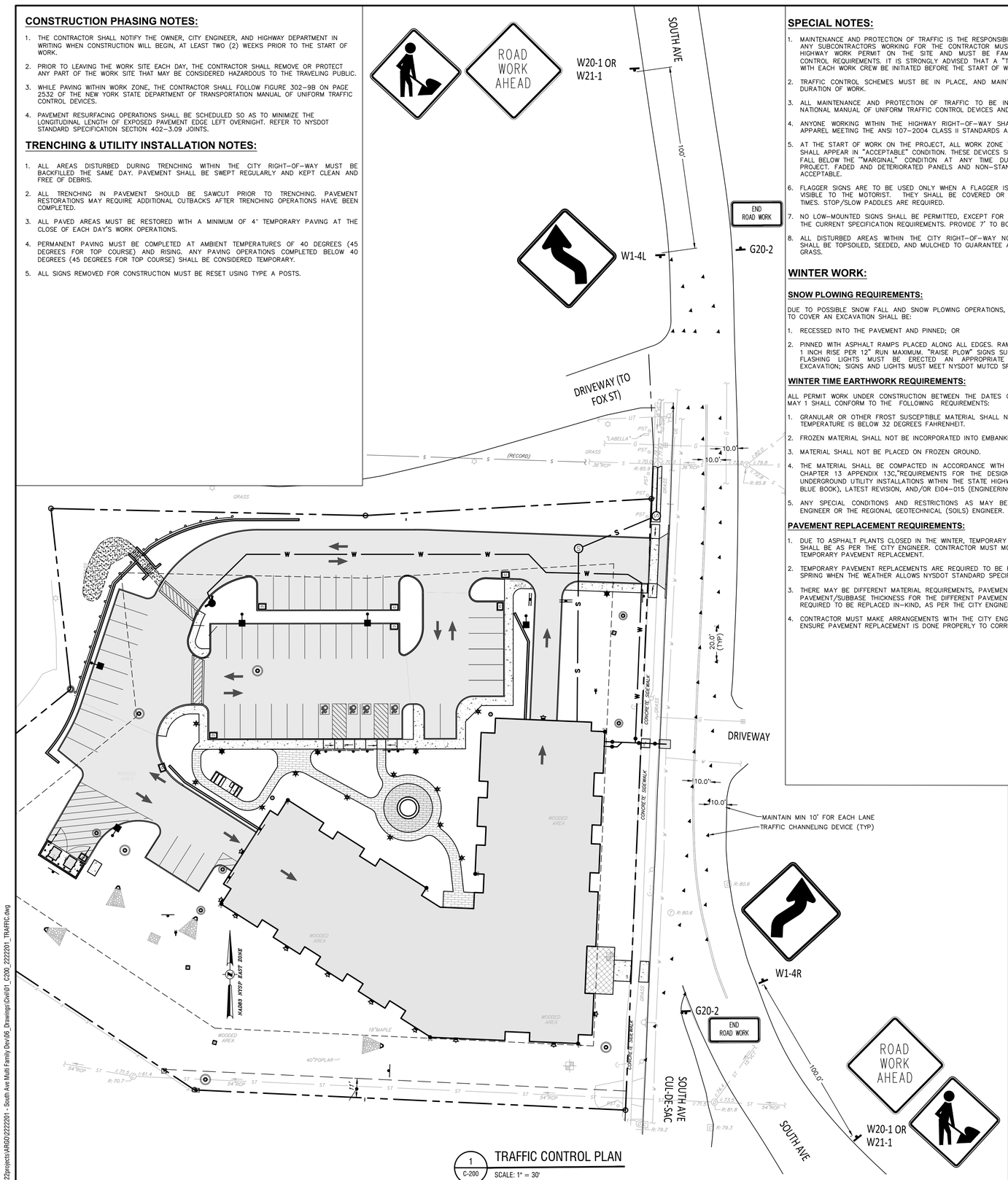
Drawing Name: Z:\2022projects\ARGO\2222201 - South Ave Multi Family Dev\06_Drawings\Civil\01_C190_2222201_PHOTO.dwg
Xref's Attached: XBORDER_2222201; XLAYOUT-2222201; XPHOTOMTRC-2222201; XBASE-ENG_2222201
Date Printed: Mar 07, 2023, 1:23pm

CONSTRUCTION PHASING NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE OWNER, CITY ENGINEER, AND HIGHWAY DEPARTMENT IN WRITING WHEN CONSTRUCTION WILL BEGIN, AT LEAST TWO (2) WEEKS PRIOR TO THE START OF WORK.
2. PRIOR TO LEAVING THE WORK SITE EACH DAY, THE CONTRACTOR SHALL REMOVE OR PROTECT ANY PART OF THE WORK SITE THAT MAY BE CONSIDERED HAZARDOUS TO THE TRAVELING PUBLIC.
3. WHILE PAVING WITHIN WORK ZONE, THE CONTRACTOR SHALL FOLLOW FIGURE 302-9B ON PAGE 2532 OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
4. PAVEMENT RESURFACING OPERATIONS SHALL BE SCHEDULED SO AS TO MINIMIZE THE LONGITUDINAL LENGTH OF EXPOSED PAVEMENT EDGE LEFT OVERNIGHT. REFER TO NYSDOT STANDARD SPECIFICATION SECTION 402-3.09 JOINTS.

TRENCHING & UTILITY INSTALLATION NOTES:

1. ALL AREAS DISTURBED DURING TRENCHING WITHIN THE CITY RIGHT-OF-WAY MUST BE BACKFILLED THE SAME DAY. PAVEMENT SHALL BE SWEPT REGULARLY AND KEPT CLEAN AND FREE OF DEBRIS.
2. ALL TRENCHING IN PAVEMENT SHOULD BE SAWCUT PRIOR TO TRENCHING. PAVEMENT RESTORATIONS MAY REQUIRE ADDITIONAL CUTBACKS AFTER TRENCHING OPERATIONS HAVE BEEN COMPLETED.
3. ALL PAVED AREAS MUST BE RESTORED WITH A MINIMUM OF 4" TEMPORARY PAVING AT THE CLOSE OF EACH DAY'S WORK OPERATIONS.
4. PERMANENT PAVING MUST BE COMPLETED AT AMBIENT TEMPERATURES OF 40 DEGREES (45 DEGREES FOR TOP COURSE) AND RISING. ANY PAVING OPERATIONS COMPLETED BELOW 40 DEGREES (45 DEGREES FOR TOP COURSE) SHALL BE CONSIDERED TEMPORARY.
5. ALL SIGNS REMOVED FOR CONSTRUCTION MUST BE RESET USING TYPE A POSTS.



1 C-200 TRAFFIC CONTROL PLAN
SCALE: 1" = 30'

SPECIAL NOTES:

1. MAINTENANCE AND PROTECTION OF TRAFFIC IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY SUBCONTRACTORS WORKING FOR THE CONTRACTOR MUST HAVE A COPY OF THE HIGHWAY WORK PERMIT ON THE SITE AND MUST BE FAMILIAR WITH THE TRAFFIC CONTROL REQUIREMENTS. IT IS STRONGLY ADVISED THAT A "TAILGATE" SAFETY MEETING WITH EACH WORK CREW BE INITIATED BEFORE THE START OF WORK.
2. TRAFFIC CONTROL SCHEMES MUST BE IN PLACE, AND MAINTAINED, THROUGHOUT THE DURATION OF WORK.
3. ALL MAINTENANCE AND PROTECTION OF TRAFFIC TO BE IN ACCORDANCE WITH THE NATIONAL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND THE NYS SUPPLEMENT.
4. ANYONE WORKING WITHIN THE HIGHWAY RIGHT-OF-WAY SHALL WEAR HIGH-VISIBILITY APPAREL MEETING THE ANSI 107-2004 CLASS II STANDARDS AND A HARD HAT.
5. AT THE START OF WORK ON THE PROJECT, ALL WORK ZONE TRAFFIC CONTROL DEVICES SHALL APPEAR IN "ACCEPTABLE" CONDITION. THESE DEVICES SHALL NOT BE ALLOWED TO FALL BELOW THE "MARGINAL" CONDITION AT ANY TIME DURING THE LIFE OF THE PROJECT. FADED AND DETERIORATED PANELS AND NON-STANDARD LEGENDS ARE NOT ACCEPTABLE.
6. FLAGGER SIGNS ARE TO BE USED ONLY WHEN A FLAGGER IS ACTUALLY PRESENT AND VISIBLE TO THE MOTORIST. THEY SHALL BE COVERED OR REMOVED AT ALL OTHER TIMES. STOP/SLOW PADDLES ARE REQUIRED.
7. NO LOW-MOUNTED SIGNS SHALL BE PERMITTED, EXCEPT FOR FLEXIBLE PANELS MEETING THE CURRENT SPECIFICATION REQUIREMENTS. PROVIDE 7' TO BOTTOM OF SIGN.
8. ALL DISTURBED AREAS WITHIN THE CITY RIGHT-OF-WAY NOT RECEIVING HARDSCAPE SHALL BE TOPSOILED, SEEDED, AND MULCHED TO GUARANTEE AN ACCEPTABLE STAND OF GRASS.

WINTER WORK:

SNOW PLOWING REQUIREMENTS:

DUE TO POSSIBLE SNOW FALL AND SNOW PLOWING OPERATIONS, ANY STEEL PLATES USED TO COVER AN EXCAVATION SHALL BE:

1. RECESSED INTO THE PAVEMENT AND PINNED; OR
2. PINNED WITH ASPHALT RAMPS PLACED ALONG ALL EDGES. RAMPS SHALL BE SLOPED AT 1 INCH RISE PER 12" RUN MAXIMUM. "RAISE PLOW" SIGNS SUPPLEMENTED WITH TYPE A FLASHING LIGHTS MUST BE ERECTED AN APPROPRIATE DISTANCE BEFORE THE EXCAVATION; SIGNS AND LIGHTS MUST MEET NYSDOT MUTCD SPECIFICATIONS.

WINTER TIME EARTHWORK REQUIREMENTS:

ALL PERMIT WORK UNDER CONSTRUCTION BETWEEN THE DATES OF NOVEMBER 1 THROUGH MAY 1 SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

1. GRANULAR OR OTHER FROST SUSCEPTIBLE MATERIAL SHALL NOT BE PLACED WHEN THE TEMPERATURE IS BELOW 32 DEGREES FAHRENHEIT.
2. FROZEN MATERIAL SHALL NOT BE INCORPORATED INTO EMBANKMENTS OR BACKFILLS.
3. MATERIAL SHALL NOT BE PLACED ON FROZEN GROUND.
4. THE MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH HIGHWAY DESIGN MANUAL CHAPTER 13 APPENDIX 13C,"REQUIREMENTS FOR THE DESIGN AND CONSTRUCTION OF UNDERGROUND UTILITY INSTALLATIONS WITHIN THE STATE HIGHWAY RIGHT-OF-WAY" (AKA BLUE BOOK), LATEST REVISION, AND/OR EI04-015 (ENGINEERING INSTRUCTION).
5. ANY SPECIAL CONDITIONS AND RESTRICTIONS AS MAY BE IMPOSED BY THE CITY ENGINEER OR THE REGIONAL GEOTECHNICAL (SOILS) ENGINEER.

PAVEMENT REPLACEMENT REQUIREMENTS:

1. DUE TO ASPHALT PLANTS CLOSED IN THE WINTER, TEMPORARY PAVEMENT REPLACEMENTS SHALL BE AS PER THE CITY ENGINEER. CONTRACTOR MUST MONITOR AND MAINTAIN THE TEMPORARY PAVEMENT REPLACEMENT.
2. TEMPORARY PAVEMENT REPLACEMENTS ARE REQUIRED TO BE REPLACED IN-KIND IN THE SPRING WHEN THE WEATHER ALLOWS NYSDOT STANDARD SPECIFICATIONS TO BE MET.
3. THERE MAY BE DIFFERENT MATERIAL REQUIREMENTS, PAVEMENT/SUBBASE COURSES AND PAVEMENT/SUBBASE THICKNESS FOR THE DIFFERENT PAVEMENT AREAS. ALL AREAS ARE REQUIRED TO BE REPLACED IN-KIND, AS PER THE CITY ENGINEER.
4. CONTRACTOR MUST MAKE ARRANGEMENTS WITH THE CITY ENGINEER FOR FIELD VISIT TO ENSURE PAVEMENT REPLACEMENT IS DONE PROPERLY TO CORRECT THICKNESS.

WORK ZONE TRAFFIC CONTROL GENERAL NOTES:

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC (M&PT) FOR THE DURATION OF THE CONTRACT. M&PT SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING DOCUMENTS:
   A. THE HIGHWAY ENTRANCE PLANS, DETAILS, AND REQUIREMENTS SET FORTH IN THE PLANS AND/OR PROPOSAL OF THIS CONTRACT.
   B. THE MOST CURRENT EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
   C. NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS – CHAPTER 19 WORK ZONE TRAFFIC CONTROL.
   D. NYSDOT STANDARD SHEETS FOR WORK ZONE TRAFFIC CONTROL FOR LONG TERM OPERATION – 619 SERIES FOR LONG TERM OPERATIONS. I.E THE WORK ZONE IS IN EFFECT FOR OVERNIGHT.
   E. NYSDOT WORK ZONE TRAFFIC CONTROL MANUAL FOR SHORT TERM OPERATIONS, I.E THE WORK ZONE IS IN EFFECT ONLY DURING THE DAY AND IS NOT MAINTAINED OVERNIGHT.
2. THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) IS DEFINED AS THE NATIONAL MUTCD FOR STREETS AND HIGHWAYS (US DEPARTMENT OF TRANSPORTATION/FEDERAL HIGHWAY ADMINISTRATION) AS MODIFIED BY THE NEW YORK STATE SUPPLEMENT TO THE NATIONAL MUTCD. WHEN MUTCD IS NOTED IT REFERS TO THE MOST CURRENT EDITION.
3. THE TYPICAL DETAILS DEPICTED ON THE NYSDOT STANDARD SHEETS AND IN THE MUTCD, REFLECT MINIMUM REQUIREMENTS. ADDITIONAL DEVICES AND/OR METHODS OF TRAFFIC CONTROL MAY BE ORDERED BY THE ENGINEER TO MEET FIELD CONDITIONS.
4. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, IN WRITING, WITH THE NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF STAFF WHO ARE AUTHORIZED TO SECURE LABOR, MATERIALS, AND EQUIPMENT FOR EMERGENCY REPAIRS OUTSIDE OF NORMAL WORKING HOURS. THE ENGINEER SHALL PROVIDE THE SUBMITTED INFORMATION TO THE CITY ENGINEER AND HIGHWAY DEPARTMENT, THE NEW YORK STATE POLICE, AND THE LOCAL POLICE.
5. PROPOSED REVISIONS TO ANY WORK OCCURRING WITHIN THE CITY RIGHT-OF-WAY MUST BE SUBMITTED FOR APPROVAL BY THE CONTRACTOR TO THE CITY ENGINEER. PROPOSED REVISIONS MUST BE SUBMITTED FIVE (5) WORK DAYS PRIOR TO THE PLANNED IMPLEMENTATION OF THE PROPOSED REVISIONS.
6. THE CONTRACTOR SHALL PROVIDE A TENTATIVE SCHEDULE OF OPERATIONS TO THE DESIGN ENGINEER AND ALL LOCAL AUTHORITIES AND EMERGENCY SERVICE PROVIDERS TWO WEEKS BEFORE BEGINNING CONSTRUCTION ACTIVITIES. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE NOTIFICATION OF CHANGES TO THE PREVIOUS WORK PLAN/WORK LOCATIONS. PROVISIONS SHALL BE MADE AT THE PRE-CONSTRUCTION MEETING OR OTHER MEETING PRIOR TO THE START OF WORK BETWEEN THE CONTRACTOR, LOCAL AUTHORITIES AND EMERGENCY SERVICE PROVIDERS TO ADDRESS A SITUATION WHEN EMERGENCY ACCESS IS NEEDED THROUGH A CONSTRUCTION OPERATION WITHIN THE CONTRACT LIMITS.

ACTIVITY AREA

1. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 500' LONGITUDINAL DISTANCE BETWEEN CONSTRUCTION OPERATIONS ON ALTERNATE SIDES OF THE ROADWAY, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER AND HIGHWAY DEPARTMENT.
2. WHEN TWO OR MORE AREAS ARE ADJACENT, OVERLAP, OR ARE IN CLOSE PROXIMITY, THE CONTRACTOR SHALL ENSURE THERE ARE NO CONFLICTING SIGNS AND THAT LANE CONTINUITY IS MAINTAINED THROUGHOUT ALL WORK AREAS.

SIGNS:

1. THE LOCATIONS OF TRAFFIC CONTROL SIGNS SHALL BE PER NYSDOT STANDARD SHEETS, EXCEPT WHERE ADJUSTMENT IS NECESSARY FOR SIGHT DISTANCE AND OTHER CONSIDERATIONS. THE FINAL LOCATIONS OF SIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER AND HIGHWAY DEPARTMENT.
2. ANY EXISTING SIGNS, INCLUDING OVERHEAD SIGNS, WHICH CONFLICT WITH THE TEMPORARY TRAFFIC CONTROL SIGN LAYOUT SHALL BE COVERED, REMOVED, STORED OR RESET, AS APPROVED BY THE CITY ENGINEER AND HIGHWAY DEPARTMENT. ALL APPROPRIATE EXISTING SIGNS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND/OR LOCATION UNLESS OTHERWISE REPLACED IN THIS CONTRACT.
3. SIGNS AT OR NEAR INTERSECTIONS SHALL BE PLACED SO THAT THEY DO NOT OBSTRUCT A MOTORIST'S LINE OF SIGHT.
4. IN CASES WHERE LANE RESTRICTIONS REDUCE THE TRAVEL LANE TO ONE LANE, SIGNS SHALL BE POSTED ON THE RIGHT SIDE OF THE ACTIVE TRAVEL LANE, UNLESS OTHERWISE AUTHORIZED BY THE CITY ENGINEER OR HIGHWAY DEPARTMENT.
5. THE DIMENSIONS OF WORK ZONE TRAFFIC CONTROL SIGNS ARE DESCRIBED IN THE MUTCD. ANY CHANGES TO THE DIMENSIONS SHALL BE APPROVED BY THE CITY.
6. SIGN INSTALLATION NOTES:
   A. SIGN SUPPORT – THE CONTRACTOR SHALL SUPPLY ADEQUATE SUPPORTS SO THAT THE SIGNS ARE IN PROPER POSITION AND ALIGNMENT AS SHOWN IN THE WORK ZONE TRAFFIC CONTROL PLAN, AND OTHER M&PT REQUIREMENT DOCUMENTATION. ALL WOOD SUPPORTS SHALL BE PAINTED WITH TWO (2) COATS OF WHITE PAINT.
   B. SIGN PANELS MAY BE MADE OF ALUMINUM, STEEL OR PLYWOOD. THE BACKS OF ALL PLYWOOD PANELS SHALL BE PAINTED WITH TWO (2) COATS OF WHITE PAINT.
   C. SIGN LEGEND – SIGN LEGEND, BORDERS AND MARGINS SHALL BE IN ACCORDANCE WITH MUTCD.
   D. SIGN COLOR – THE COLOR OF THE SIGN BACKGROUND AND LEGEND SHALL BE AS SPECIFIED IN MUTCD. THE MARGIN SHALL BE THE SAME COLOR SPECIFIED FOR THE BACKGROUND, AND THE BORDER SHALL BE THE SAME COLOR SPECIFIED FOR THE LEGEND.
   E. SIGN SHAPE – THE SHAPE OF ALL SIGNS SHALL BE AS SPECIFIED IN MUTCD. CORNERS OF SIGNS SHALL BE ROUNDED.
   F. REFLECTORIZATION – ALL SIGNS SHALL BE REFLECTIVE USING HIGH INTENSITY REFLECTORIZED TAPE OR PAINT. ALL SIGNS SHALL BE REVIEWED AT NIGHT AFTER ERECTION FOR VISIBILITY AND REFLECTORIZATION. ANY SIGNS NOT MEETING PROPER REFLECTION REQUIREMENTS SHALL BE REPLACED.
7. THE CONTRACTOR SHALL KEEP SIGNS CLEANED AND CLEARED AT ALL TIMES. ALL SIGNS ARE THE PROPERTY OF THE CONTRACTOR AND SHALL BE MAINTAINED IN GOOD CONDITION FOR THE DURATION OF THE CONTRACT. ALL SIGNS SHALL BE REMOVED FROM THE WORK SITE WHEN THE CONTRACT WORK IS ACCEPTED.

CHANNELIZING DEVICES:

1. WHERE POSSIBLE ALL CHANNELIZING AND GUIDING DEVICES ARE TO BE PLACED SO AS TO PROVIDE A MINIMUM 2' LATERAL CLEARANCE TO THE TRAVELED WAY.

PUBLIC ACCESS:

1. PROPERTY OWNERS WHOSE DRIVEWAYS WILL BE MADE INACCESSIBLE SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 24 HOURS PRIOR TO RESTRICTING USE OF THE DRIVEWAY. FOR MULTIPLE ACCESS PROPERTIES, AT LEAST ONE DRIVEWAY SHALL BE OPEN AT ALL TIMES. ACCESS SHALL BE RESTORED TO ALL DRIVEWAYS AS SOON AS POSSIBLE.
2. SUITABLE RAMPS SHALL BE INSTALLED TO MAINTAIN SMOOTH TRANSITIONS FROM RESIDENTIAL AND COMMERCIAL DRIVEWAYS TO AND FROM THE WORK AREA.

LANE CLOSURES:

1. THE CONTRACTOR SHALL LOCATE LANE CLOSURES TO PROVIDE OPTIMUM VISIBILITY, I.E. BEFORE CURVES AND CRESTS, TO THE EXTENT CONDITIONS PERMIT.
2. THE CITY MAY REQUIRE THAT ALL LANES BE RE-OPENED AT ANY TIME IF THE ROUTE IS NEEDED FOR EMERGENCY PURPOSES. THIS COULD INCLUDE INCIDENTS AT LOCATIONS OUTSIDE THE CONTRACT LIMITS.
3. REFER TO RESTRICTIONS ON LANE CLOSURE NOTES, THIS SHEET.

LANE WIDTHS:

1. UNLESS AUTHORIZED BY THE CITY ENGINEER, THE MINIMUM LANE WIDTHS FOR WORK ZONE TRAVEL LANES SHALL BE 10'.
2. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CITY ENGINEER AND HIGHWAY DEPARTMENT, A MINIMUM OF 21 CALENDAR DAYS IN ADVANCE OF PERFORMING ANY WORK THAT RESULTS IN THE REDUCED WIDTH OF AN EXISTING ROADWAY.

BARRIER/SHADOW VEHICLES:

1. BARRIER AND SHADOW VEHICLES SHALL BE REQUIRED AS PER NYSDOT STANDARD SHEET TITLED "WORK ZONE TRAFFIC CONTROL LEGENDS AND NOTES".
2. NO WORK ACTIVITY, EQUIPMENT, VEHICLES AND/OR MATERIALS SHALL BE LOCATED BETWEEN THE BARRIER OR SHADOW VEHICLE AND THE ACTIVE WORK AREA (ROLL AHEAD DISTANTANCE).
3. THE CONTRACTOR MAY BE REQUIRED TO PROVIDE A BARRIER VEHICLE IN CONJUNCTION WITH POLICE PRESENCE IN THE WORK ZONE, TO BE INCLUDED IN THE UNIT BID PRICE FOR BASIC WORK ZONE TRAFFIC CONTROL.

PAVEMENT MARKINGS:

1. ALL TEMPORARY PAVEMENT MARKINGS SHALL CONFORM TO THE MATERIAL AND PLACEMENT REQUIREMENTS OF THE CONTRACT DOCUMENTS, MUTCD, AND NYSDOT STANDARD SPECIFICATIONS.
2. IF REQUIRED TEMPORARY PAVEMENT MARKINGS CONFLICT IN MESSAGE OR LOCATION WITH EXISTING PAVEMENT MARKINGS, THE EXISTING PAVEMENT MARKINGS WILL BE REMOVED OR COVERED FOR THE DURATION OF USE OF THE TEMPORARY MARKINGS AS APPROVED BY THE CITY ENGINEER. ALL APPROPRIATE EXISTING MARKINGS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND/OR LOCATION UNLESS REPLACED UNDER THIS CONTRACT.

WORK DURATION:

1. WORK DURATION DIRECTLY INFLUENCES THE REQUIREMENTS FOR WORK ZONE TRAFFIC CONTROL. TO FACILITATE THE UNDERSTANDING OF THE INFORMATION PRESENTED HEREIN, THE FOLLOWING DEFINITIONS ARE PRESENTED:
   a. LONG TERM STATIONARY WORK: WORK THAT OCCUPIES A LOCATION MORE THAN THREE CONSECUTIVE DAYS. TYPICALLY THE WORK AREA IS OCCUPIED BY EXCAVATIONS, MATERIALS, AND/OR EQUIPMENT AT TIMES WHEN WORKERS ARE NOT PRESENT.
   b. INTERMEDIATE-TERM STATIONARY WORK: WORK THAT OCCUPIES A LOCATION MORE THAN ONE DAYLIGHT PERIOD UP TO THREE CONSECUTIVE DAYS, OR NIGHTTIME WORK LASTING MORE THAN ONE HOUR, TYPICALLY THE WORK AREA IS OCCUPIED BY EXCAVATIONS, MATERIALS, AND/OR EQUIPMENT AT TIMES WHEN WORKERS ARE NOT PRESENT.
   c. SHORT-TERM STATIONARY WORK: DAYTIME WORK THAT OCCUPIES A LOCATION FOR MORE THAN ONE HOUR WITHIN A SINGLE DAYLIGHT PERIOD. EXAMPLES ARE GUIDERAIL REPAIR, DITCH MAINTENANCE, AND BRIDGE INSPECTION.
   d. SHORT DURATION WORK: WORK THAT OCCUPIES A LOCATION UP TO ONE HOUR. EXAMPLES ARE POT HOLE REPAIR, MINOR GUIDERAIL REPAIR, AND SIGN REPAIR.
   e. MOBILE WORK: WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY. EXAMPLES ARE PAINT STRIPING OPERATIONS, SWEEPING OPERATIONS, AND HERBICIDE SPRAYING
2. THE ABOVE DEFINITIONS ARE PER NYSDOT STANDARD SHEET 619-11, EFFECTIVE DATE 01/08/09, AND THE NYSDOT WORK ZONE TRAFFIC CONTROL MANUAL.
3. LONG-TERM AND INTERMEDIATE-TERM WORK ZONE TRAFFIC CONTROL REQUIREMENTS ARE COVERED BY THE 619 SERIES OF THE NYSDOT STANDARD SHEETS.
4. SHORT-TERM, SHORT DURATION, AND MOBILE WORK ZONE TRAFFIC CONTROL REQUIREMENTS ARE COVERED BY THE NYSDOT WORK ZONE TRAFFIC CONTROL MANUAL.

TRAFFIC CONTROL PLAN:

TEMPORARY SIDEWALK AND LANE CLOSURES:

IT WILL BE NECESSARY TO TEMPORARILY CLOSE SIDEWALKS AND TRAVEL LANES IN ORDER TO PERFORM THE CONTRACT WORK. THE FOLLOWING RESTRICTIONS SHALL APPLY:

1. NO SIDEWALK OR LANE CLOSURES SHALL BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE CITY ENGINEER OR HIGHWAY DEPARTMENT.
2. THE CONTRACTOR IS RESPONSIBLE TO SUBMIT REQUESTS FOR SIDEWALK OR LANE CLOSURES TO THE CITY ENGINEER AND HIGHWAY DEPARTMENT A MINIMUM OF SEVEN (7) DAYS IN ADVANCE OF SCHEDULED CLOSURES FOR APPROVAL. DUE TO POSSIBLE TRAFFIC CONTROL CONFLICTS, APPROVAL MAY OR MAY NOT BE GRANTED FOR THE DATE(S) REQUESTED. ANY ADDITIONAL COSTS, DELAYS OR REMOBILIZATION ASSOCIATED WITH THE APPROVAL PROCESS SHALL BE INCLUDED IN THE BID PRICE FOR BASIC WORK ZONE TRAFFIC CONTROL.
3. NO CLOSURES WILL BE PERMITTED DURING NON-WORKING HOURS, UNLESS SPECIFICALLY PROVIDED ELSEWHERE IN THE CONTRACT.
4. ON ALL ROUTES, THE SAME NUMBER OF TRAVEL LANES (INCLUDING TURNING LANES), AS EXIST PRIOR TO THIS CONTRACT, SHALL BE MAINTAINED IN EACH DIRECTION DURING THE HOURS OF 6:30 A.M. TO 9:30 A.M. AND 4:00 P.M. TO 6:30 P.M. – MONDAY TO FRIDAY, INCLUSIVE OR AS PER PERMIT STATED TIME RESTRICTIONS.
5. IN AREAS OF MAJOR SHOPPING MALLS, THE SAME NUMBER OF TRAVEL LANES (INCLUDING TURNING LANES), AS EXIST PRIOR TO THIS CONTRACT, SHALL BE MAINTAINED IN EACH DIRECTION DURING THE HOURS OF 10:00 A.M. TO 4:00 P.M. ON SATURDAYS.
6. THE TIME RESTRICTIONS LISTED ABOVE CAN BE SHIFTED AS TRAFFIC CONDITIONS WARRANT, AND THE CONTRACTOR SHALL BE AWARE THAT CITY OF POUGHKEEPSIE HAS THE ABILITY TO ORDER ADDITIONAL TIME RESTRICTIONS OF UP TO ONE HOUR PER WORK DAY TO THE TIME RESTRICTIONS LISTED ABOVE IF TRAFFIC CONDITIONS WARRANT, AT NO COST TO THE OWNER. THE CONTRACTOR SHALL NOT HAVE ANY DELAY CLAIMS AGAINST THE OWNER OR CITY IF THE CITY ORDERS UP TO ONE HOUR OF ADDITIONAL TIME RESTRICTIONS PER DAY.
6. THE CITY ENGINEER IS AUTHORIZED TO REDUCE THE ABOVE TIME RESTRICTIONS, AS TRAFFIC CONDITIONS WARRANT.
7. THE CONTRACTOR IS ALSO ADVISED THAT THE CITY RESERVES THE RIGHT TO PRECLUDE LANE CLOSURES DURING PERIODS OF INCLEMENT WEATHER, WET OR ICY PAVEMENT, REDUCED VISIBILITY, TRAFFIC ACCIDENTS OR ANY OTHER EMERGENCIES. THE CITY MAY ALTER ANY LANE CLOSURES SHOULD TRAFFIC CONDITIONS OR OTHER UNFORESEEN CIRCUMSTANCES ARISE WHICH WOULD ADVERSELY AFFECT THE TRAFFIC FLOW. THE CONTRACTOR IS ALSO ALERTED TO THE FACT THAT INCIDENT MANAGEMENT OR TRAFFIC CONDITIONS MIGHT FORCE HIS/HER CONSTRUCTION OPERATION TO STOP, EVEN DURING TIME WHERE SUCH OPERATION WOULD NORMALLY BE PERMITTED. TEN SUCH OCCURRENCES PER CALENDAR YEAR SHOULD BE TAKEN INTO CONSIDERATION AS A REASONABLE FREQUENCY OF SUCH EVENT WHEN BIDDING THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM AGAINST THE OWNER OR CITY FOR ANY DELAYS OR EXTRA COSTS INCURRED IN COMPLYING WITH THESE RESTRICTIONS.

TABLE 6C-3
TAPER LENGTH FOR TEMPORARYTRAFFIC CONTROL ZONES

TYPE OF TAPER	TAPER LENGTH (L)
MERGING TAPER	L
SHIFTING TAPER	L/2
SHOULDER TAPER	L/3
ONE-LANE, TWO-WAY TRAFFIC TAPER	100 FT. MAXIMUM
DOWNSTREAM TAPER	100 FT. PER LANE

TABLE NYGH-3
ADVANCE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS			SIGN LEGEND	
	A (FT.)	B (FT.)	C (FT.)	XX	YY
URBAN (≤ 30 MPH*)	100	100	100	AHEAD	AHEAD
URBAN (35-40 MPH*)	200	200	200	AHEAD	AHEAD
URBAN (≥ 45 MPH*)	350	350	350	1000 FT.	AHEAD
RURAL	500	500	500	1500 FT.	1000 FT.
EXPRESSWAY / FREEWAY	1000	1500	2640	1 MILE	1/2 MILE

* PRECONSTRUCTION POSTED SPEED LIMIT

- URBAN: (MEETS MORE THAN 1 OF THE FOLLOWING CRITERIA)SIDEWALKS, BICYCLE USAGE, CURBING, CLOSED DRAINAGE SYSTEMS,DRIVEWAY DENSITIES GREATER THAN 24 DRIVEWAYS PER MILE, MINOR COMMERCIAL DRIVEWAY DENSITIES OF 10 DRIVEWAYS PER MILE OR GREATER, MAJOR COMMERCIAL DRIVEWAYS, NUMEROUS RIGHT OF WAY CONSTRAINTS, HIGH DENSITY OF CROSS STREETS, 85TH PERCENTILE SPEEDS OF 45 MPH OR LESS.
- RURAL: ANY AREA NOT EXHIBITING MORE THAN ONE OF THE ABOVE CHARACTERISTICS.
- EXPRESSWAY: DIVIDED HIGHWAYS FOR TRAFFIC WITH FULL OR PARTIAL CONTROL OF ACCESS AND GENERALLY WITH GRADE SEPARATION SAT MAJOR CROSSROADS.
- FREEWAYS/INTERSTATE: LOCAL OR INTER REGIONAL HIGH-SPEED, DIVIDED,HIGH-VOLUME FACILITIES WITH FULL OR PARTIAL CONTROL OF ACCESS.

NOTE:
TABLES, TABLE NOTES & WORK ZONE TRAFFIC CONTROL FROM NYSDOT STANDARD SHEET 619-11 (01/08/09)

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It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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APPLICANT NAME & ADDRESS:
ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:
SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
1	03/07/23	SHEET ADDED
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME: TRAFFIC CONTROL PLAN
DRAWING NUMBER: C200

3/7/2023 1:23:59 PM
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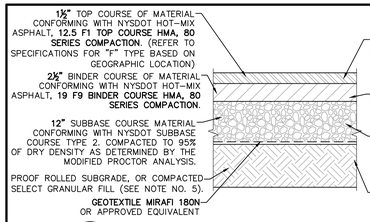
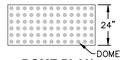
Drawing Name: Z:\2022projects\ARGO\2222201 – South Ave Multi Family Dev\06_Drawings\Civil\01_C200_2222201_TRAFFIC.dwg
Xref's Attached: XBORDER_2222201; XENG_2222201; XLAYOUT-2222201; XBASE-ENG_2222201
Date Printed: Mar 07, 2023, 1:23pm



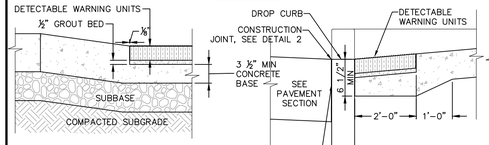
A **ON-SITE** B **CITY ROW**

NOTES:
1. MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED **"CURRENT VERSION"**, AND ALL ADDENDA THERE TO.
2. SUBBASE MATERIAL SHALL CONFORM WITH **SECTION 304** – SUBBASE COURSE OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND THE TYPE CALLED OUT IN THESE DRAWINGS.
3. HOT MIX ASPHALT (HMA) PAVEMENT SHALL CONFORM WITH **SECTION 400**–HOT MIX ASPHALT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND THE TYPE CALLED OUT IN THESE DRAWINGS. ALTHOUGH **SECTION 400** IN ITS ENTIRETY IS REFERENCED, THE HOT MIX ASPHALT (HMA) PAVEMENT(S) SPECIFIED FOR THIS CONTRACT SHALL BE AS SPECIFIED UNDER **SECTION 402**–HOT MIX ASPHALT (HMA) PAVEMENTS.
4. TACK COAT WHEN SPECIFIED OR CALLED OUT IN THESE DRAWINGS OR REQUIRED BY THE REFERENCED SPECIFICATIONS SHALL CONFORM WITH **SECTION 407**–TACK COAT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
5. WHERE IT IS NECESSARY TO PLACE FILL FOR PURPOSES OF BRINGING THE SUBGRADE ELEVATION UP TO A SPECIFIED GRADE, THE FILL MATERIAL PLACED SHALL BE IN CONFORMANCE WITH **SECTION 203**–EXCAVATION AND EMBANKMENT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.

© 1 **PAVEMENT SECTION DETAIL**
SCALE: NOT TO SCALE



DOME PLAN

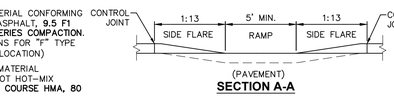


SECTION A-A THRU RAMP **SECTION B-B THRU RAMP**

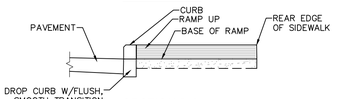
APPLY TACK COAT IN ACCORDANCE WITH THE NYSDOT SPECIFICATION SECTION 704 ON VERTICAL FACE OF CONCRETE SIDEWALK PRIOR TO PLACEMENT OF BINDER AND TOP COURSE.

NOTES:
1. COORDINATE W/ OWNER FOR COLOR.
2. DETECTABLE WARNING UNIT SHALL BE ADA COMPLIANT, AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
3. MATERIALS: UNIT SHALL BE 24–INCH DETECTABLE WARNING ADA PAVERS, DOME STRAIGHT ROW SPACING PATTERN ADA–2 OR ADA–3, ADA COMPLIANT WARNING PAVER AS MANUFACTURED BY WAUSAU TILE OR CAST IRON, CAST IN PLACE ADA COMPLIANT WARNING PLATE A MANUFACTURED BY TUFTILE OR EQUAL.

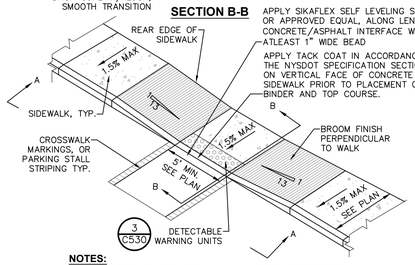
© 3 **DETECTABLE WARNING UNITS FOR RAMPS**
SCALE: NOT TO SCALE



SECTION A-A



SECTION B-B

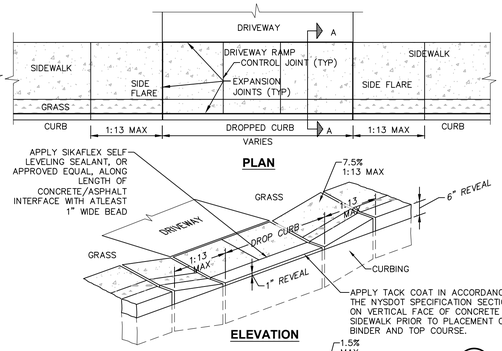


APPLY SIKAFLEX SELF LEVELING SEALANT, OR APPROVED EQUAL, ALONG LENGTH OF CONCRETE/ASPHALT INTERFACE WITH ATLEAST 1" WIDE BEAD

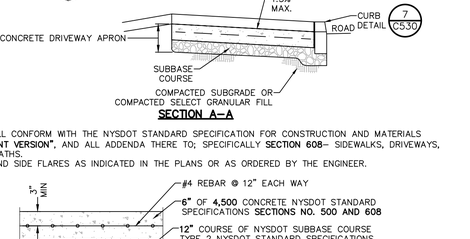
APPLY TACK COAT IN ACCORDANCE WITH THE NYSDOT SPECIFICATION SECTION 704 ON VERTICAL FACE OF CONCRETE SIDEWALK PRIOR TO PLACEMENT OF BINDER AND TOP COURSE.

NOTES:
1. ALL WORK SHALL CONFORM WITH THE NYSDOT STANDARD SPECIFICATION FOR CONSTRUCTION AND MATERIALS DATED, **"CURRENT VERSION"**, AND ALL ADDENDA THERE TO; SPECIFICALLY **SECTION 608**– SIDEWALKS, DRIVEWAYS, AND BICYCLE PATHS.
2. SLOPE RAMP AND SIDE FLARES AS INDICATED IN THE PLANS OR AS ORDERED BY THE ENGINEER.
3. DETECTABLE WARNING UNITS SHALL BE PROVIDED ON ALL RAMPS IN ACCORDANCE W/ ADA REQUIREMENTS.

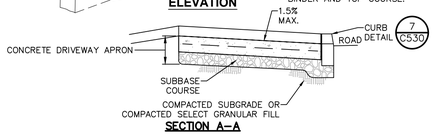
© 2 **PEDESTRIAN RAMP SECTION - DROP CURB**
SCALE: NOT TO SCALE



PLAN

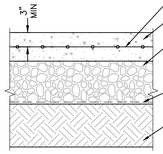


ELEVATION



SECTION A–A

NOTES:
1. ALL WORK SHALL CONFORM WITH THE NYSDOT STANDARD SPECIFICATION FOR CONSTRUCTION AND MATERIALS DATED, **"CURRENT VERSION"**, AND ALL ADDENDA THERE TO; SPECIFICALLY **SECTION 608**– SIDEWALKS, DRIVEWAYS, AND BICYCLE PATHS.
2. SLOPE RAMP AND SIDE FLARES AS INDICATED IN THE PLANS OR AS ORDERED BY THE ENGINEER.

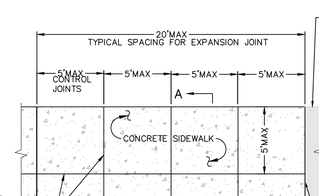


#4 REBAR @ 12" EACH WAY
6" OF **4,500** CONCRETE NYSDOT STANDARD SPECIFICATIONS **SECTIONS NO. 500 AND 608**
12" COURSE OF NYSDOT SUBBASE COURSE TYPE 2 NYSDOT STANDARD SPECIFICATIONS **SECTION 304**, COMPACTED TO 95% MODIFIED PROCTOR
GEOTEXTILE MIRAFI 180N FOR SUBGRADE STABILIZATION NYSDOT STANDARD SPECIFICATIONS **SECTION 207**
COMPACTED SUBGRADE OR COMPACTED SELECT GRANULAR FILL AS REQUIRED TO BRING SUBBASE TO CORRECT GRADE. SEE NOTE.

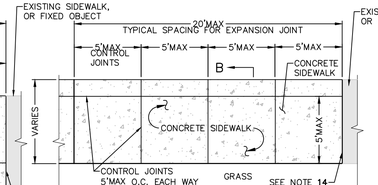
CONCRETE SLAB NOTES: **CONCRETE SECTION**

1. MATERIAL AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED MAY 1, 2008, AND ALL ADDENDA THERETO.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 4500 PSI @ 28 DAY AND SHALL BE PLACED IN ACCORDANCE WITH ACI SPECIFICATIONS AND ITS LATEST REVISION.
3. REINFORCING STEEL FOR CONCRETE SHALL CONFORM WITH SECTION 556 – REINFORCING STEEL FOR CONCRETE STRUCTURES OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND AS SPECIFICALLY CALLED OUT IN THE DRAWINGS.
4. ALL EXPOSED SURFACED SHALL HAVE A BROOM TEXTURED FINISH & TOOLED EDGES. TOOL SHALL BE PROVIDE MAX 1–1/2" WIDE SMOOTH TROWEL FINISH AT JOINT.
5. EXPANSION JOINTS SHALL BE LOCATED A MAXIMUM OF 20' ON CENTER, OR AS INDICATED ON PLANS.
6. CONTROL JOINTS SHALL BE LOCATED A MAXIMUM OF 5' ON CENTER, OR AS INDICATED ON PLANS.
7. JOINTS SHALL NOT BE SAW CUT.
8. EXPOSED CONCRETE SURFACES SHALL BE TREATED WITH "SUREBOND"/"SAFEBOND" SB–7000 INTENSIFIER BRIGHT PROTECTOR AND SIDEWALK SEALER, OR EQUAL. RATE AND METHOD OF APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
9. SUBBASE MATERIAL SHALL CONFORM WITH SECTION 304 OF THE ABOVE REFERENCED NYSDOT STANDARD.
10. WHERE IT IS NECESSARY TO PLACE FILL FOR PURPOSE OF BRINGING THE SUBGRADE ELEVATION UP TO A SPECIFIED GRADE, THE FILL MATERIAL PLACED SHALL BE IN ACCORDANCE WITH SECTION 203–EXCAVATION AND EMBANKMENT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.

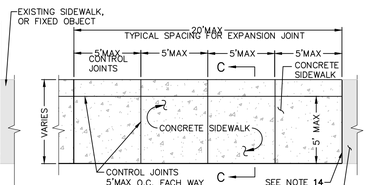
© 9 **CONCRETE DRIVEWAY RAMP WITH DROP CURB**
SCALE: NOT TO SCALE



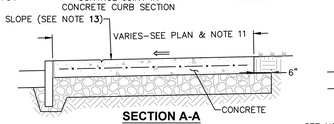
PLAN



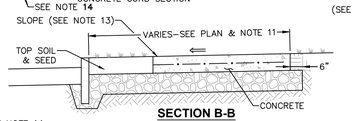
PLAN



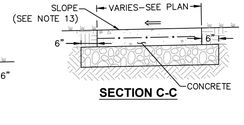
PLAN



SECTION A-A



SECTION B-B



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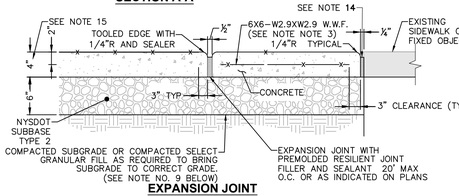
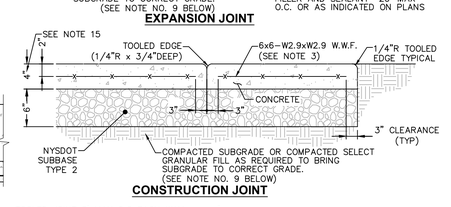
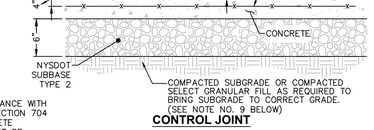


EXPANSION JOINT



CONSTRUCTION JOINT

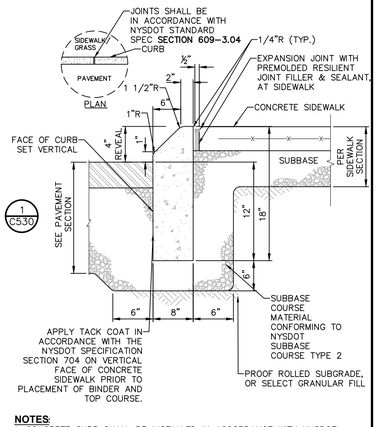


CONTROL JOINT

© 4 **CONCRETE SIDEWALK DETAIL**
SCALE: NOT TO SCALE

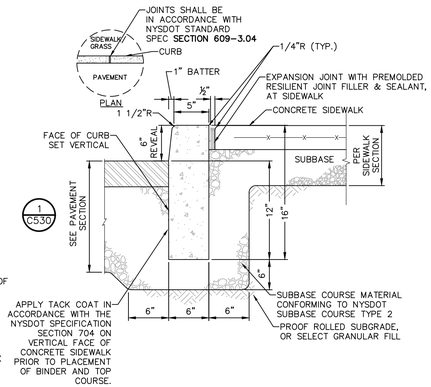
TOOLED EDGE

NOTES:
1. MATERIAL AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED "CURRENT VERSION", AND ALL ADDENDA THERE TO.
2. ALL CONCRETE SHALL BE **4,500** CONCRETE. CONCRETE MATERIALS, PLACEMENT, AND CONSTRUCTION SHALL CONFORM WITH **SECTION 500** OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
3. REINFORCING STEEL FOR CONCRETE SHALL CONFORM WITH SECTION 556 – REINFORCING STEEL FOR CONCRETE STRUCTURES OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND AS SPECIFICALLY CALLED OUT IN THE DRAWINGS.
4. ALL EXPOSED SURFACES SHALL HAVE A BROOM TEXTURED FINISH & TOOLED EDGES. TOOL SHALL PROVIDE MAX 1–1/2" WIDE SMOOTH TROWEL FINISH AT JOINT.
5. EXPANSION JOINTS SHALL BE LOCATED A MAXIMUM OF 20' ON CENTER, OR AS INDICATED ON PLANS.
6. JOINTS SHALL NOT BE SAW CUT.
7. EXPOSED CONCRETE SURFACES SHALL BE TREATED WITH **"SUREBOND" 1100 RESIN–BASED, WATER EMULSION CONCRETE CURING COMPOUND**, OR EQUAL. RATE AND METHOD OF APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. SUBBASE MATERIAL SHALL CONFORM WITH **SECTION 304** OF THE ABOVE REFERENCED NYSDOT STANDARD.
9. WHERE IT IS NECESSARY TO PLACE FILL FOR PURPOSE OF BRINGING THE SUBGRADE ELEVATION UP TO A SPECIFIED GRADE, THE FILL MATERIAL PLACED SHALL BE IN ACCORDANCE WITH SECTION 203–EXCAVATION AND EMBANKMENT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
10. ALL WORK SHALL CONFORM WITH **SECTION 608**–SIDEWALK, DRIVEWAYS, AND BICYCLE PATHS OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
11. ALL WORK SHALL CONFORM WITH AASHTO GEOMETRIC DESIGN OF HIGHWAYS AND STREET 2011, ICC A117.1 2009. OR LATEST EDITION.
12. SIDEWALK WIDTH SHOWN ON THE PLANS IS TO BE MEASURED FROM THE BACK OF THE CURB.
13. SIDEWALKS SHALL HAVE A CROSS SLOPE OF **1.5%** MAX. UNLESS OTHERWISE NOTED ON PLAN.
14. INSTALL EXPANSION JOINT WITH PREMOLDED RESILIENT JOINT FILLER & SEALANT AT ALL EXISTING SIDEWALKS, CURBS, FIXED OBJECTS, ETC., INCLUDING THOSE PLACED ON PREVIOUS DAYS.
15. WHERE SIDWALK REPLACMENT OCCURS IN CITY ROW, SIDEWALK SHALL BE 5–INCH THICK.



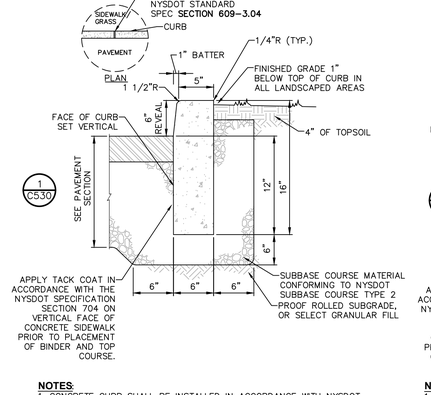
NOTES:
1. CONCRETE CURB SHALL BE INSTALLED IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATION **SECTION 609**.

© 5 **CAST IN PLACE MOUNTABLE CONCRETE CURB AT SIDEWALK**
SCALE: NOT TO SCALE



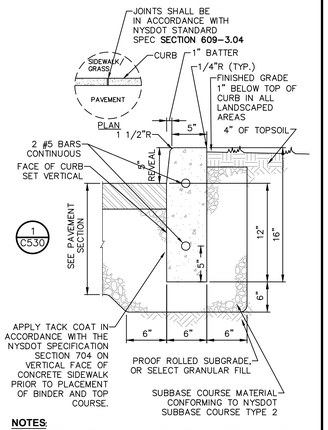
NOTES:
1. CONCRETE CURB SHALL BE INSTALLED IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATION **SECTION 609**.

© 7 **CAST IN PLACE CONCRETE CURB AT SIDEWALK**
SCALE: NOT TO SCALE



NOTES:
1. CONCRETE CURB SHALL BE INSTALLED IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATION **SECTION 609**.

© 8 **CAST IN PLACE CONCRETE CURB**
SCALE: NOT TO SCALE



NOTES:
1. CONCRETE CURB SHALL BE INSTALLED IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATION **SECTION 609**.
2. PRECAST CONCRETE CURB MAY BE SUBSTITUTED, WHEN ALTERNATE CONSTRUCTION DETAILS ARE SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. ALTERNATE CURB SHALL BE INSTALLED IN ACCORDANCE WITH NYSDOT SPEC SECTION 609.

© 10 **CITY OF POUGHKEEPSIE CAST IN PLACE CONCRETE CURB**
SCALE: NOT TO SCALE

LaBella
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Poughkeepsie, NY 12601
(845) 454-3980
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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
2	03/07/23	REVISED PER PLANNING BOARD COMMENTS
1	01/27/23	NO CHANGES THIS SHEET
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

SITE DETAILS

DRAWING NUMBER:

C530

3/7/2023 1:24:19 PM
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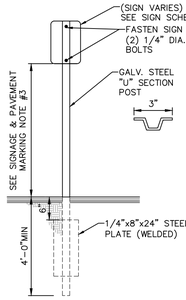
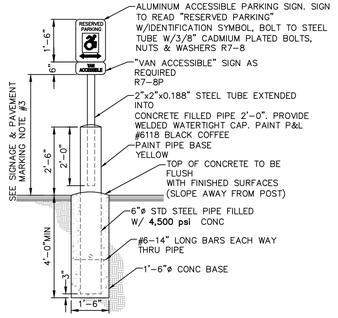
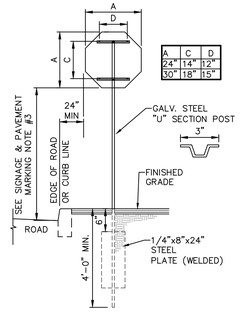
Date Printed: Mar 07, 2023, 1:24pm



SINGLE POST SIGN MOUNTING DETAIL
SCALE: NOT TO SCALE



TUBULAR POST SIGN MOUNTING DETAIL
SCALE: NOT TO SCALE



SINGLE POST STOP SIGN MOUNTING DETAIL
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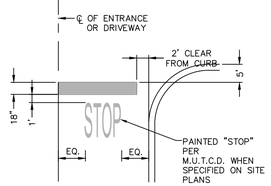
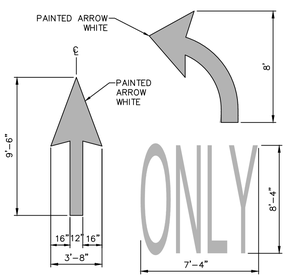
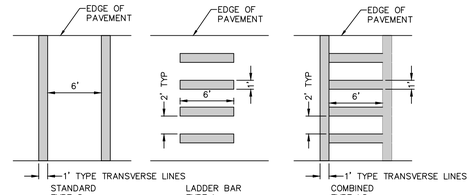


PAVEMENT MARKING DETAIL STOP BAR
SCALE: NOT TO SCALE



PAVEMENT MARKING DETAIL DIRECTIONAL ARROW
SCALE: NOT TO SCALE

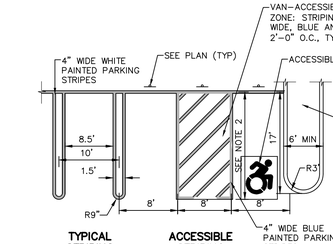


NOTES:
1. ALL CROSS WALK STRIPING SHALL BE WHITE
2. TYPE S CROSS WALK SHALL BE USED IN LOW TRAFFIC VOLUME STREET CROSSINGS.
3. TYPE L CROSS WALK SHALL BE USED IN MEDIUM TRAFFIC VOLUME STREET CROSSINGS.
4. TYPE LS CROSS WALK SHALL BE USED IN HIGH TRAFFIC VOLUME STREET CROSSINGS.

PAVEMENT MARKING DETAIL CROSS WALK STRIPING
SCALE: NOT TO SCALE

STRIPING NOTES:
1. ALL STRIPING SHALL CONFORM TO THE LATEST EDITION OF THE NYSDOT STANDARD SPECIFICATIONS, **SECTION 640** AND THE "NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" – **2009 EDITION** AND THE "NYS SUPPLEMENT."
2. STRIPE PAVEMENT AS INDICATED ON THE PLANS AND/OR IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REQUIREMENTS.
3. STRIPING WORK WILL BE REVIEWED AND ACCEPTED BY THE AUTHORITY HAVING JURISDICTION.
4. COLOR: DRIVE LANE DIVIDERS – WHITE OR AOBE
   NO PARKING ZONE MARKINGS – WHITE OR AOBE
   PARKING DIVIDERS – WHITE OR AOBE
   WALKING LINES – WHITE OR AOBE
   ACCESSIBLE PARKING LINES & SYMBOL – BLUE

SIGNAGE NOTES:
1. ALL SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE NYSDOT STANDARD SPECIFICATIONS, **SECTION 645** AND THE "NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" – **2009 EDITION** AND THE "NYS SUPPLEMENT."
2. SIGN MOUNTING HEIGHT SHALL BE A MINIMUM OF 7', MINIMUM MOUNTING HEIGHT MAY BE ADJUSTED ONLY IN ACCORDANCE WITH PROVISIONS OUTLINED IN THE "NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" – **2009 EDITION** AND THE "NYS SUPPLEMENT."
3. SIGN POST SHALL BE IN ACCORDANCE W/ NYSDOT STANDARD SPECS **SECTION 730**.



TYPICAL STRIPING — ACCESSIBLE STRIPING

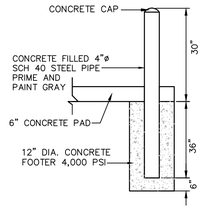
NOTES:
1. ALL DIMENSIONS SHALL BE IN ACCORDANCE WITH ADA STANDARD AND CURRENT ZONING AND SITE REGULATIONS. REFER TO TOWN OF **WAPPINGER ZONING CODE 240 ATTACHMENT 5.**
2. PARKING SPACE LENGTH SHALL BE 20'. WHERE ACCESS AISLE IS 26' WIDE PARKING SPACE LENGTH MAY BE REDUCED TO 18'.
3. PAINTED ACCESSIBLE LOGO TO BE IN ACCORDANCE W/ NEW YORK STATE LAW.
4. SLOPE OF PAVEMENT SURFACE IN ACCESSIBLE PARKING AREA SHALL NOT EXCEED 1.5% IN ANY DIRECTION.
5. SEE PLAN FOR ACTUAL LOCATION OF SIGNAGE

PAVEMENT MARKING DETAIL PARKING STRIPING
SCALE: NOT TO SCALE

MUTCD SIGN SCHEDULE

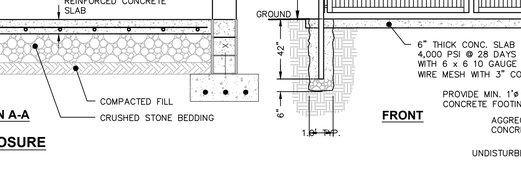
SIGN NO.	SIGN FACE	MUTCD NUMBER	MIN SIZE	COLORS BCK GRND	COLORS LEGEND	MOUNTING
①	STOP	R1-1	30"x30"	RED	WHITE	3 C531
②	ONE WAY	R6-1L	36"x12"	BLACK	WHITE	1 C531
③	ONE WAY	R6-1R	36"x12"	BLACK	WHITE	1 C531
④	DO NOT ENTER	R5-1	30"x30"	RED	WHITE	1 C531
⑤	RESERVED PARKING	NY R7-8D	12"x18"	WHITE/ BLUE	GREEN/ WHITE	2 C531
⑥	VAN ACCESSIBLE	R7-8P	12"x6"	WHITE	BLUE	2 C531
⑦	NO PARKING ANY TIME	R7-1	12"x18"	WHITE	RED	1 C531
⑧	ELECTRIC VEHICLE CHARGING STATION	AS SHOWN	12"x18"	WHITE	GREEN	1 C531

MUTCD SIGN SCHEDULE
SCALE: NOT TO SCALE



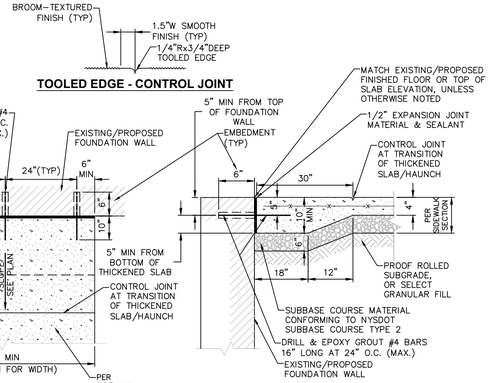
NOTES
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS WITH A MINIMUM CEMENT CONTENT OF 600 POUNDS PER CUBIC YARD FOR ALL FOOTINGS.
2. ALL CONCRETE SHALL HAVE A SLUMP OF NO GREATER THAN 3"–5" TO WITHIN A TOLERANCE OF 0"–1".
3. ALL EXPOSED CONCRETE SHALL BE 5% AIR–ENTRAINED (WITHIN 1% TOLERANCES) CONFORMING TO ASTM C260.
4. ALL FORMWORK AND PLACEMENT OF CONCRETE SHALL COMPLY WITH GOOD CONSTRUCTION PRACTICES AND BE IN ACCORDANCE WITH GOVERNING CODES, AND REGULATIONS.

BOLLARD DETAIL - FOR REFUSE ENCLOSURE
SCALE: NOT TO SCALE



SIDEWALK RAMP HAND RAIL DETAIL
SCALE: NOT TO SCALE

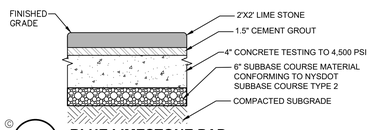
MASONRY WALL DETAIL FOR REFUSE ENCLOSURE
SCALE: NOT TO SCALE



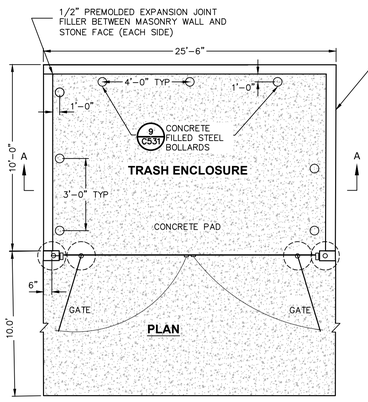
TOOLED EDGE - CONTROL JOINT

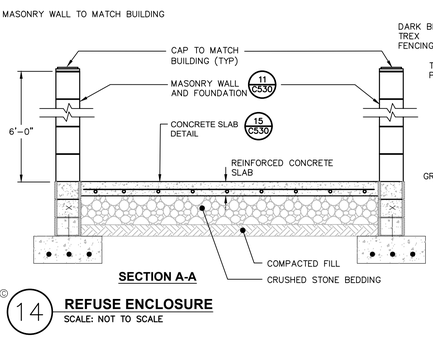
NOTE:
1. THICKENED (HAUNCH) & ADDITIONALLY REINFORCED CONCRETE SIDEWALK ENDS ARE REQUIRED AT ALL EXISTING/PROPOSED BUILDING ENTRANCES.
2. SEE CONCRETE SIDEWALK DETAIL FOR ADDITIONAL DETAILS & NOTES.

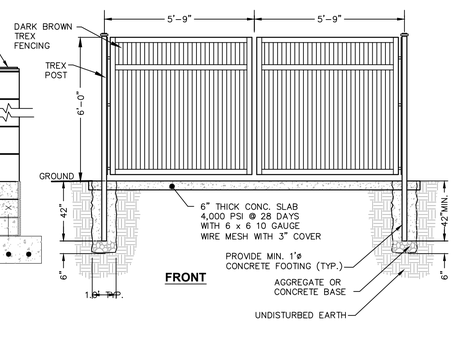
CONCRETE SIDEWALK AT BUILDING ENTRANCES
SCALE: NOT TO SCALE



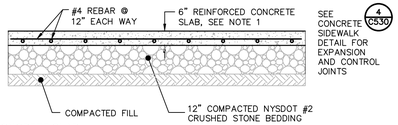
BLUE LIMESTONE PAD
SCALE: NOT TO SCALE







REFUSE ENCLOSURE
SCALE: NOT TO SCALE



CONCRETE SLAB:
1. MATERIAL AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED MAY 1, 2008, AND ALL ADDENDA THERETO.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 4500 PSI @ 28 DAY AND SHALL BE PLACED IN ACCORDANCE WITH ACI SPECIFICATIONS AND ITS LATEST REVISION.
3. REINFORCING STEEL FOR CONCRETE SHALL CONFORM WITH SECTION 556 – REINFORCING STEEL FOR CONCRETE STRUCTURES OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND AS SPECIFICALLY CALLED OUT IN THE DRAWINGS.
4. ALL EXPOSED SURFACED SHALL HAVE A BROOM TEXTURED FINISH & TOOLED EDGES. TOOL SHALL BE PROVIDE MAX 1–1/2" WIDE SMOOTH TROWEL FINISH AT JOINT.
5. EXPANSION JOINTS SHALL BE LOCATED A MAXIMUM OF 20' ON CENTER, OR AS INDICATED ON PLANS.
6. CONTROL JOINTS SHALL BE LOCATED A MAXIMUM OF 5' ON CENTER, OR AS INDICATED ON PLANS.
7. JOINTS SHALL NOT BE SAW CUT.
8. EXPOSED CONCRETE SURFACES SHALL BE TREATED WITH "SUREBOND"/"SAFEBOND" SB–7000 INTENSIFIER BRIGHT PROTECTOR AND SIDEWALK SEALER, OR EQUAL. RATE AND METHOD OF APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
9. SUBBASE MATERIAL SHALL CONFORM WITH SECTION 304 OF THE ABOVE REFERENCED NYSDOT STANDARD.
10. WHERE IT IS NECESSARY TO PLACE FILL FOR PURPOSE OF BRINGING THE SUBGRADE ELEVATION UP TO A SPECIFIED GRADE, THE FILL MATERIAL PLACED SHALL BE IN ACCORDANCE WITH SECTION 203–EXCAVATION AND EMBANKMENT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.

CONCRETE SLAB
SCALE: NOT TO SCALE

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APPLICANT NAME & ADDRESS:
ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:
SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
1	01/27/23	NO CHANGES THIS SHEET
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

SITE DETAILS

DRAWING NUMBER:

C531

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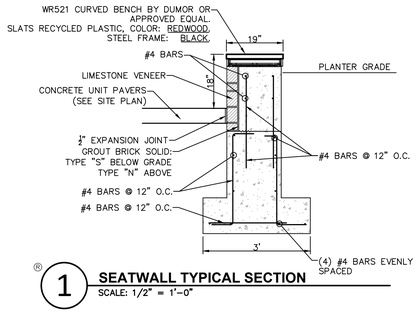
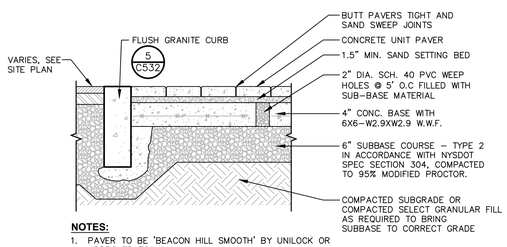
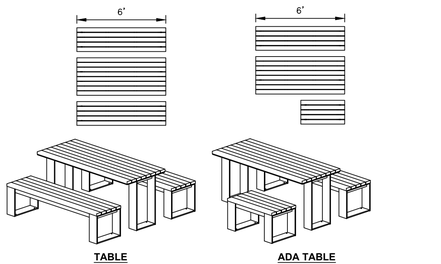


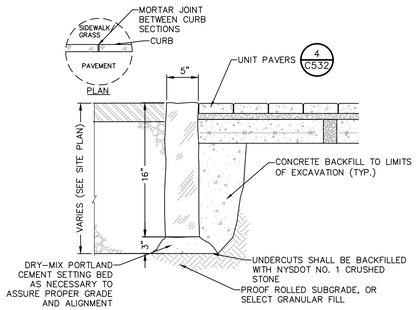
1 **SEATWALL TYPICAL SECTION**
SCALE: 1/2" = 1'-0"



NOTES:
1. PAVER TO BE 'BEACON HILL SMOOTH' BY UNILOCK OR APPROVED EQUAL.
   1.1. LAYING PATTERN: 'LP BEACON HILL FIXED RANDOM A'
   1.2. COLORS:
      1.2.1. PRIMARY: CHAMPAGNE
      1.2.2. ACCENT: CHARCOAL

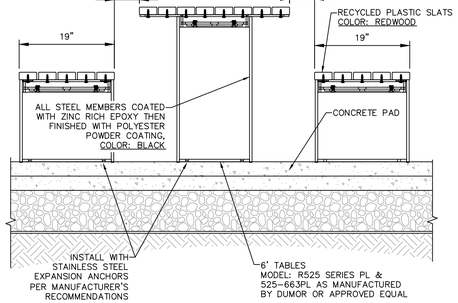
4 **UNIT PAVERS OVER CONCRETE BASE**
SCALE: NOT TO SCALE





NOTES:
1. GRANITE CURB TO BE INSTALLED IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATION **SECTION 609**.

5 **FLUSH GRANITE CURB**
SCALE: NOT TO SCALE



2 **6' TABLES**
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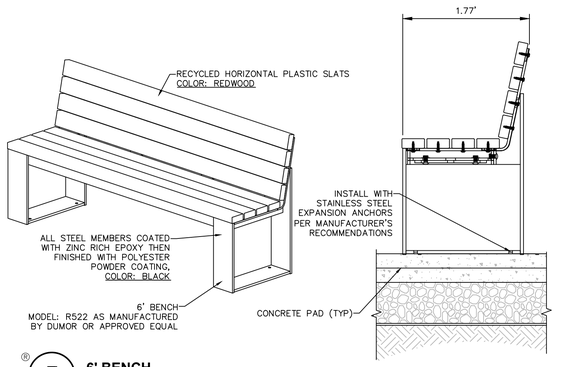

3 **6' BENCH**
SCALE: NOT TO SCALE

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Date Printed: Mar 07, 2023, 1:24pm

EROSION AND SEDIMENT CONTROL MEASURES:

1. DAMAGE TO SURFACE WATERS RESULTING FROM EROSION AND SEDIMENTATION SHALL BE MINIMIZED BY STABILIZING DISTURBED AREAS AND BY REMOVING SEDIMENT FROM CONSTRUCTION SITE DISCHARGES.
2. AS MUCH AS IS PRACTICAL, EXISTING VEGETATION SHALL BE PRESERVED. FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES IN ANY PORTION OF THE SITE, PERMANENT VEGETATION SHALL BE ESTABLISHED ON ALL EXPOSED SOILS.
3. SITE PREPARATION ACTIVITIES SHALL BE PLANNED TO MINIMIZE THE SCOPE AND DURATION OF SOIL DISRUPTION.
4. PERMANENT TRAFFIC CORRIDORS SHALL BE ESTABLISHED AND "ROUTES OF CONVENIENCE" SHALL BE AVOIDED. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL POINTS OF ENTRY ONTO THE PROJECT SITE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE IN STRICT COMPLIANCE WITH "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL", LATEST EDITION.
2. EXCESS SOIL TO BE STOCKPILED WITHIN THE LIMITS OF SITE DISTURBANCE IF NOT USED IMMEDIATELY FOR GRADING PURPOSES. INSTALL SILT FENCE AROUND SOIL STOCKPILES.
3. APPLY SURFACE STABILIZATION AND RESTORATION MEASURES. AREAS UNDERGOING CLEARING OR GRADING AND ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WHERE WORK IS DELAYED, SUSPENDED, OR INCOMPLETE AND WILL NOT BE REDISTURBED FOR 21 DAYS OR MORE SHALL BE STABILIZED WITH TEMPORARY VEGETATIVE COVER WITHIN 14 DAYS AFTER CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS CEASED. (SEE SPECIFICATIONS FOR TEMPORARY VEGETATIVE COVER). AREAS UNDERGOING CLEARING OR GRADING AND ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WHERE WORK IS COMPLETE AND WILL NOT BE REDISTURBED SHALL BE STABILIZED AND RESTORED WITH PERMANENT VEGETATIVE COVER AS SOON AS SITE AREAS ARE AVAILABLE AND WITHIN 14 DAYS AFTER WORK IS COMPLETE. (SEE SPECIFICATIONS FOR PERMANENT VEGETATIVE COVER). SEEDING FOR PERMANENT VEGETATIVE COVER SHALL BE WITHIN THE SEASONAL LIMITATIONS. PROVIDE STABILIZATION WITH TEMPORARY VEGETATIVE COVER WITHIN 14 DAYS AFTER WORK IS COMPLETE, FOR SEEDING OUTSIDE PERMITTED SEEDING PERIODS.
4. SEEDED AREAS TO BE MULCHED WITH STRAW OR HAY MULCH IN ACCORDANCE WITH VEGETATIVE COVER SPECIFICATIONS.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE COURSE OF CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST BY SPRINKLING EXPOSED SOIL AREAS PERIODICALLY WITH WATER AS REQUIRED. THE CONTRACTOR IS TO SUPPLY ALL EQUIPMENT AND WATER.
7. WHEN ALL DISTURBED AREAS ARE STABLE, ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED.

MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES:

PERMANENT AND TEMPORARY VEGETATION:
INSPECT ALL AREAS THAT HAVE RECEIVED VEGETATION EVERY SEVEN DAYS & AFTER EVERY RAIN EVENT. ALL AREAS DAMAGED BY EROSION OR WHERE SEED HAS NOT ESTABLISHED SHALL BE REPAIRED AND RESTABILIZED IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE:
INSPECT THE ENTRANCE PAD EVERY SEVEN DAYS & AFTER EVERY RAIN EVENT. CHECK FOR MUD, SEDIMENT BUILD-UP AND PAD INTEGRITY. MAKE DAILY INSPECTIONS DURING WET WEATHER. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL. WASH AND REPLACE STONE AS NEEDED. THE STONE IN THE ENTRANCE SHOULD BE WASHED OR REPLACED WHENEVER THE ENTRANCE FAILS TO REDUCE MUD BEING CARRIED OFF-SITE BY VEHICLES. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. REMOVE TEMPORARY CONSTRUCTION ENTRANCE AS SOON AS THEY ARE NO LONGER NEEDED TO PROVIDE ACCESS TO THE SITE.

SILT FENCE:
INSPECT FOR DAMAGE EVERY SEVEN DAYS & AFTER EVERY RAIN EVENT. MAKE ALL REPAIRS IMMEDIATELY. REMOVE SEDIMENT FROM THE UP-SLOPE FACE OF THE FENCE BEFORE IT ACCUMULATES TO A HEIGHT EQUAL TO 1/3 THE HEIGHT OF THE FENCE. IF FENCE FABRIC TEARS, BEGINS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED SECTION OF FENCE IMMEDIATELY.

SOIL STOCKPILE:
INSPECT SEDIMENT CONTROL BARRIERS (SILT FENCE OR HAY BALE) AND VEGETATION FOR DAMAGE EVERY SEVEN DAYS & AFTER EVERY RAIN EVENT. MAKE ALL REPAIRS IMMEDIATELY. REMOVE SEDIMENT FROM THE UP-SLOPE FACE OF THE SEDIMENT CONTROL BARRIER BEFORE IT ACCUMULATES TO A HEIGHT EQUAL TO 1/3 THE HEIGHT OF THE SEDIMENT CONTROL BARRIER. IF SEDIMENT CONTROL BARRIER TEARS, BEGINS TO DECOMPOSE, OR IN ANYWAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED SECTION OF SEDIMENT CONTROL BARRIER IMMEDIATELY. REVEGETATE DISTURBED AREA TO STABILIZE SOIL STOCK PILE. REMOVE THE SEDIMENT CONTROL BARRIER WHEN THE SOIL STOCKPILE HAS BEEN REMOVED. REFER TO REMEDIAL ACTION WORK PLAN FOR SPECIFICATIONS REGARDING STOCKPILING OF CONTAMINATED SOILS.

DUST CONTROL:
SCHEDULE CONSTRUCTION OPERATIONS TO MINIMIZE THE AMOUNT OF DISTURBED AREAS AT ANY ONE TIME DURING THE COURSE OF WORK. APPLY TEMPORARY SOIL STABILIZATION PRACTICES SUCH AS MULCHING, SEEDING, AND SPRAYING (WATER). STRUCTURAL MEASURES (MULCH, SEEDING) SHALL BE INSTALLED IN DISTURBED AREAS BEFORE SIGNIFICANT BLOWING PROBLEMS DEVELOP. WATER SHALL BE SPRAYED AS NEEDED. REPEAT AS NEEDED, BUT AVOID EXCESSIVE SPRAYING, WHICH COULD CREATE RUNOFF AND EROSION PROBLEMS.

EROSION CONTROL BLANKET:
INSPECT THE BLANKET EVERY SEVEN DAYS & AFTER EVERY RAIN EVENT. REPLACE WIRE STAPLES AS REQUIRED. REPAIR AND RESEED WHERE CRACKS AND DAMAGED VEGETATION IS EVIDENT. WHEN DAMAGED BEYOND REPAIR OR NO LONGER FUNCTIONING, THE BLANKET SHALL BE REPLACED.

EARTH DIKE:
INSPECT ALL EARTH DIKES EVERY SEVEN DAYS & AFTER EVERY RAIN EVENT. ALL AREAS DAMAGED BY EROSION SHALL BE REPAIRED IMMEDIATELY.

STORM DRAIN INLET PROTECTION:
INSPECT ALL STORM DRAIN INLET PROTECTION DEVICES EVERY SEVEN DAYS & AFTER EVERY RAIN EVENT. MAKE REPAIRS AS NEEDED, REMOVE SEDIMENT FROM THE POOL AREA AS NECESSARY.

DEWATERING PITS:
IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION AND REQUIRES REMOVAL, GROUNDWATER WILL BE PUMPED , VIA SUBMERSIBLE PUMPS INTO APPROVED HOLDING CONTAINERS (NYSDOT RATED 55 GALLON DRUMS). CONTAINERS SHOULD BE STAGED ON SITE IN A SECURE, LOCKED AREA PENDING CHARACTERIZATION. Samples of THE CONTAINERIZED WATER SHALL BE COLLECTED AND ANALYZED TO DETERMINE THE APPROPRIATE DISPOSAL FACILITY. BASED ON THE RESULTS OF THE ANALYSIS THE ON-SITE REMEDIAL CONSULTANT WILL DETERMINE MEANS OF OFF-SITE DISPOSAL AND TREATMENT (AS REQUIRED).

SNOW AND ICE CONTROL:
PARKING LOTS, ROADWAYS, AND DRIVEWAYS ADJACENT TO WATER QUALITY FILTERS SHALL NOT BE SANDED DURING SNOW EVENTS DUE TO HIGH POTENTIAL FOR CLOGGING FROM SAND IN SURFACE WATER RUNOFF. USE SALT ONLY FOR SNOW AND ICE CONTROL.

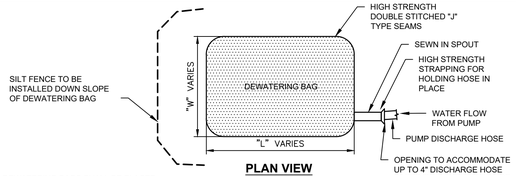
GENERAL NOTES:

1. EROSION AND SEDIMENT CONTROL MEASURES SHALL NOT BE PLACED IN PUBLIC ACCESS AREAS OR INTERFERE WITH PUBLIC ACCESS.
2. ALL OFF-SITE ROADS AND CORRIDORS SHALL BE KEPT CLEAN AT ALL TIMES DURING CONSTRUCTION. THIS SHALL INCLUDE STREET CLEANING AND SWEEPING OF PARKER AVENUE AND BROOKSVILLE AVENUE AS NEEDED OR DIRECTED BY THE REMEDIATION ENGINEER OR QUALIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL PERFORMING EROSION AND SEDIMENT CONTROL INSPECTION (QPESC). THE CONTRACTOR SHALL IMMEDIATELY CLEAN UP SPILLS OR TRACKED DEBRIS ON OR OFF-SITE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SNOW REMOVAL DURING THE COURSE OF CONSTRUCTION, TO INCLUDE ALL WORK AREAS AND ASSOCIATED PUBLIC ACCESS WAYS AND SIDEWALKS ALONG PROPERTY, CONSTRUCTION ACCESS CORRIDORS, AND STAGING AREAS.
4. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES PROTECT THE PUBLIC. OPEN TRENCHES, HOLES AND CONSTRUCTION OPERATIONS ARE TO BE SEPARATED FROM PUBLIC ACCESS WAYS BY CONSTRUCTION FENCE AND OTHER METHODS SET A PRUDENT DISTANCE FROM OPENINGS.
5. CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING OPERATIONS AS REQUIRED FOR CONSTRUCTION.
6. THE WORD "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.
7. CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY CHAIN LINK FENCE WITH SCREENING AROUND LIMITS OF WORK, AS APPROVED BY OWNER.

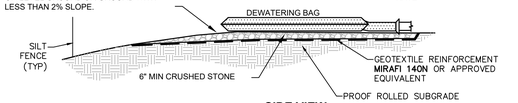
SPDES GENERAL PERMIT GP-0-20-001 COMPLIANCE NOTES:

THIS PLAN SET AND THE ACCOMPANYING SWPPP ENTITLED "SOUTH AVENUE MULTI-FAMILY DEVELOPMENT" WILL BE SUBMITTED AS A SET. THESE ENGINEERING DRAWINGS ARE CONSIDERED AN INTEGRAL PART OF THE SWPPP. THEREFORE THE PLAN SET IS NOT CONSIDERED COMPLETE WITHOUT THE SWPPP AND FOLLOWING DOCUMENTS.

1. REFER TO REQUIREMENTS OUTLINED IN THE MATERIALS MANAGEMENT, HEALTH AND SAFETY, AND EROSION & SEDIMENT CONTROL PLANS & NOTES PRIOR TO COMMENCEMENT OF WORK.



PLAN VIEW



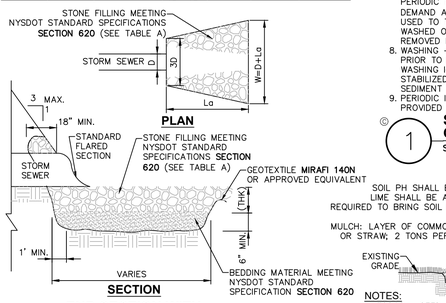
SIDE VIEW

NOTES:
1. SEDIMENT COLLECTION BAG SHALL BE EQUAL TO DIRTBAG® 55, AS MARKETED BY ACF ENVIRONMENTAL. RICHMOND. VIRGINIA (800-448-3636). OR APPROVED EQUIVALENT.
2. SEDIMENT COLLECTION BAG SHALL BE A NONWOVEN BAG SEWN WITH HIGH STRENGTH THREAD. THE SEAMS SHALL BE HIGH STRENGTH, DOUBLE STITCHED, "J" TYPE SEAMS.
3. BAGS SHALL HAVE SEWN IN FILL SPOUT LARGE ENOUGH TO ACCOMMODATE UP TO A 4" DISCHARGE HOSE. FILL SPOUT SHALL HAVE HIGH STRENGTH STRAPPING TO HOLD HOSE IN PLACE AND PREVENT PUMPED WATER FROM ESCAPING WITHOUT BEING FILTERED.
4. SEDIMENT COLLECTION BAGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS, OR AS DIRECTED BY THE ENGINEER.
5. SEDIMENT COLLECTED SHALL BE DISPOSED OF AT AN APPROPRIATE FACILITY.
6. SEDIMENT COLLECTION BAGS SHALL BE REMOVED AND REPLACED UNDER ANY OF THE FOLLOWING CONDITIONS:
   - WHEN BAGS ARE FULL.
   - WHEN BAGS HAVE BEEN IN PLACE FOR MORE THAN 30 DAYS (REMOVAL REQUIRED DUE TO ULTRAVIOLET DETERIORATION).
   - WHEN BAGS ARE DAMAGED.
4. ALL SEDIMENT COLLECTION BAGS SHALL BE INSPECTED DAILY BY THE CONTRACTOR.
5. CARE SHALL BE TAKEN DURING REMOVAL TO MINIMIZE LOSS OF ENTRAPPED SEDIMENT.

© 7 **SEDIMENT COLLECTION DEWATERING BAG DETAIL**
SCALE: NOT TO SCALE

STONE APRON SIZING REQUIREMENT - TABLE "A"

CULVERT DIA. (D)	CULVERT SLOPE, %	NYSDOT STANDARD STONE FILLING APRON MATERIAL	d50	dMAX	MINIMUM APRON THICKNESS (IN)	MINIMUM OUTLET APRON LENGTH(FT) (Lo)
12"	< 8	LIGHT	6"	9"	18	10
	8-10	MEDIUM	9"-12"	14"-18"	24	10
18"	< 4	LIGHT	6"	9"	18	10
	4-6	MEDIUM	9"-12"	14"-18"	24	12
	6-8	HEAVY	15"-18"	22"-27"	36	12
	8-10	HEAVY	15"-18"	22"-27"	36	18
24"	< 3	LIGHT	6"	9"	18	12
	3-4	MEDIUM	9"-12"	14"-18"	24	16
	4-8	HEAVY	15"-18"	22"-27"	36	24
30"	< 1	LIGHT	6"	9"	18	15
	1-2	MEDIUM	9"-12"	14"-18"	24	20
	2-4	HEAVY	15"-18"	22"-27"	36	25
	4-6	HEAVY	15"-18"	22"-27"	36	30
36"	< 2	MEDIUM	9"-12"	14"-18"	24	24
	2-3	HEAVY	15"-18"	22"-27"	36	30
	3-5	HEAVY	15"-18"	22"-27"	36	36
42"	< 1	MEDIUM	9"-12"	14"-18"	24	28
	1-2	HEAVY	15"-18"	22"-27"	36	35
	2-3	HEAVY	15"-18"	22"-27"	36	42
48"	< 1	MEDIUM	9"-12"	14"-18"	24	32
	1-2	HEAVY	15"-18"	22"-27"	36	40
	2-3	HEAVY	15"-18"	22"-27"	36	48



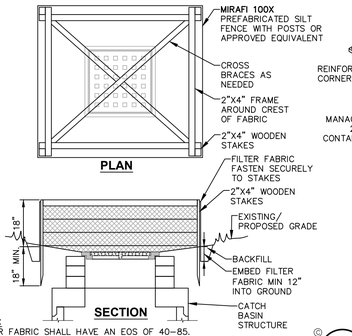
PLAN

SECTION

© 3 **END SECTION WITH STONE LINED APRON DETAIL**
SCALE: NOT TO SCALE

CONSTRUCTION SEQUENCING NOTES:

1. PRIOR TO COMMENCING ANY CLEARING, GRUBBING, EARTHWORK ACTIVITIES, ETC.AT THE SITE, THE CONTRACTOR SHALL FLAG THE WORK LIMITS AND SHALL INSTALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES (I.E. SILT FENCES, TREE PROTECTION/BARRIER FENCES, STABILIZED CONSTRUCTION ENTRANCES, STORM DRAIN SEDIMENT FILTERS, DRAINAGE DITCH SEDIMENT FILTERS, ETC.) INDICATED ON THE PROJECT DRAWINGS. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THEIR TRIBUTARY AREAS.
2. THE CONTRACTOR SHALL CLEAR AND GRUB THE AREA OF THE STORMWATER MANAGEMENT FACILITIES. THIS AREA SHALL NOT EXCEED FIVE (5) ACRES IN EXTENT WITHOUT TEMPORARY STABILIZATION.
3. THE CONTRACTOR SHALL COMMENCE SITE CONSTRUCTION ACTIVITIES INCLUDING CLEARING & GRADING OF THE PROPOSED AREA OF DISTURBANCE AS REQUIRED.
4. INSTALL PROTECTIVE MEASURES AT THE LOCATIONS OF ALL GRATE INLETS, CURB INLETS, AND AT THE ENDS OF ALL EXPOSED STORM SEWER PIPES.
5. CONSTRUCT ALL UTILITIES, CURB AND GUTTER, GUTTER INLETS, AREA INLETS, AND STORM SEWER MANHOLES, AS SHOWN ON THE PLANS. INLET PROTECTION MAY BE REMOVED TEMPORARILY FOR THIS CONSTRUCTION. PLACE REQUIRED RIP-RAP AT LOCATIONS SHOWN ON THE PLANS.
6. FINALIZE PAVEMENT SUB-GRADE PREPARATION.
7. REMOVE PROTECTIVE MEASURES AROUND INLETS AND MANHOLES NO MORE THAN 24 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
8. INSTALL SUB-BASE MATERIAL AS REQUIRED FOR PAVEMENT.
9. PRIOR TO FINALIZING CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITY, ALL CATCH BASINS AND DRAINAGE LINES SHALL BE CLEANED OF ALL SILT AND SEDIMENT.
10. UPON COMPLETION OF SITE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL FINALIZE CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITY. CONTRACTOR SHALL FINISH GRADE THE FORBAY(S) AND STABILIZE AS INDICATED IN THE PROJECT DRAWINGS.
11. THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND IMMEDIATELY ESTABLISH PERMANENT VEGETATION ON THE AREAS DISTURBED DURING THEIR REMOVAL.

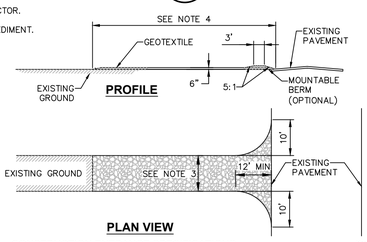


PLAN

SECTION

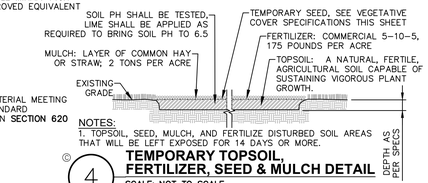
NOTES:
1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85.
2. CUT FABRIC FROM CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED, OVERLAP TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x4" WOOD OR EQUIVALENT, WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE MINIMUM 18" DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2"x4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVERFLOW STABILITY.
7. MAXIMUM DRAINAGE AREA IS 1 ACRE.
8. INLET PROTECTION SHALL REMAIN IN-PLACE UNTIL SITE HAS BEEN STABILIZED.

© 6 **TEMPORARY OUT OF PAVEMENT FILTER FABRIC DROP INLET PROTECTION DETAIL**
SCALE: NOT TO SCALE



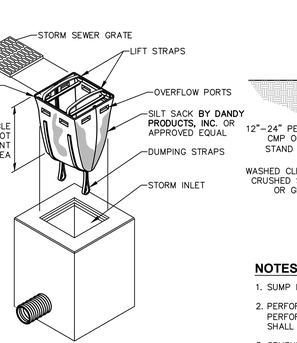
CONSTRUCTION ENTRANCE SPECIFICATIONS:
1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. THICKNESS - NOT LESS THAN SIX (6) INCHES.
3. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY FOUR (24) FEET IF SINGLE ENTRANCE TO SITE.
4. LENGTH - NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH WOULD APPLY).
5. GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

© 1 **STABILIZED CONSTRUCTION ACCESS DETAIL**
SCALE: NOT TO SCALE

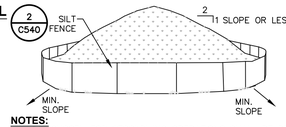


NOTES:
1. TOPSOIL, SEED, MULCH, AND FERTILIZE DISTURBED SOIL AREAS THAT WILL BE LEFT EXPOSED FOR 14 DAYS OR MORE.

© 4 **TEMPORARY TOPSOIL, FERTILIZER, SEED & MULCH DETAIL**
SCALE: NOT TO SCALE

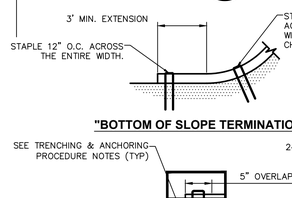


© 8 **SILT SACK DETAIL**
SCALE: NOT TO SCALE

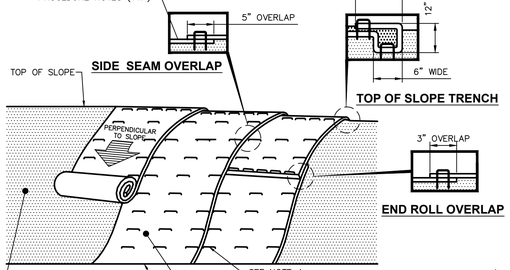


NOTES:
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1V:2H.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE SPECIFICATIONS FOR INSTALLATION OF SILT FENCE.

© 9 **TEMPORARY SOIL STOCKPILE DETAIL**
SCALE: NOT TO SCALE



"BOTTOM OF SLOPE TERMINATION"



NOTES:
1. PREPARE THE TOPSOIL (SEEDBED) FIRST BY RAKING, SHAPING, FINE GRADING, COMPACTING, SEEDING & FERTILIZING THE SLOPES.
2. USE THE TRENCHING & ANCHORING PROCEDURES DETAILED HEREIN TO SECURE ANY EXPOSED MATERIAL ENDS. SECURE ALL PRODUCT OVERLAPS. OVERLAP IN THE DIRECTION OF WATER FLOW, PERPENDICULAR TO THE SLOPE.
3. KEEP EROSION CONTROL BLANKET IN SOLID CONTACT WITH THE TOPSOIL.
4. USE THE REQUIRED NUMBER OF STAPLES/STAKES TO SECURELY FASTEN THE EROSION CONTROL BLANKET TO THE SLOPE. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLES/STAKES LENGTHS GREATER THAN 6" MAYBE NECESSARY FOR PROPER SECURING. STAPLE PATTERNS & OVERLAPS ARE DEPENDENT ON SITE CONDITIONS & MANUFACTURER'S REQUIREMENTS. CONTRACTOR SHALL CONSULT WITH MANUFACTURER FOR ACTUAL SITE SPECIFIC REQUIREMENTS.

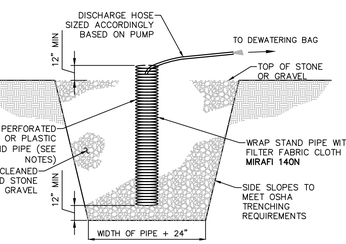
TRENCHING & ANCHORING PROCEDURE NOTES:

SIDE SEAM OVERLAP: THE EDGES OF PARALLEL BLANKETS SHALL BE STAPLED WITH A 5" OVERLAP.

TOP OF SLOPE TRENCH: BEGIN AT THE TOP OF SLOPE BY ANCHORING THE EROSION CONTROL BLANKET IN A 6"D x 6"W TRENCH WITH A 12" OVERLAP EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR WITH A ROW OF STAPLES/STAKES 12" O.C. IN THE BOTTOM OF THE TRENCH. BACKFILL & COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL & FOLD THE REMAINING 12" PORTION OF THE EROSION CONTROL BLANKET BACK OVER THE SEED & COMPACTED SOIL. SECURE THE EROSION CONTROL BLANKET OVER THE COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED 12" O.C. ACROSS THE ENTIRE WIDTH.

END ROLL OVERLAP: CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE SHALL BE PLACED END OVER END (SHINGLE-STYLE) WITH A 3" OVERLAP. STAPLE THRU OVERLAPPED AREAS, 12" APART ACROSS THE ENTIRE WIDTH.

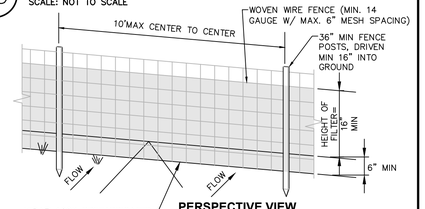
© 5 **EROSION CONTROL BLANKET INSTALLATION DETAIL**
SCALE: NTS



TYPICAL SECTION OF SUMP PIT

NOTES:
1. SUMP PIT QUANTITY & LOCATION SHALL BE DETERMINED BY CONTRACTOR.
2. PERFORATIONS IN THE STANDPIPE SHALL BE EITHER CIRCULAR OR SLOTS. PERFORATION SIZE SHALL NOT EXCEED 1/2" INCH DIAMETER. PUMP RATE SHALL NOT EXCEED INFLOW RATE INTO STAND PIPE.
3. CRUSHED STONE OR GRAVEL SHALL BE NYSDOT #2 SIZE OR EQUIVALENT AND SHALL BE WASHED PRIOR TO PLACEMENT WITHIN SUMP.
4. DISCHARGE SHALL BE THROUGH DEWATERING BAGS, OR AS DIRECTED BY ENGINEER.
5. CONTRACTOR TO SUBMIT DEWATERING PLAN TO ENGINEER FOR REVIEW & APPROVAL.

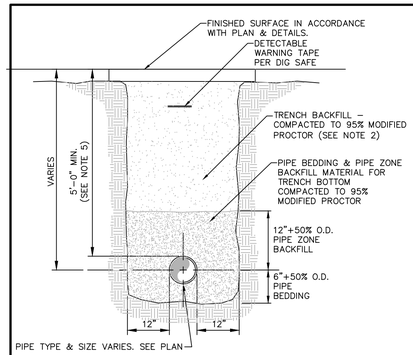
© 10 **DEWATERING & SUMP PIT DETAIL**
SCALE: NOT TO SCALE



PERSPECTIVE VIEW

SECTION

NOTES:
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL "T" OR "U" TYPE OR HARDWOOD.
2. FILTER FABRIC TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAX MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIALS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. MAXIMUM DRAINAGE AREA FOR OVERLAND FLOW TO A SILT FENCE SHALL NOT EXCEED 1/



NOTES:

1. PIPE BEDDING & PIPE ZONE BACKFILL SHALL BE A NATURAL RUN-OF-BANK (R.O.B.) SAND OR A MIXTURE OF CRUSHED STONE AND GRAVEL, FREE OF SOFT, NONDURABLE PARTICLES, ORGANIC MATERIALS AND ELONGATED PARTICLES, AND SHALL BE WELL GRADED FROM FINE TO COARSE PARTICLES. BEDDING GRADATIONS SHALL BE APPROVED BY THE ENGINEER AND SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING
3/4"	100%
NO. 40	0-70%
NO. 200	0-10%

2. TRENCH BACKFILL SHALL BE A NATURAL RUN-OF-BANK (R.O.B.) OR PROCESSED GRAVEL, OR EXCAVATED MATERIAL FREE OF SOFT, NONDURABLE PARTICLES, ORGANIC MATERIALS AND ELONGATED PARTICLES, AND SHALL BE WELL GRADED FROM FINE TO COARSE PARTICLES. TRENCH BACKFILL GRADATIONS SHALL BE APPROVED BY THE ENGINEER AND SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING
4"	100%
NO. 40	0-70%
NO. 200	0-10%

IN NON-TRAFFIC UNPAVED AREAS TRENCH BACKFILL CAN BE MATERIALS EXCAVATED FROM THE TRENCH AS APPROVED BY THE ENGINEER AND COMPACTED TO 90% MODIFIED PROCTOR.

3. INSTALL CONTINUOUS DETECTABLE MARKING TAPE DURING BACKFILLING OF TRENCH FOR UNDERGROUND PIPING. LOCATE TAPE 12" BELOW FINISHED GRADE, DIRECTLY OVER PIPING, EXCEPT 6" BELOW SUBGRADE UNDER PAVEMENTS & SLAB.

4. TRENCHING SHALL BE IMPLEMENTED IN ACCORDANCE WITH O.S.H.A. STANDARDS.

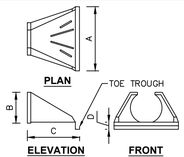
5. 5'-0" MIN COVER SHALL BE APPLIED TO WATER MAIN OR SANITARY SEWER FORCE MAINS ONLY.

6. DEWATERING:

7. TRENCH BOX:

1 PIPE TRENCH DETAIL (TYPICAL)
SCALE: NOT TO SCALE

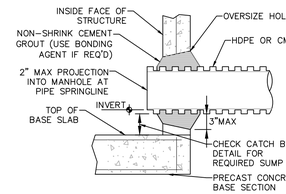
TYPICAL HDPE END SECTION				
PIPE DIA.	END SECTION DIMENSIONS			
	A	B	C	D
12"	42"	14"	34"	6"
15"	42"	17"	34"	6"
18"	59"	21"	48"	6"
24"	59"	27"	48"	6"
30"	82"	34"	58"	6"
36"	82"	41"	58"	6"



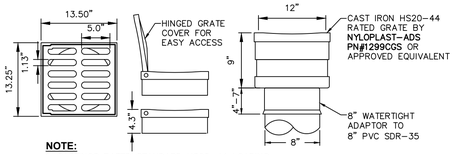
NOTES:

1. SCOPE: THIS SPECIFICATION DESCRIBES 12" THROUGH 36"-INCH ADS FLARED END SECTIONS FOR USE IN CULVERT AND DRAINAGE OUTLET APPLICATIONS. FES LARGER THAN 36" SHALL USE CIRCULAR CORRUGATED METAL FLARED END SECTIONS.
2. REQUIREMENTS: THE INVERT OF THE PIPE AND THE END SECTION SHALL BE AT THE SAME ELEVATION. THE ADS FLARED END SECTION SHALL BE HIGH DENSITY POLYETHYLENE MEETING **ASTM D3350** MINIMUM CELL **CLASSIFICATION 213320C**; CONTACT MANUFACTURER FOR ADDITIONAL CELL CLASSIFICATION INFORMATION. WHEN PROVIDED, THE METAL THREADED FASTENING ROD SHALL BE STAINLESS STEEL.
3. INSTALLATION: INSTALLATION SHALL BE IN ACCORDANCE WITH ADS INSTALLATION INSTRUCTIONS AND WITH THOSE ISSUED BY STATE OR LOCAL AUTHORITIES. CONTACT YOUR LOCAL ADS REPRESENTATIVE OR VISIT WWW.ADS-PIPE.COM FOR THE LATEST INSTALLATION INSTRUCTIONS.
4. PROVIDE TRASH RACK ONLY WHERE SPECIFIED ON SITE PLANS.

5 TYPICAL END SECTION - HDPE
SCALE: NOT TO SCALE



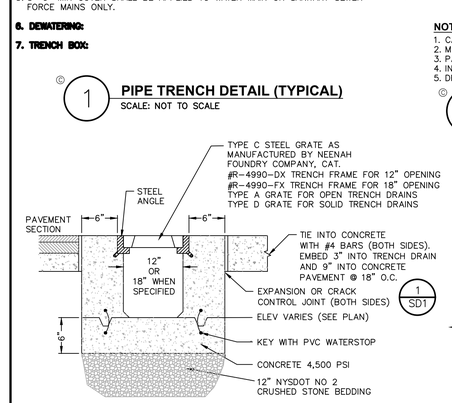
2 PIPE CONNECTION TO DRAINAGE STRUCTURE- CMP OR HDPE CEMENT GROUT SEAL JOINT
SCALE: NOT TO SCALE



NOTE:

1. CASTINGS RATED STANDARD HS20-44 LOADING
2. MATERIAL SHALL CONFORM TO **ASTM A48-CLASS 30B**
3. PAINT: CASTINGS TO BE FURNISHED WITH A BLACK PAINT
4. IN-LINE DRAIN BY NYLOPLAST OR APPROVED EQUIVALENT
5. DRAIN AREA = 62.7 SQ. INCH

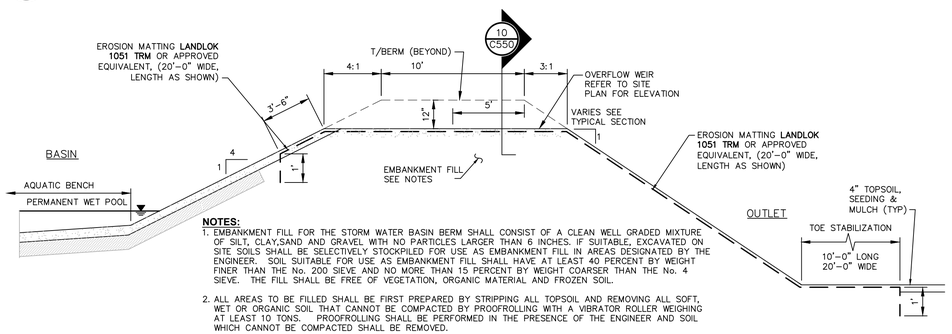
3 12" IN-LINE DRAIN & GRATE
SCALE: NOT TO SCALE



NOTES:

1. DEPTH OF TRENCH DRAINS VARY. SEE GRADING AND DRAINAGE PLAN FOR DIMENSIONS OF EACH INDIVIDUAL TRENCH DRAIN.
2. ALL GRATES SHALL BE "BICYCLE SAFETY" APPROVED.
3. PROVIDE HORIZONTAL OUTLET END PLATES AT DOWNSTREAM END OF EACH TRENCH DRAIN.

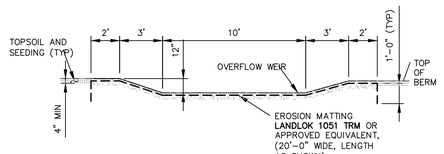
4 TRENCH DRAIN DETAIL
SCALE: NOT TO SCALE



NOTES:

1. EMBANKMENT FILL FOR THE STORM WATER BASIN BERM SHALL CONSIST OF A CLEAN WELL GRADED MIXTURE OF SILT, CLAY,SAND AND GRAVEL WITH NO PARTICLES LARGER THAN 6 INCHES. IF SUITABLE, EXCAVATED ON SITE SOILS SHALL BE SELECTIVELY STOCKPILED FOR USE AS EMBANKMENT FILL IN AREAS DESIGNATED BY THE ENGINEER. SOIL SUITABLE FOR USE AS EMBANKMENT FILL SHALL HAVE AT LEAST 40 PERCENT BY WEIGHT FINER THAN THE No. 200 SIEVE AND NO MORE THAN 15 PERCENT BY WEIGHT COARSER THAN THE No. 4 SIEVE. THE FILL SHALL BE FREE OF VEGETATION, ORGANIC MATERIAL AND FROZEN SOIL.
2. ALL AREAS TO BE FILLED SHALL BE FIRST PREPARED BY STRIPPING ALL TOPSOIL AND REMOVING ALL SOFT, WET OR ORGANIC SOIL THAT CANNOT BE COMPACTED BY PROOFROLLING WITH A VIBRATOR ROLLER WEIGHING AT LEAST 10 TONS. PROOFROLLING SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER AND SOIL WHICH CANNOT BE COMPACTED SHALL BE REMOVED.
3. ALL FILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS WHEN LOOSE AND BE COMPACTED TO A DENSITY OF AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH **ASTM-1557**. ROUGH UP SUBGRADE TO BLEND WITH FIRST LIFT.

9 TYPICAL SECTION THRU OVERFLOW WEIR
SCALE: NOT TO SCALE



NOTES:

1. SEE LANDLOCK "INSTALLATION GUIDELINES" FOR EMERGENCY OVERFLOW WEIR EROSION CONTROL INSTALLATION.

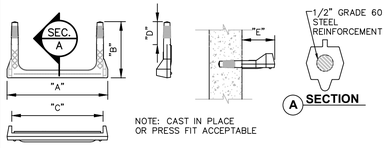
10 SECTION THRU STORM WATER MANAGEMENT BASIN OVER FLOW WEIR
SCALE: NOT TO SCALE

ACCEPTABLE MANHOLE STEPS

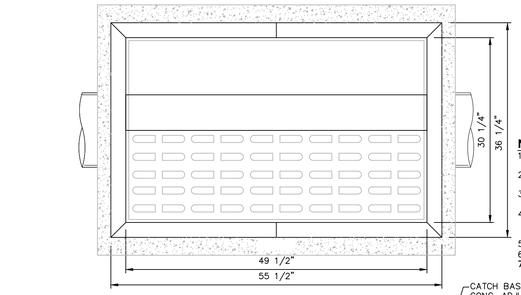
MANUFACTURER	PATTERN NUMBER	"A" STEP WIDTH	"B" LEG LENGTH	"C" RUNG CLEAR	"D" EMBED-MENT	"E" RUNG CLEAR
M.A. INDUSTRIES INC*	**PS2-PF**	14 3/4	9 1/4	13 3/4	3 3/8	5 7/8
M.A. INDUSTRIES INC*	**PS2-PFS**	14 3/4	8 1/4	13 3/4	3 3/8	4 7/8

* OR EQUIVALENT

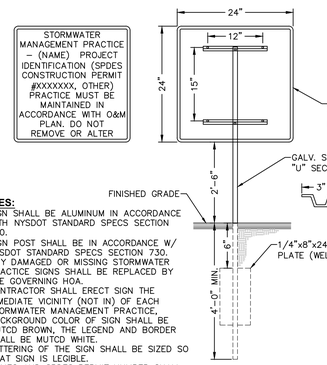
MH STEP DESIGN AND INSTALLATION SHALL COMPLY WITH ALL OSHA REGULATIONS



6 COPOLYMER POLYPROPYLENE MH STEP
SCALE: NOT TO SCALE



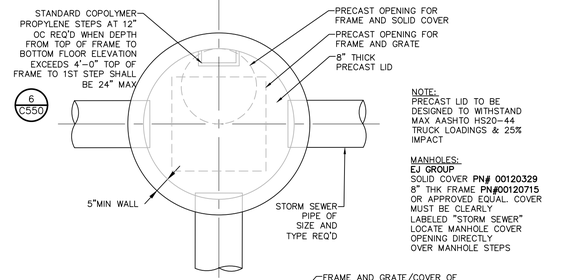
7 PRECAST CONCRETE RECTANGULAR CATCH BASIN DETAIL
SCALE: NOT TO SCALE



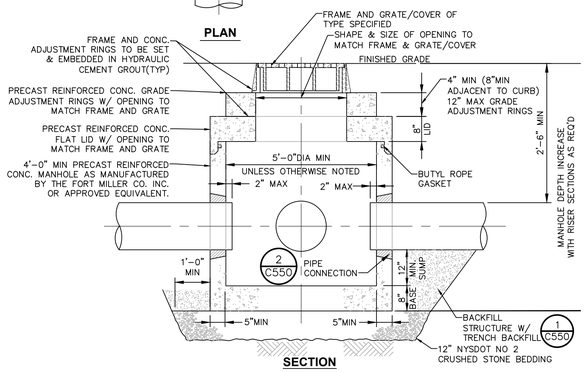
NOTES:

1. SIGN SHALL BE ALUMINUM IN ACCORDANCE WITH NYSDOT STANDARD SPECS SECTION 730.
2. SIGN POST SHALL BE IN ACCORDANCE W/ NYSDOT STANDARD SPECS SECTION 730.
3. ANY DAMAGED OR MISSING STORMWATER PRACTICE SIGNS SHALL BE REPLACED BY THE GOVERNING HOA.
4. CONTRACTOR SHALL ERECT SIGN THE IMMEDIATE VICINITY (NOT IN) OF EACH STORMWATER MANAGEMENT PRACTICE.
5. BACKGROUND COLOR OF SIGN SHALL BE MUTCD BROWN, THE LEGEND AND BORDER SHALL BE MUTCD WHITE.
6. LETTERING OF THE SIGN SHALL BE SIZED SO THAT SIGN IS LEGIBLE.
7. NAMES AND SPDES PERMIT NUMBER SHALL BE OBTAINED BY CONTRACTOR FROM PLANS AND ISSUED SPDES CONSTRUCTION PERMIT.

8 STORMWATER MANAGEMENT PRACTICE PERMANENT SIGN
SCALE: NOT TO SCALE



PLAN



SECTION

NOTES:

1. STRUCTURE SHALL BE PRECAST CONCRETE. DESIGNED FOR HS20-44 VEHICULAR LOADING AND 25% IMPACT.
2. FRAME AND COVER SHALL BE DESIGNED FOR HS20-44 VEHICULAR LOADING & 25% IMPACT.
3. CONCRETE CATCH BASIN LID CLEAR OPENING DIMENSION MUST MATCH FRAME AND GRATE CLEAR OPENING DIMENSION.
4. STRUCTURES HAVING A DEPTH GREATER THAN 48" FROM FINISHED SURFACE TO THE FLOOR OF THE CONCRETE BASE SHALL BE PROVIDED WITH STEPS.
5. BACKFILL USING TRENCH BACKFILL, COMPACTED IN 6" LIFTS.
6. SUMPS FOR CATCH BASINS SHALL BE 12".
7. ECCENTRIC CONE TOP CAN BE USED FOR MANHOLES DEPTH GREATER THAN 7 FEET.
8. SEE CHART FOR REQUIRED MANHOLE DIAMETERS.
9. ALL PRECAST CONSTRUCTION IN ACCORDANCE W/**ASTM C478**
10. ALL PRECAST CONCRETE SHALL BE COATED INSIDE AND OUTSIDE (TOP ONLY) WITH A CLEAR POLYMER RESIN.
11. MH #1 IS 6' IN DIAMETER.

9 PRECAST CONCRETE MANHOLE - 5' DIAMETER DETAIL
SCALE: NOT TO SCALE

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Poughkeepsie, NY 12601
(845) 454-3980

labellapc.com

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

1	01/27/23	NO CHANGES THIS SHEET
NO:	DATE:	DESCRIPTION:
Revisions		

PROJECT NAME & LOCATION:

SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

STORM SEWER DETAILS

DRAWING NUMBER:

C550

3/7/2023 1:25:33 PM
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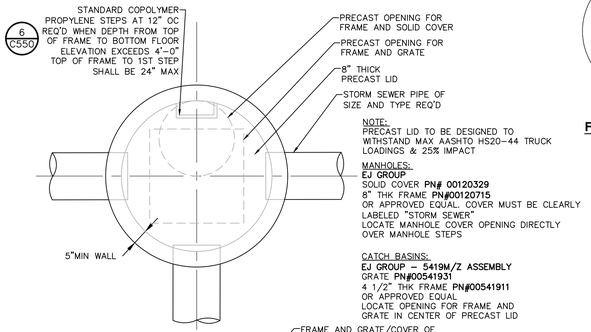
Drawing Name: Z:\2022projects\ARGO\2222201 - South Ave Multi Family Dev\06_Drawings\Civil\01_C550_C551_2222201_STORMD.dwg
Xref's Attached: XBORDER_2222201; XENG_2222201
Date Printed: Mar 07, 2023, 1:25pm

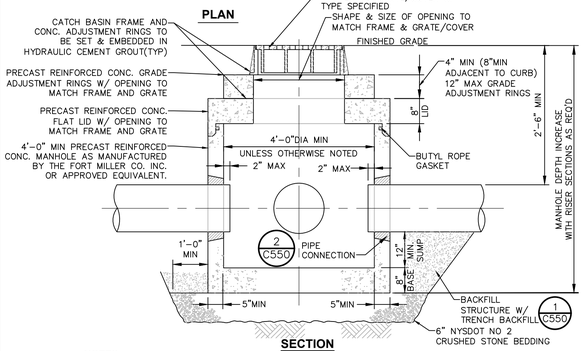


NOTE:
PRECAST LID TO BE DESIGNED TO WITHSTAND MAX AASHTO HS20-44 TRUCK LOADINGS & 25% IMPACT

MANHOLES:
EJ GROUP
SOLID COVER **PN# 00120329**
8" THK FRAME **PN#00120715**
OR APPROVED EQUAL. COVER MUST BE CLEARLY LABELED "STORM SEWER"
LOCATE MANHOLE COVER OPENING DIRECTLY OVER MANHOLE STEPS

CATCH BASINS:
EJ GROUP – 5419M/Z ASSEMBLY
GRATE **PN#00541931**
4 1/2" THK FRAME **PN#00541911**
OR APPROVED EQUAL
LOCATE OPENING FOR FRAME AND GRATE IN CENTER OF PRECAST LID

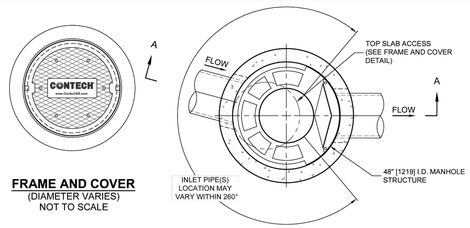
PLAN



SECTION

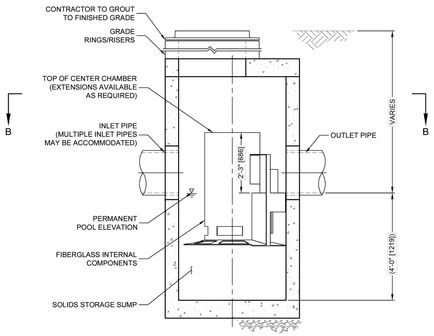
NOTES:
1. CATCH BASIN SHALL BE PRECAST CONCRETE. DESIGNED FOR HS20-44 VEHICULAR LOADING AND 25% IMPACT.
2. FRAME AND COVER SHALL BE DESIGNED FOR HS20-44 VEHICULAR LOADING & 25% IMPACT.
3. CONCRETE CATCH BASIN LID CLEAR OPENING DIMENSION MUST MATCH FRAME AND GRATE CLEAR OPENING DIMENSION.
4. CATCH BASINS HAVING A DEPTH GREATER THAN 48" FROM FINISHED SURFACE TO THE FLOOR OF THE CONCRETE BASE SHALL BE PROVIDED WITH STEPS.
5. BACKFILL USING TRENCH BACKFILL, COMPACTED IN 6" LIFTS.
6. SUMPS FOR CATCH BASINS SHALL BE 12".
7. ECCENTRIC CONE TOP CAN BE USED FOR MANHOLES DEPTH GREATER THAN 7 FEET.
8. SEE CHART FOR REQUIRED MANHOLES / CATCH BASINS DIAMETERS.
9. ALL PRECAST CONSTRUCTION IN ACCORDANCE W/**ASTM C478**

© 1 **PRECAST CONCRETE CATCH BASIN/MANHOLE DETAIL**
SCALE: NOT TO SCALE



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

PLAN VIEW B-B
NOT TO SCALE

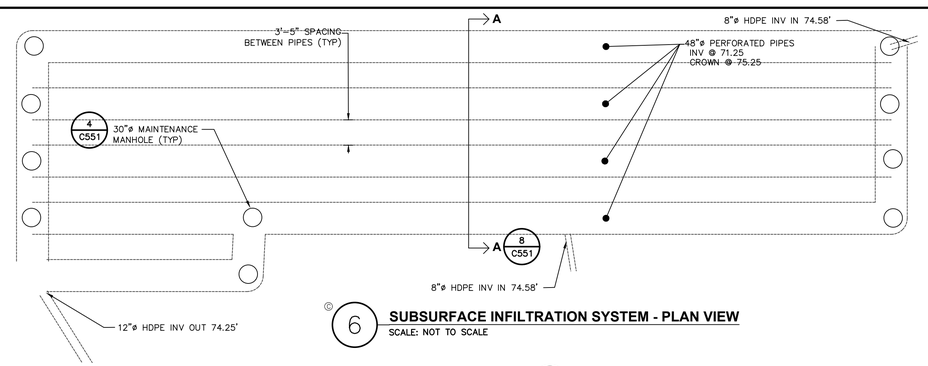


ELEVATION A-A
NOT TO SCALE

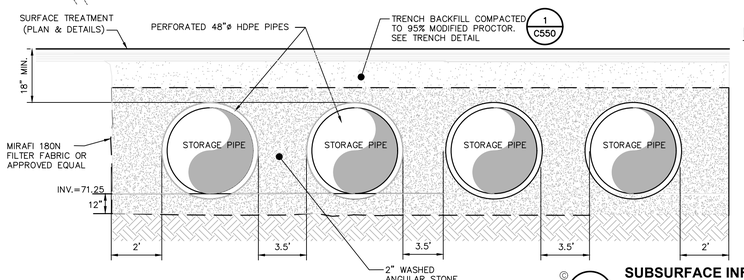
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

© 2 **CONTECH CS-4 HYDRODYNAMIC SEPERATOR**
SCALE: NOT TO SCALE



© 6 **SUBSURFACE INFILTRATION SYSTEM - PLAN VIEW**
SCALE: NOT TO SCALE



SECTION A-A

© 8 **SUBSURFACE INFILTRATION SYSTEM - SECTION VIEW**
SCALE: NOT TO SCALE

NOTES:
1. PIPE BEDDING MATERIAL SHALL BE COMPOSED OF CRUSHED STONE OR GRAVEL FREE OF SOFT NONDURABLE PARTICLES, ORGANIC MATERIALS AND THIN OR ELONGATED PARTICLES WITH THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING
3/4"	100
3/8"	95–100
1/4"	0–15
No. 40	0–5

2. ALL CONNECTIONS SHALL BE WATERTIGHT AND PROVIDED TO ENGINEER FOR REVIEW.
3. HEADERS, MAINTENANCE MANHOLE/BARREL CONNECTIONS, INLET/BARREL CONNECTIONS, INLET/MAINTENANCE MANHOLE/ BARREL CONNECTIONS, SHALL BE PRE-FABRICATED BY MANUFACTURER.
4. MAINTENANCE SHALL BE IN ACCORDANCE WITH SWPPP.

SECTION A-A

NOTES:
1. PIPE BEDDING MATERIAL SHALL BE COMPOSED OF CRUSHED STONE OR GRAVEL FREE OF SOFT NONDURABLE PARTICLES, ORGANIC MATERIALS AND THIN OR ELONGATED PARTICLES WITH THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING
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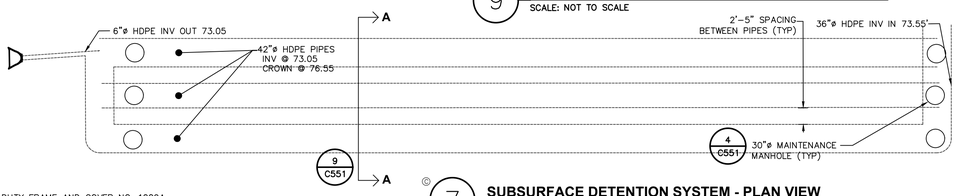
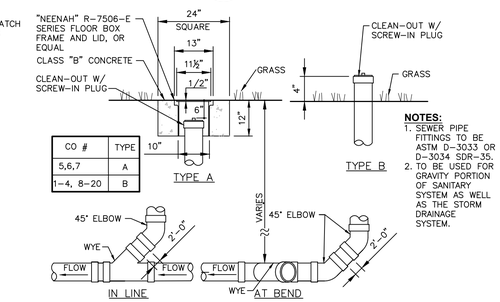
4. MAINTENANCE SHALL BE IN ACCORDANCE WITH SWPPP.

© 9 **SUBSURFACE DETENTION SYSTEM - SECTION VIEW**
SCALE: NOT TO SCALE



© 7 **SUBSURFACE DETENTION SYSTEM - PLAN VIEW**
SCALE: NOT TO SCALE

PLAN



CO #	TYPE
5,6,7	A
1-4, 8-20	B

NOTES:
1. SEWER PIPE FITTINGS TO BE ASTM D-3033 OR D-3034 SDR-35.
2. TO BE USED FOR GRAVITY PORTION OF SANITARY SYSTEM AS WELL AS THE STORM DRAINAGE SYSTEM.

© 11 **CLEAN OUT - NON TRAFFIC AREA**
SCALE: NOT TO SCALE

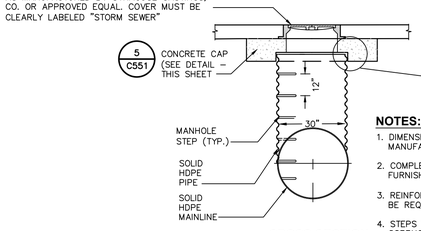
NOTES:
1. BIORETENTION AREA SHALL BE SURROUNDED WITH SILT FENCE BARRIER AND BARRIER SHALL NOT BE REMOVED UNTIL ALL UPSTREAM AREAS ARE STABILIZED.
2. BACK FILLING OF BIORETENTION FACILITY SHALL BE PLACED IN 12" LIFTS.
3. MAIN COLLECTOR PIPE OF THE UNDER DRAIN SYSTEM SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS OR CLEAN OUT PIPES MUST BE PLACED EVERY 1000SF OF SURFACE AREA.
4. BIORETENTION AREA MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.
5. PIPE SHALL BE SCHEDULE 40 3/8" PERFORATED AT 6" ON CENTER, 4 HOLES PER ROW
6. BASIN FLOOR SEEDING TO BE BIORETENTION BASIN FLOOR MIX APPROVED BY ENGINEER.
7. INSPECT AND REPAIR/REPLACE TREATMENT AREA COMPONENTS AFTER SIGNIFICANT RAIN EVENTS.
8. BIORETENTION AREA SHALL NOT BE USED AS SEDIMENT TRAP. RUNOFF SHALL NOT BE DISCHARGED TO BIORETENTION AREA UNTIL VEGETATIVE COVER IS ESTABLISHED.
9. BIORETENTION AREA 1 SHALLE HAVE A MEDIA DEPTH OF 4.0' AND BIORETENTION AREA 2 SHALL HAVE A MEDIA DEPTH OF 2.5'.

MATERIALS SPECIFICATION FOR BIORETENTION

PARAMETERS	SPECIFICATIONS	SIZE	NOTES:
SEEDING SOIL: ERNMX-126 RETENTION BASIN FLOOR SEEDING-LOW MAINTENANCE	SAND 35–60% SILT 30-55% CLAY 10–25%	N/A	USDA SOIL TYPES LOAMY SAND, SANDY LOAM OR LOAM
UNDERDRAIN	PEA GRAVEL: ASTM D 448 ORNAMENTAL STONE: WASHED, COBBLES	PEA GRAVEL: NO 6 STONE: 2"–5"	
GEOTEXTILE	CLASS "C" APPARENT OPENING SIZE (ASTM-D-4751) GRAB TENSILE STRENGTH (ASTM-D-4632) BURST STRENGTH (ASTM-D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	AASHTO M-43. NO. 67.	0.25" – 0.75"	3/8" PERF. @ 6" O.C. 4 HOLES PER ROW, MINIMUM OF 3" GRAVEL OVER PIES. NOT NECESSARY UNDERNEATH PIPES
UNDERDRAIN PIPING	ASTM D 1785 OR AASHTO M-278	6" RIGID SCHEDULE 40 PVC	3/8" PERF. @ 6" O.C., 4 HOLES PER ROW

© 3 **BIORETENTION DETAIL**
SCALE: NTS

HEAVY DUTY FRAME AND COVER NO. 1009A AS MANUFACTURED BY SYRACUSE CASTINGS, CO. OR APPROVED EQUAL. COVER MUST BE CLEARLY LABELED "STORM SEWER"

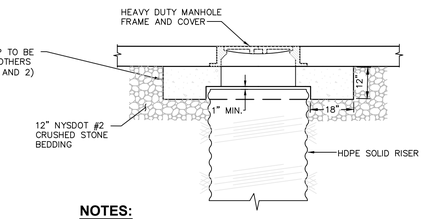


NOTES:
1. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
2. COMPLETE SHOP DRAWINGS SHALL BE FURNISHED FOR FABRICATION.
3. REINFORCEMENT AND/OR SLIP JOINT MAY BE REQUIRED FOR MANHOLE RISER.
4. STEPS TO EXTEND TO BOTTOM OF CORRUGATED PIPE.

CROSS-SECTION

AN ALUMINUM WARNING PLATE SHALL BE RIVETED OR OTHERWISE PERMANENTLY ATTACHED TO EACH ACCESS COVER. THE PLATE SHALL BE A MINIMUM OF 12"x12" AND SHALL BE ENGRAVED WITH THE FOLLOWING LANGUAGE: "WARNING: CONFINED SPACE – ENTRY PROHIBITED WITHOUT AUTHORIZATION – CALL OWNER FOR APPROVAL TO ACCESS". VENTILATION SHALL CONFORM TO EXISTING LOCAL AND/OR STATE CODES AND AS PER SECTION 6.2.5 OF "RECOMMENDED STANDARDS FOR WATER WORKS LATEST EDITION (TEN STATES STANDARDS)

© 4 **MAINTENANCE MANHOLE DETAIL**
SCALE: NOT TO SCALE



NOTES:
1. THE CONCRETE CAP SHALL BE SIZED AND DESIGNED SO THAT LOADS ARE TRANSMITTED TO THE SOIL AND NOT THE RISER. DESIGN FOR H-20 LOADING.
2. THE CONCRETE CAP SHALL BE SIZED TO PROVIDE AN ADEQUATE BOTTOM AREA BASED ON THE ALLOWABLE BEARING CAPACITY OF THE SOIL.

© 5 **CONCRETE CAP**
SCALE: NOT TO SCALE

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

1	01/27/23	NO CHANGES THIS SHEET
NO:	DATE:	DESCRIPTION:
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

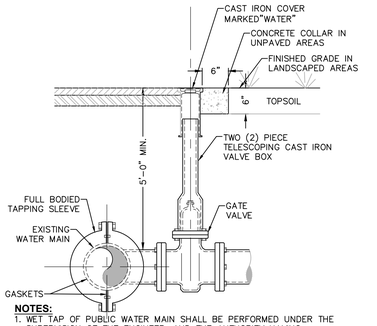
STORM SEWER DETAILS

DRAWING NUMBER:

C551

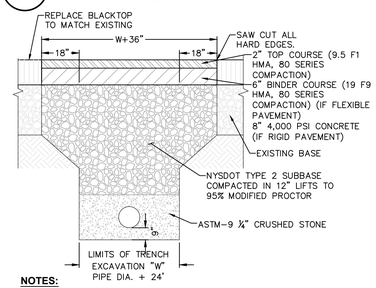
3/7/2023 1:25:55 PM Z:\2022projects\ARGO\2222201 - South Ave Multi Family Dev\06_Drawings\Civil\01_C550_C551_2222201_STORMD.dwg

Drawing Name: Z:\2022projects\ARGO\2222201 – South Ave Multi Family Dev\06_Drawings\Civil\01_C550_C551_2222201_STORMD.dwg
Xrefs Attached: XBORDER_2222201; XENG_2222201
Date Printed: Mar 07, 2023, 1:25pm



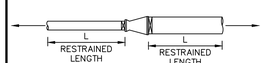
NOTES:
1. WET TAP OF PUBLIC WATER MAIN SHALL BE PERFORMED UNDER THE SUPERVISION OF THE ENGINEER, AND THE AUTHORITY HAVING JURISDICTION.
2. TAPPING SLEEVE AND VALVE SUPPORT SHALL BE COORDINATED WITH THE ENGINEER TO SUIT FIELD CONDITIONS.
3. MINIMUM DISTANCE TO JOINTS, FITTINGS, OR OTHER WET TAPS OR STOPS SHALL BE 3 FEET.
4. VALVE SHALL BE RED TOP AND OPERATING DIRECTION SHALL BE **CLOCKWISE** TO OPEN (TURNING RIGHT).
5. TAPPING SLEEVE SHALL BE SELECTED TO FIT EXISTING PIPE MATERIAL (C.I., D.I., A.C.) AND OUTSIDE DIAMETERS.
6. THRUST BLOCK IS REQUIRED WHERE THE BRANCH OF THE TAPPING SLEEVE DOES NOT HAVE RESTRAINED JOINT.
7. TAPPING SLEEVE, VALVE & VALVE BOX SHALL BE IN ACCORDANCE WITH MUNICIPAL STANDARDS & AS MANUFACTURED BY **(MUELLER, CLOW OR WATEROUS)** OR APPROVED EQUIVALENT.

1 TAPPING SLEEVE AND VALVE DETAIL
SCALE: NOT TO SCALE

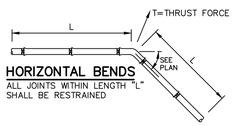


NOTES:
1. DITCH WIDTH SHALL EXTEND A MINIMUM OF ONE AND ONE-HALF FT. FROM THE EDGES OF THE TRENCH.
2. REPLACED BASE MATERIAL OVER TRENCH SHALL BE NYSDOT TYPE 2 SUBBASE COMPACTED IN 12" LIFTS.
3. PIPE BEDDING SHALL BE A MINIMUM OF 6" ABOVE AND BELOW PIPE.
4. ALL JOINTS SHALL BE MECHANICALLY SAWED.
5. ALL JOINTS SHALL BE SQUARED TO THE EXISTING EDGE OF CURB AND/OR PAVEMENT, AND TACK COATED PER DETAIL.
6. ROAD SURFACE REPLACEMENT SHALL BE MINIMUM 6" OF ASPHALTIC CONCRETE.
7. BINDER COURSE ASPHALT PAVEMENT TO BE PLACED IN 2 LIFTS.
8. DEMARCATION LAYER TO BE INSTALLED ALONG SIDES AND BOTTOM OF TRENCH FOR ALL PORTIONS ON THE SUBJECT PROPERTY.
9. WHERE THE SURFACE CONDITION IS LANDSCAPED, APPLY A MINIMUM 2-FT DEPTH OF TOPSOIL.

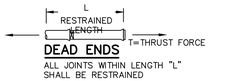
6 CITY OF POUGHKEEPSIE UTILITY TRENCH DETAIL IN PUBLIC ROW OR EASEMENT AREA
SCALE: NOT TO SCALE



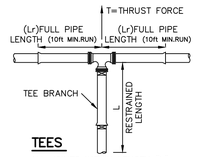
REDUCERS
ALL JOINTS WITHIN LENGTH "L" SHALL BE RESTRAINED



HORIZONTAL BENDS
ALL JOINTS WITHIN LENGTH "L" SHALL BE RESTRAINED

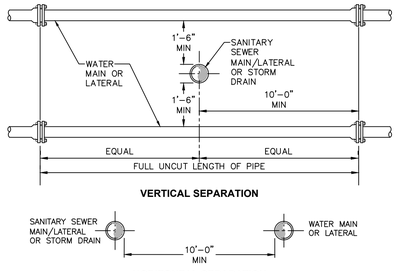


DEAD ENDS
ALL JOINTS WITHIN LENGTH "L" SHALL BE RESTRAINED



TEES
ALL JOINTS WITHIN LENGTH "L" SHALL BE RESTRAINED ON THE TEE BRANCH

8 RESTRAINED JOINT PIPE DIAGRAMS
SCALE: NOT TO SCALE

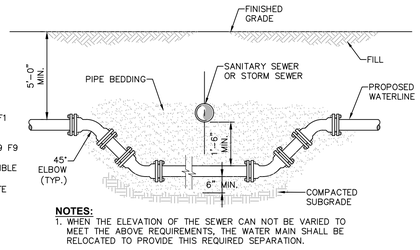


VERTICAL SEPARATION

HORIZONTAL SEPARATION

NOTES:
1. NO DEVIATION IN THE SEPARATION REQUIREMENTS WILL BE PERMITTED WITHOUT THE EXPRESS APPROVAL OF THE NYS HEALTH DEPARTMENT. OFFSETTING OF WATERLINE SHALL BE REQUIRED WHERE SEPARATION DISTANCES CANNOT BE MAINTAINED.
2. WHEN IT IS IMPOSSIBLE TO OBTAIN VERTICAL SEPARATION AS INDICATED ABOVE, BOTH THE WATER MAIN AND THE SEWER MAIN SHALL BE CONSTRUCTED OF MECHANICAL JOINT, DUCTILE IRON PIPE OR PVC WATER WORKS GRADE PRESSURE PIPE FOR 10' EACH SIDE OF CROSSING AND SHALL BE PRESSURE TESTED TO **150psi** TO ASSURE WATER TIGHTNESS.

2 SANITARY/STORM SEWER AND WATERMAIN SEPARATION DETAIL
SCALE: NOT TO SCALE



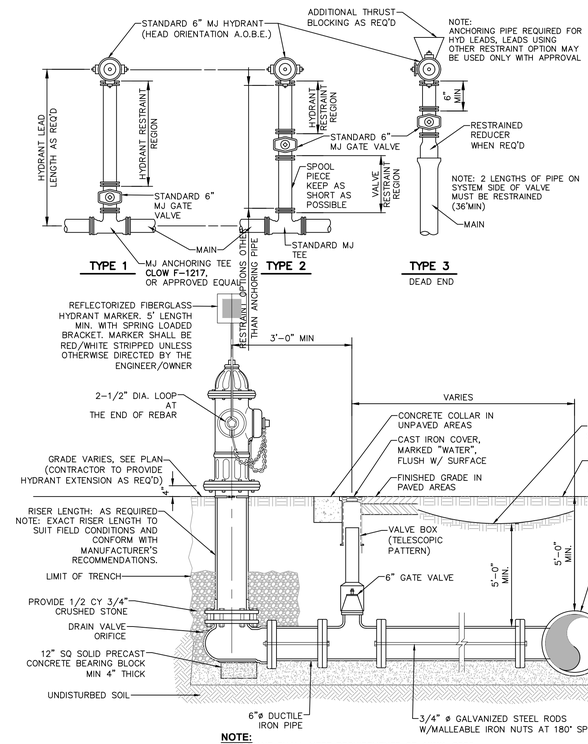
NOTES:
1. WHEN THE ELEVATION OF THE SEWER CAN NOT BE VARIED TO MEET THE ABOVE REQUIREMENTS, THE WATER MAIN SHALL BE RELOCATED TO PROVIDE THIS REQUIRED SEPARATION.
2. WHEN IT IS IMPOSSIBLE TO OBTAIN VERTICAL SEPARATION AS INDICATED ABOVE, BOTH THE WATER MAIN AND THE SEWER MAIN SHALL BE CONSTRUCTED OF MECHANICAL JOINT DUCTILE IRON PIPE OR PVC WATER WORKS GRADE PRESSURE PIPE FOR 10' EACH SIDE OF CROSSING AND SHALL BE PRESSURE TESTED TO **150psi** TO ASSURE WATER TIGHTNESS.

3 WATERLINE OFFSET DETAIL
SCALE: NOT TO SCALE

SCHEDULE OF JOINT RESTRAINT- (PVC OR POLYWRAPPED DIP) (LENGTH OF PIPE EACH SIDE OF FITTING TO BE RESTRAINED IN FEET "L"																
PIPE SIZE (INCHES)	FITTING TYPE							REDUCER								
	90°	45°	22½°	11¼°	TEE	VALVE	DEAD END	24"	18"	16"	14"	12"	10"	8"	6"	4"
30"	241	100	48	24	202	206	206	72	130	145	159					
24"	196	82	39	20	163	166	166		72	91	108	123	136			
18"	149	62	30	15	122	125	125			26	49	68	85	99		
16"	134	56	27	14	109	112	112				26	48	67	82	95	
14"	118	49	24	12	95	98	98					26	47	64	79	89
12"	102	43	21	11	82	85	85						25	45	62	74
10"	86	36	17	9	68	71	71							25	44	58
8"	71	30	15	7	56	59	59								25	43
6"	54	22	11	6	41	44	44									23
4"	38	16	8	4	28	31	31									

NOTES:
1. THE LENGTH OF PIPE REQUIRING RESTRAINT IS BASED UPON THE FOLLOWING ASSUMPTIONS:
   A. BEDDING TYPE 2 – FLAT BOTTOM TRENCH, BACKFILL LIGHTLY CONSOLIDATED TO CENTER LINE OF PIPE.
   B. SOIL TYPE CLAY 1 – CLAY OF MEDIUM TO LOW PLASTICITY, LL<50, <25% COURSE PARTICLES [CL & CL–ML] :
      CL – INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY GRAVELY CLAYS, SANDY CLAYS, SILTY CLAYS. LEAN CLAYS
      ML – INORGANIC SILTS, VERY FINE SAND, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS.
   C. PIPE TABLE CALCULATION IS BASED ON PVC OR POLYWRAPPED DIP
   D. DEPTH TO TOP OF PIPE 5'–0" MINIMUM
   E. MAXIMUM OPERATING PRESSURE OF 150 PSI
   F. FACTOR OF SAFETY OF 1.5
2. FOR END PLUGS, USE RESTRAIN PIPE LENGTH GIVEN FOR DEAD END FITTING.
3. THE LENGTH ("L") OF NEW PIPE TO BE RESTRAINED IS THE LENGTH FOR EACH SIDE OF THE FITTING.
4. THE ABOVE INFORMATION WAS PROVIDED USING THE THRUST RESTRAINT PROGRAM ISSUED BY THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) AND IS BASED ON THE ASSUMPTIONS LISTED IN NOTE 1. RESTRAINED LENGTH REQUIREMENTS FOR FIELD CONDITIONS AND PIPE SIZES DIFFERING FROM THOSE LISTED ABOVE SHOULD BE EVALUATED SEPARATELY.
5. RESTRAINED JOINT PIPE AND FITTINGS SHALL BE USED ONLY AS ALLOWED BY THE PROJECT PLANS AND/OR SPECIFICATION. (IF THRUST BLOCKS ARE USED SEE THRUST BLOCK DETAIL)
6. TEE FITTINGS: PIPE SIZE SHOWN FOR THE TEE IS THE SIZE OF THE RUN. THE RESTRAINED LENGTH SHOWN IS FOR THE BRANCH. THE VALUE OF THE RESTRAINED LENGTH ASSUMES THAT THE SIZE OF THE BRANCH IS EQUAL TO OR LESS THAN THE RUN. THE VALUE OF THE Lr=USED IN THE TABLE IS 10 FEET. (Lr= TOTAL LENGTH BETWEEN FIRST JOINTS ON EITHER SIDE OF THE TEE ON THE RUN.)

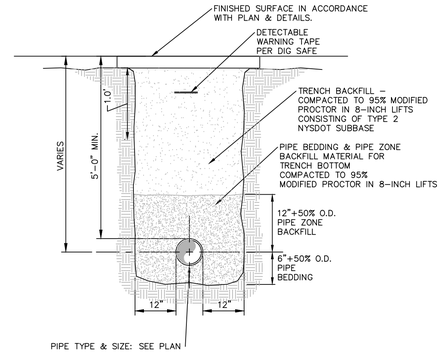
7 JOINT RESTRAINT SCHEDULE AND NOTES
SCALE: NOT TO SCALE



NOTE:
1. HYDRANT SHALL MEET REQUIREMENTS OF **AWWA C502**.

4 HYDRANT ASSEMBLY DETAIL
SCALE: NOT TO SCALE

NOTES:
1. HYDRANTS SHALL BE AMERICAN DARLING B-62-B (NO EQUIVALENT OR EXCEPTIONS). HYDRANTS SHALL MEET REQUIREMENTS OF **AWWA STANDARD C-502**.
2. HYDRANTS SHALL BE CAST IRON BODY, DRY BARREL DESIGN, COMPRESSION-TYPE VALVE, OPENING AGAINST PRESSURE AND CLOSING WITH PRESSURE, 6-INCH MECHANICAL JOINT INLET FOOT PIECE, 5 ¼ INCH MAIN VALVE OPENING, O-RING TYPE PACKING, RATED FOR 250-PSI WORKING PRESSURE, TWO (2) 2 ½ INCH HOSE NOZZLES AND ONE (1) 4 ½ INCH PUMPER NOZZLE.
3. NOZZLE OUTLET THREADS SHALL MEET LOCAL FIRE DEPARTMENT REQUIREMENTS AND HAVE CAST IRON CAPS WITH NON-KINKING STEEL CHAINS. OPERATING AND CAP NUTS: PENTAGON 1 ½ INCH POINT TO FLAT. HYDRANT VALVES SHALL BE OPENED BY TURNING OPERATING NUT TO THE LEFT, OR **COUNTERCLOCKWISE**.
4. HYDRANTS SHALL BE TRAFFIC TYPE WITH BREAKABLE SAFETY FLANGE WITH RED EXTERIOR ALKYD GLOSS ENAMEL PAINT. HYDRANTS SHALL BE TOUCHED UP TO REMOVE ANY MARKS OR SCRAPED PAINT CAUSED BY INSTALLATION OR TRANSIT.

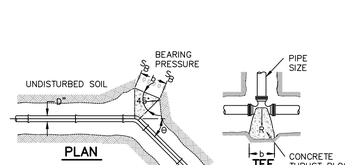


NOTES:
1. PIPE BEDDING & PIPE ZONE BACKFILL SHALL BE A NATURAL RUN-OF-BANK (R.O.B.) SAND OR A MIXTURE OF CRUSHED STONE AND GRAVEL, FREE OF SOFT, NONDURABLE PARTICLES, ORGANIC MATERIALS AND ELONGATED PARTICLES, AND SHALL BE WELL GRADED FROM FINE TO COARSE PARTICLES. BEDDING GRADATIONS SHALL BE APPROVED BY THE ENGINEER AND SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

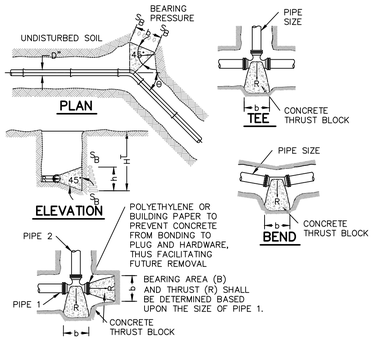
SIEVE DESIGNATION	% PASSING
3/4"	100%
NO. 40	0-70%
NO. 200	0-10%

2. INSTALL CONTINUOUS DETECTABLE MARKING TAPE DURING BACKFILLING OF TRENCH FOR UNDERGROUND PIPING. LOCATE TAPE 12" BELOW FINISHED GRADE, DIRECTLY OVER PIPING, EXCEPT 6" BELOW SUBGRADE UNDER PAVEMENTS & SLAB.
3. TRENCHING SHALL BE IMPLEMENTED IN ACCORDANCE WITH O.S.H.A. STANDARDS.
4. WIDTH DIFFERS WHERE WATER LINE IS PLACED IN ROCK BELOW FIVE-FEET. REFER TO TECHNICAL SPECIFICATIONS.

5 PIPE TRENCH DETAIL (WATER)
SCALE: NOT TO SCALE



12 RESTRAINED JOINT THRUST RESTRAINT DETAIL
SCALE: NOT TO SCALE



BEARING AREA (B) AND THRUST (R) SHALL BE DETERMINED BASED UPON THE SIZE OF PIPE 2.

TEE WITH PLUG

REQUIRED BEARING AREAS –B (SQFT) FOR BEARING BLOCKS*					
PIPE SIZE (INCHES)	TEE	90° BEND	45° BEND	22 1/2 ° BEND	11 1/4 ° BEND
4	2.0	2.8	1.5	0.8	0.4
6	4.2	5.9	3.2	1.6	0.8
8	7.2	10.1	5.5	2.8	1.4
10	10.9	15.4	8.3	4.2	2.1
12	15.4	21.8	11.8	6.0	3.0
14	20.6	29.1	15.8	8.0	4.0
16	26.8	37.9	20.5	10.4	5.2
18	33.6	47.5	25.7	13.1	6.6
20	41.2	58.2	31.5	16.1	8.1
24	58.8	83.1	45.0	22.9	11.5
30	90.5	128.0	69.2	35.3	17.7
36	129.6	183.3	99.1	50.5	25.4

*FACTOR OF SAFETY=1.5 SOIL BEARING OF 3,000 PSF 225 PSI DESIGN PRESSURE

*BEARING AREA (B) = bxh

NOTES:
1. CONCRETE SHALL NOT TO OVERLAP ANY JOINT.
2. THRUST BLOCKS SHALL BE CONFIGURED IN A MANNER THAT DOES NOT INTERFERE WITH REMOVAL OR INSTALLATION OF ANY JOINTING COMPONENTS.
3. FOR REDUCERS, USE MECHANICAL JOINT FITTINGS WITH RETAINER GLANDS.
4. BEARING SURFACE SHALL, WHERE POSSIBLE, BE PLACED AGAINST UNDISTURBED SOIL. WHERE THAT IS NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL MUST BE COMPACTED TO AT LEAST 90% STANDARD PROCTOR DENSITY.
5. BLOCK HEIGHT (h) SHALL BE EQUAL TO OR LESS THAN ONE-HALF THE TOTAL DEPTH TO THE BOTTOM OF THE BLOCK, (HT), BUT NOT LESS THAN THE PIPE DIAMETER (D).
6. BLOCK HEIGHT (h) SHALL BE ESTABLISHED SUCH THAT THE CALCULATED BLOCK WIDTH (b) VARIES BETWEEN ONE AND TWO TIMES THE HEIGHT.
7. VALUES FOR TEES APPLY TO TEES, END PLUGS, CAPS, AND TAPPING SLEEVES.
8. REQUIRED BEARING AREAS ARE DEVELOPED TO RESIST THRUSTS RESULTING FROM 150 PSI WORKING PRESSURE PLUS 50%(75 PSI) SURGE ALLOWANCE RESULTING IN 225 PSI TOTAL INTERNAL PRESSURE. REQUIRED BEARING AREAS ARE BASED UPON AN ALLOWABLE SOIL BEARING CAPACITY OF 3,000 POUNDS PER SQUARE FOOT. IN RESPONSE TO OTHER SOIL CONDITIONS ENCOUNTERED, BEARING AREAS REQUIRED MAY BE MODIFIED BY THE ENGINEER.

SOIL	BEARING STRENGTH Sa (LB/SQ FT)
MUCK	0
SOFT CLAY	1,000
SILT	1,500
SANDY SILT	3,000
SAND	4,000
SANDY CLAY	6,000
HARD CLAY	9,000

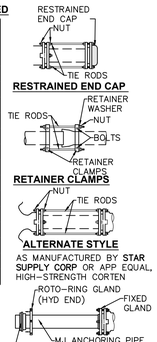
9. IN MUCK, PEAT, OR RECENTLY PLACED FILL, ALL THRUSTS SHALL BE RESISTED BY PILES OR TIE RODS TO SOLID FOUNDATIONS, OR BY REMOVAL OF SUCH UNSTABLE MATERIAL AND REPLACEMENT WITH BALLAST OF SUFFICIENT STABILITY TO RESIST THE THRUSTS; ALL AS REQUIRED BY THE ENGINEER.
10. CONCRETE THRUST BLOCK SHALL BE USED ONLY AS ALLOWED BY THE PROJECT PLANS AND/OR SPECIFICATION. (IF RESTRAINED JOINT PIPE IS TO BE USED SEE SCHEDULE OF JOINT RESTRAINED PIPE.)

10 CONCRETE THRUST BLOCK DETAILS
SCALE: NOT TO SCALE

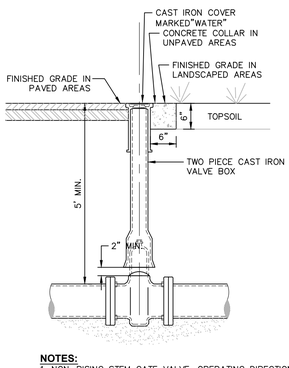
NO. OF TIE RODS REQUIRED

PIPE SIZE INCHES	MIN NO. OF 3/4 "RODS
2	2 [1]
3	2 [1]
4	2
6	2
8	2
10	2
12	2
14	4
16	4
18	6
20	6
24	8
30	14(8) [2]
36	18(12) [2]

NOTES:
1. APPLIES TO 5/8" RODS AS WELL.
2. MIN NO. OF 1" RODS.



9 JOINT RESTRAINT OPTIONS
SCALE: NOT TO SCALE



NOTES:
1. NON-RISING STEM GATE VALVE, OPERATING DIRECTION SHALL BE CLOCKWISE TO OPEN.
2. MINIMUM DISTANCE TO JOINTS, FITTINGS, OR OTHER WET TAPS OR STOPS SHALL BE 3 FEET.
3. RESTRAIN VALVE WITH MEGALUG CONNECTION.
4. DIRECT BURY VALVE SHALL BE MODEL A-2360 RESILIENT WEDGE GATE VALVE WITH MECHANICAL JOINT ENDS AS MANUFACTURED BY MUELLER CO. OR APPROVED EQUIVALENT. VALVE SHALL COMPLY WITH AWWA C-509 AND NSF/ANSI 61 STANDARDS.
5. VALVE OPERATING DIRECTION SHALL BE CLOCKWISE (TURNING RIGHT).
6. VALVE BOX SHALL BE 2-PIECE SLIDING TYPE WITH 5 ¼" SHAFT EXTENSION SERIES 6850 AS MANUFACTURED BY TYLER/UNION OR APPROVED EQUIVALENT.

11 TYPICAL GATE VALVE DETAIL
SCALE: NOT TO SCALE

GENERAL CONSTRUCTION NOTES:

1. ALL UTILITY WORK INVOLVING CONNECTION TO EXISTING MUNICIPAL WATER MAIN SHALL BE COORDINATED WITH OWNER AND OWNER'S REPRESENTATIVE. NOTIFY OWNER AND THE OWNER'S REPRESENTATIVE 3 WORKING DAYS BEFORE CONNECTION IS MADE.
2. THE CONTRACTOR SHALL VERIFY THE PRESENCE OF AND EXACT LOCATION OF ALL UTILITIES PRIOR TO COMMENCING ANY EXCAVATION WORK AS THE EXACT LOCATION OF UTILITIES MAY DIFFER FROM THE LOCATION SHOWN, AND ADDITIONAL UTILITIES MAY EXIST.
3. THE CONTRACTOR SHALL REVIEW ALL FIELD UTILITY MARKOUT INFORMATION AND BRING ANY CONFLICTS TO THE ATTENTION OF THE PROJECT ENGINEER PRIOR TO COMMENCING ANY WORK OPERATIONS. TEST PITS MAY BE REQUIRED BY THE CONTRACTOR TO VERIFY ACTUAL UTILITY LOCATIONS AND/OR DEPTHS. TEST PIT OPERATIONS WILL MEET ALL NECESSARY REQUIREMENTS AS SET FORTH IN THESE PLANS, DETAILS, FEDERAL/STATE/LOCAL REGULATIONS AND ANY SPECIFIC PERMIT REQUIREMENTS.
4. THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATIONS AT ALL UTILITY CONNECTION LOCATIONS AND AS NEEDED TO VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK. THE CONTRACTOR SHALL NOTIFY THE OWNER AND OWNER'S REPRESENTATIVE 3 WORKING DAYS PRIOR TO SUCH EXCAVATIONS TO ENSURE THEIR PRESENCE.
5. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING FOR THE PROPOSED STRUCTURES AND WATER LINES AS THE EXACT LOCATION OF UNDERGROUND STRUCTURES AND UTILITIES ARE NOT KNOWN. ANY DAMAGE TO EXISTING STRUCTURES/UTILITIES ABOVE OR BELOW GRADE, CAUSED BY THE CONTRACTOR SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT HIS OWN EXPENSE.

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MONTVALE, NJ 07645

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SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
2	03/06/23	REVISED PER PLANNING BOARD COMMENTS
1	01/27/23	NO CHANGES THIS SHEET
Revisions		

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DRAWING NAME:

WATER SYSTEM DETAILS

DRAWING NUMBER:

C560

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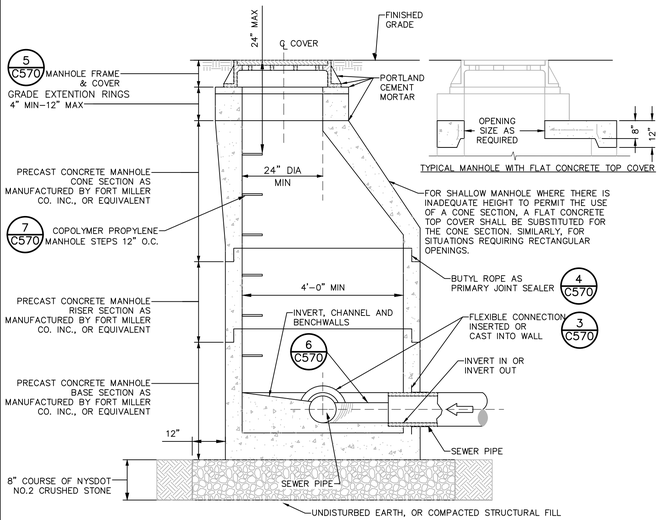
Date Printed: Mar 07, 2023, 1:27pm



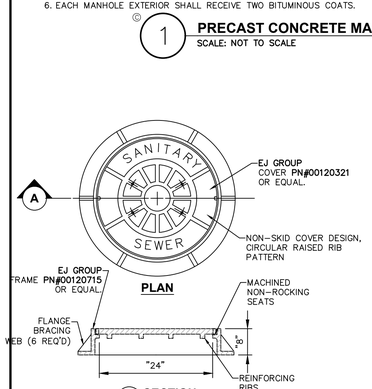
NOTES: USE ONLY WET–CAST UNITS. DRY–CAST NOT ACCEPTABLE

1.

CONE DIMENSIONS	
DIAM. OPENING	HEIGHT
24"	24" OR 42"
30"	34"

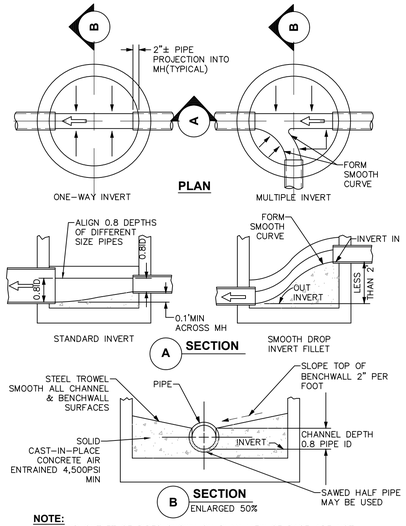
2. INVERT SHALL BE FILLETED.
3. REINFORCEMENT FOR MANHOLE COMPONENTS SHALL BE DESIGNED BY A LICENSED NEW YORK STATE PROFESSIONAL ENGINEER PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW. STRUCTURE SHALL BE DESIGNED FOR HS20–44 VEHICULAR LOADING PLUS 25% IMPACT.
4. CONCRETE TO TEST **4,500 PSI** AT 28 DAYS IN CONFORMANCE WITH **A.S.T.M. C–478.**
5. BENCH SHALL BE BUILT FOR FLOW BETWEEN INLET AND OUTLET.
6. EACH MANHOLE EXTERIOR SHALL RECEIVE TWO BITUMINOUS COATS.

© 1 PRECAST CONCRETE MANHOLE
SCALE: NOT TO SCALE



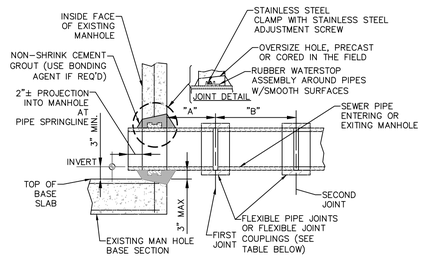
NOTE:
1. FRAME AND COVER SHALL BE DESIGNED FOR HS20–44 VEHICLE LOADING AND 25% IMPACT.

© 5 HEAVY DUTY STANDARD CAST IRON MH COVER
SCALE: NOT TO SCALE



NOTE:
INLET AND OUTLET OF PIPES SHOWN ON PLAN VIEW OF BASE ARE NOT NECESSARILY TYPICAL OF ALL MANHOLES. REFER TO UTILITY PLAN FOR INLET AND OUTLET DIRECTIONS.

© 6 INVERT, CHANNEL AND BENCHWALLS
SCALE: NOT TO SCALE



FLEXIBLE JOINT & WATERSTOP REQUIREMENTS

SEWER PIPE TYPE	FLEXIBLE JOINT TYPE IN & OUT	"A"DISTANCE (FEET)	"B"DISTANCE (FEET)	MH WATER STOP REQD
DUCTILE IRON	STD RUBBER GASKET PIPE JOINT ONLY	10"MAX	NO LIMIT	YES
PVC	SPECIAL FLEXIBLE JOINT COUPLING	1"MAX	3"MAX	YES

NOTES:
1. THIS DETAIL SHALL BE USED AT NO EXTRA COST IN PLACE OF EITHER OF THE PIPE–TO–MANHOLE CONNECTION DETAILS ONLY WHEN CONNECTING TO EXISTING MANHOLES THAT HAVE NO FLEXIBLE RUBBER BOOT PROVIDED.
2. REFERENCE MANHOLE DETAIL(S) FOR REQUIRED INVERT CHANNEL CONFIGURATION.

© 2 PIPE CONNECTION TO EXISTING MANHOLE– CEMENT GROUT SEAL WITH WATER STOP
SCALE: NOT TO SCALE

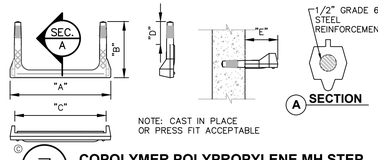
MANHOLES AND OTHER BELOW GRADE STRUCTURES:

1. STRUCTURAL DESIGN FOR MANHOLES AND OTHER BELOW–GRADE PRECAST CONCRETE STRUCTURES:
   A. NON–TRAFFIC LOADS:
      BELOW GRADE PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED TO WITHSTAND LOADS IMPOSED BY STRUCTURE WEIGHT, EARTH COVER, LATERAL PRESSURE FROM EARTH AND GROUND WATER, AND LIVE LOADS SUCH AS PEDESTRIAN TRAFFIC OR MACHINERY ON OR ABOVE THE STRUCTURE; AND
   B. TRAFFIC LOADS:
      BELOW GRADE PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED TO ALSO WITHSTAND TRAFFIC LOADS CREATED BY AN HS20–44 TRUCK PLUS 25% IMPACT AS DEFINED IN THE LATEST EDITION OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) DESIGN STANDARDS.
2. MATERIAL WHICH SHALL BE UTILIZED IN THE CONSTRUCTION OF PRECAST CONCRETE STRUCTURES:
   CEMENT: ASTM C–150, TYPES **I,II,III,V**
   SAND: NYSDOT STD. SPEC. **SECTION NO. 703–0** CONCRETE SAND
   STONE: NYSDOT STD. SPEC. **SECTION NO. 703–02** COARSE AGGREGATE
   STEEL BAR REINFORCEMENT: **ASTM A615**, GRADE 60
   WIRE MESH REINFORCEMENT: **ASTM A185** PLAIN
   CONCRETE STRENGTH (28 DAY): **4,500** PSI (F'C)
   ENTRAINED AIR: 5% MIN.
3. ALL CASTINGS (FRAMES AND COVERS, FRAMES AND GRATES, ETC.) FOR USE IN CONJUNCTION WITH MANHOLES AND OTHER BELOW GRADE STRUCTURES SHALL BE MANUFACTURED FROM GRAY IRON OR DUCTILE IRON. GRAY IRON SHALL CONFORM WITH ASTM A 48, CLASS 30B AND DUCTILE IRON SHALL CONFORM WITH **ASTM A 536** AND BE OF A GRADE APPROPRIATE TO ITS INTENDED USE.
4. ALL CASTINGS (FRAMES AND COVERS, FRAMES AND GRATES, ETC.) FOR USE IN CONJUNCTION WITH MANHOLES AND OTHER BELOW GRADE STRUCTURES SHALL BE DESIGNED TO WITHSTAND AASHTO HS 20–44 HIGHWAY LOADING PLUS 25% IMPACT.
5. ALL ASTM REFERENCES SHALL BE FOR THE LATEST ACTIVE STANDARD.

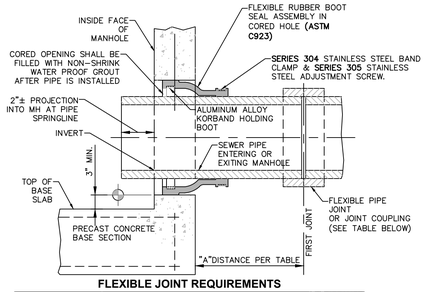
ACCEPTABLE MANHOLE STEPS

MANUFACTURER	PATTERN NUMBER	"A" STEP WIDTH	"B" LEG LENGTH	"C" RUNG CLEAR	"D" EMBED–MENT	"E" RUNG CLEAR
M.A. INDUSTRIES INC*	**PS2–PF**	14 3/4	9 1/4	13 3/4	3 3/8	5 7/8
M.A. INDUSTRIES INC*	**PS2–PFS**	14 3/4	8 1/4	13 3/4	3 3/8	4 7/8

* OR EQUIVALENT
MH STEP DESIGN AND INSTALLATION SHALL COMPLY WITH ALL OSHA REGULATIONS



© 7 COPOLYMER POLYPROPYLENE MH STEP
SCALE: NOT TO SCALE

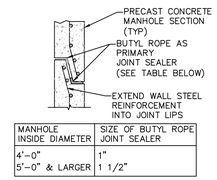


FLEXIBLE JOINT REQUIREMENTS

SEWER PIPE TYPE	FLEXIBLE JOINT TYPE IN & OUT	"A"DISTANCE (FEET)
DUCTILE IRON	STD RUBBER GASKET PIPE JOINT ONLY	10" MAX
PVC	STD RUBBER GASKET PIPE JOINT ONLY	3" MAX

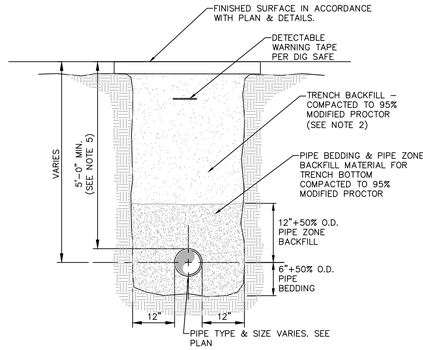
NOTE:
REFERENCE MANHOLE DETAIL(S) FOR REQUIRED INVERT CHANNEL CONFIGURATION.

© 3 PIPE CONNECTION TO MANHOLE– PRECAST OR CORED HOLE W/ INSERTED FLEXIBLE BOOT
SCALE: NOT TO SCALE



MANHOLE INSIDE DIAMETER	SIZE OF BUTYL ROPE JOINT SEALER
4'–0"	1"
5'–0" & LARGER	1 1/2"

© 4 MANHOLE JOINT
SCALE: NOT TO SCALE



NOTES:
1. PIPE BEDDING & PIPE ZONE BACKFILL SHALL BE AN IMPORTED NATURAL RUN–OF–BANK (R.O.B.) SAND OR A MIXTURE OF CRUSHED STONE AND GRAVEL, FREE OF SOFT, NONDURABLE PARTICLES, ORGANIC MATERIALS AND ELONGATED PARTICLES, AND SHALL BE WELL GRADED FROM FINE TO COARSE PARTICLES. BEDDING GRADATIONS SHALL BE APPROVED BY THE ENGINEER AND SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING
3/4"	100%
NO. 40	0–70%
NO. 200	0–10%

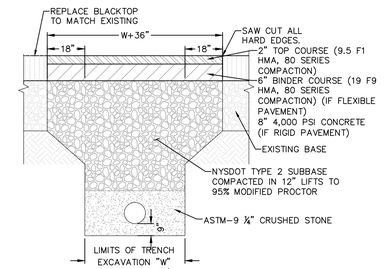
2. TRENCH BACKFILL SHALL BE A NATURAL RUN–OF–BANK (R.O.B.) OR PROCESSED GRAVEL, OR EXCAVATED MATERIAL FREE OF SOFT, NONDURABLE PARTICLES, ORGANIC MATERIALS AND ELONGATED PARTICLES, AND SHALL BE WELL GRADED FROM FINE TO COARSE PARTICLES. TRENCH BACKFILL GRADATIONS SHALL BE APPROVED BY THE ENGINEER AND SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING
4"	100%
NO. 40	0–70%
NO. 200	0–10%

IN NON–TRAFFIC UNPAVED AREAS TRENCH BACKFILL CAN BE MATERIALS EXCAVATED FROM THE TRENCH AS APPROVED BY THE ENGINEER AND COMPACTED TO 90% MODIFIED PROCTOR.

3. INSTALL CONTINUOUS DETECTABLE MARKING TAPE DURING BACKFILLING OF TRENCH FOR UNDERGROUND PIPING. LOCATE TAPE 12" BELOW FINISHED GRADE, DIRECTLY OVER PIPING, EXCEPT 6" BELOW SUBGRADE UNDER PAVEMENTS & SLAB.
4. TRENCHING SHALL BE IMPLEMENTED IN ACCORDANCE WITH O.S.H.A. STANDARDS.
5. 5'–0" MIN COVER SHALL BE APPLIED TO WATER MAIN OR SANITARY SEWER FORCE MAINS ONLY.

© 8 PIPE TRENCH DETAIL (TYPICAL)
SCALE: NOT TO SCALE



NOTES:
1. DITCH WIDTH SHALL EXTEND A MINIMUM OF ONE AND ONE–HALF FT. FROM THE EDGES OF THE TRENCH.
2. REPLACED BASE MATERIAL OVER TRENCH SHALL BE NYSDOT TYPE 2 SUBBASE COMPACTED IN 12" LIFTS.
3. PIPE BEDDING SHALL BE A MINIMUM OF 6" ABOVE AND BELOW PIPE.
4. ALL JOINTS SHALL BE MECHANICALLY SAWED.
5. ALL JOINTS SHALL BE SQUARED TO THE EXISTING EDGE OF CURB AND/OR PAVEMENT, AND TACK COATED PER DETAIL.
6. ROAD SURFACE REPLACEMENT SHALL BE MINIMUM 6" OF ASPHALTIC CONCRETE.
7. BINDER COURSE ASPHALT PAVEMENT TO BE PLACED IN 2 LIFTS.
8. DEMARCATION LAYER TO BE INSTALLED ALONG SIDES AND BOTTOM OF TRENCH FOR ALL PORTIONS ON THE SUBJECT PROPERTY.
9. WHERE THE SURFACE CONDITION IS LANDSCAPED, APPLY A MINIMUM 2–FT DEPTH OF TOPSOIL.

© 9 CITY OF POUGHKEEPSIE UTILITY TRENCH DETAIL IN PUBLIC ROW OR EASEMENT AREA
SCALE: NOT TO SCALE

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APPLICANT NAME & ADDRESS:
ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:
SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
2	03/07/23	REVISED PER PLANNING BOARD COMMENTS
1	01/27/23	NO CHANGES THIS SHEET
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

SANITARY SEWER DETAILS

DRAWING NUMBER:

C570

3/7/2023 1:27:50 PM
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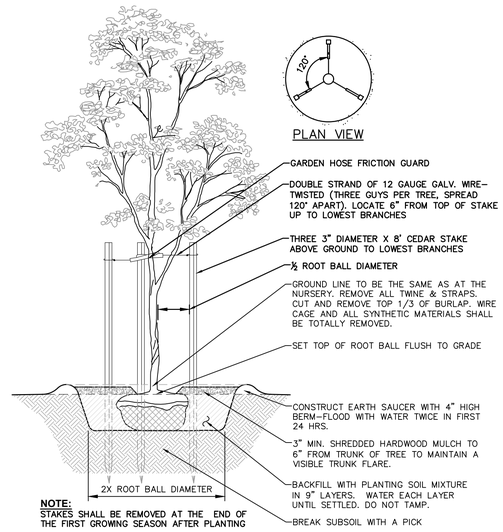
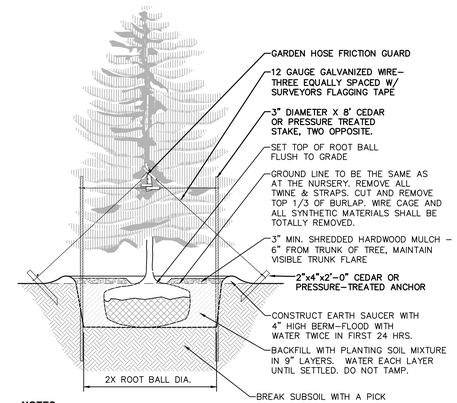
Drawing Name: Z:\2022projects\ARGO\2222201 – South Ave Multi Family Dev\06_Drawings\Civil\01_C570_2222201_SAND.dwg
Xref's Attached: XBORDER_2222201
Date Printed: Mar 07, 2023, 1:27pm



NOTE:
STAKES SHALL BE REMOVED AT THE END OF THE FIRST GROWING SEASON AFTER PLANTING

1 PLANTING AND GUYING DETAILS-FOR TREES SMALLER THAN 3" CALIPER, BALLED AND BURLAPPED

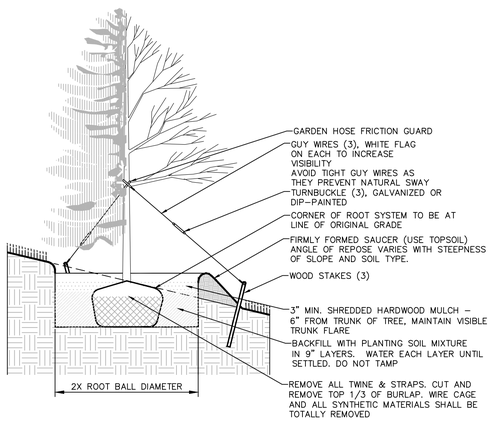
SCALE: NOT TO SCALE



NOTES:
1. SPRAY WITH ANTIDESICCANT IN ACCORDANCE WITH MFG.'S RECOMMENDATIONS.
2. TREES LESS THAN 3" CALIPER SHALL BE STAKED.
3. TREES GREATER THAN 3" CALIPER AND UP SHALL BE GUYED AND ANCHORED.
4. STAKES SHALL BE REMOVED AT THE END OF THE FIRST GROWING SEASON AFTER PLANTING.

2 EVERGREEN PLANTING DETAIL

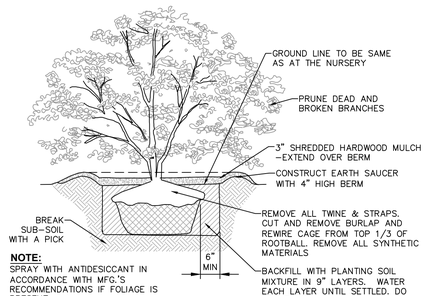
SCALE: NOT TO SCALE



NOTE:
DETAIL SHALL BE UTILIZED FOR DECIDUOUS AND CONIFEROUS TREE PLANTING ON SLOPE.

3 TREE PLANTING ON SLOPE

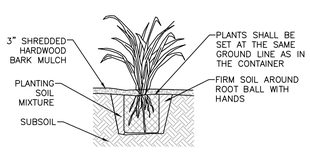
SCALE: NOT TO SCALE



NOTE:
SPRAY WITH ANTIDESICCANT IN ACCORDANCE WITH MFG.'S RECOMMENDATIONS IF FOLIAGE IS PRESENT.

4 SHRUB PLANTING DETAIL FOR ALL SHRUBS BALLED AND BURLAPPED

SCALE: NOT TO SCALE

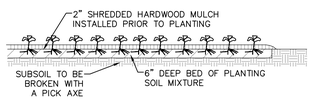


SECTIONAL ELEVATION

NOTES:
1. SPADED PLANTING SOIL MIX (4"–6" DEPTH), ADD FERTILIZER WHEN MIXING. DO NOT COMPACT AFTER PLANTING.
2. WATER THOROUGHLY AFTER PLANTING.
3. PROVIDE WELL DRAINING SUBSOIL WHEN SOIL IS HEAVY OR COMPACTED.
4. PLANTS SHALL BE REMOVED FROM ALL CONTAINERS WHEN PLANTED, UNLESS OTHERWISE STATED IN THE PLANT SCHEDULE.

6 CONTAINERIZED PERENNIAL PLANTING

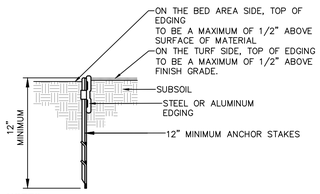
SCALE: NOT TO SCALE



NOTE:
GROUND COVERS SHOULD BE POT OR CONTAINER GROWN.

7 GROUND COVER & ANNUAL PLUG PLANTING

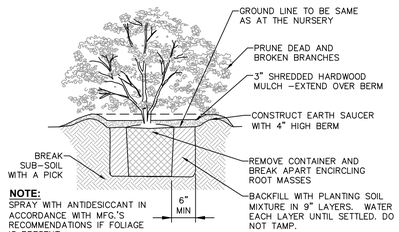
SCALE: NOT TO SCALE



NOTES:
1. 16'–0" SECTIONS TO INCLUDE FIVE (5) 12" STAKES
2. 8'–0" SECTIONS TO INCLUDE THREE (3) 12" STAKES
3. COMPACT GRADES ADJACENT TO EDGING TO MINIMIZE SETTLING
4. CORNERS – CUT BASE OF EDGING HALF WAY AND FORM A CONTINUOUS CORNER.

8 LANDSCAPE BED EDGING

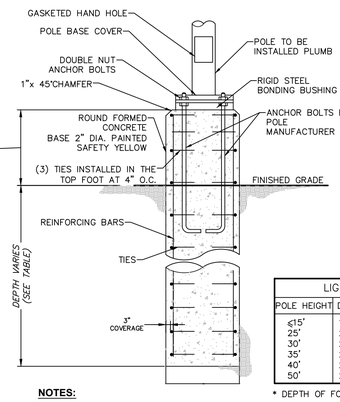
SCALE: NOT TO SCALE



NOTE:
SPRAY WITH ANTIDESICCANT IN ACCORDANCE WITH MFG.'S RECOMMENDATIONS IF FOLIAGE IS PRESENT.

5 SHRUB PLANTING DETAIL FOR CONTAINERIZED SHRUBS

SCALE: NOT TO SCALE



LIGHT POLE FOUNDATIONS				
POLE HEIGHT	DIAM.	DEPTH*	REINF BARS	TIES
≤15'	18"	5'–0"	(6)#6	#3@18"
25'	24"	5'–0"	(6)#6	#3@12"
30'	24"	5'–6"	(6)#6	#3@12"
35'	24"	6'–0"	(6)#6	#3@12"
40'	24"	6'–0"	(6)#6	#3@12"
50'	24"	7'–0"	(6)#8	#3@12"

NOTES:
1. CONDUITS AND GROUNDING SHALL BE AS REQUIRED BY THE ELECTRICAL DESIGN.
2. ALL CONCRETE SHALL BE **4,500 PSI** @ 28 DAYS.
3. ALL REINFORCING STEEL SHALL BE GRADE 60.
4. DESIGNED FOR **90 MPH** WIND WITH FIXTURE AREA OF **13 SF.**
5. FOUNDATION DIAMETER AND REINFORCING CIRCLE SHALL BE COORDINATED WITH ANCHOR BOLT LIMITS.
6.
7. FOUNDATIONS SHALL BE AUGGERED INTO UNDISTURBED NATURAL SOIL OR COMPACTED FILL PER SITE GRADING PLANS.

* DEPTH OF FOUNDATION BELOW GRADE

9 / C580 **CONCRETE BASE FOR LIGHT POLE**

SCALE: N.T.S.

LANDSCAPING NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL CAREFULLY COORDINATE CONSTRUCTION ACTIVITIES WITH THAT OF THE EARTHWORK CONTRACTOR AND OTHER SITE DEVELOPMENT.
2. THE CONTRACTOR SHALL VERIFY DRAWING DIMENSIONS WITH ACTUAL FIELD CONDITIONS AND INSPECT RELATED WORK AND ADJACENT SURFACES. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF ALL FINISH GRADES WITHIN THE WORK AREA. THE CONTRACTOR SHALL REPORT TO THE LANDSCAPE ARCHITECT/ENGINEER AND OWNER ALL CONDITIONS WHICH PREVENT PROPER EXECUTION OF THIS WORK.
3. THE EXACT LOCATION OF ALL EXISTING UTILITIES, STRUCTURES AND UNDERGROUND UTILITIES, WHICH MAY NOT BE INDICATED ON THE DRAWINGS, SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES AND UTILITY SERVICES AND IS RESPONSIBLE FOR THEIR REPLACEMENT IF DAMAGED.
4. THE CONTRACTOR SHALL KEEP THE PREMISES FREE FROM RUBBISH AND ALL DEBRIS AT ALL TIMES AND SHALL ARRANGE MATERIAL STORAGE SO AS NOT TO INTERFERE WITH THE OPERATION OF THE PROJECT. ALL UNUSED MATERIALS, RUBBISH AND DEBRIS SHALL BE REMOVED FROM THE SITE.
5. NO TREES OR SHRUBS SHALL BE PLANTED ON EXISTING OR PROPOSED UTILITY LINES.
6. QUALITY ASSURANCE:
   A. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO THE LATEST EDITION OF "STANDARDIZED PLANT NAMES" AS ADOPTED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE.
   B. SIZE AND GRADING: PLANT SIZES AND GRADING SHALL CONFORM TO THE LATEST EDITION OF "AMERICAN STANDARD FOR NURSERY STOCK" AS SPONSORED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC (AAN), UNLESS OTHERWISE SPECIFIED.
   C. NURSERY SOURCE: OBTAIN FRESHLY DUG, HEALTHY, VIGOROUS PLANTS NURSERY GROWN UNDER CLIMACTIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT FOR A MINIMUM OF 2 YEARS. PLANTS SHALL HAVE BEEN LINED OUT IN ROWS, ANNUALLY CULTIVATED, SPRAYED, PRUNED AND FERTILIZED IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE. ALL PLANTS SHALL HAVE BEEN TRANSPLANTED OR ROOT PRUNED AT LEAST ONCE IN THE PAST 3 YEARS. BALLED AND BURLAPPED PLANTS MUST COME FROM SOIL WHICH WILL HOLD A FIRM ROOT BALL. HEELED IN PLANTS AND PLANTS FROM COLD STORAGE ARE NOT ACCEPTABLE.
   D. SUBSTITUTIONS: DO NOT MAKE SUBSTITUTIONS OF TREES AND/OR SHRUB MATERIALS. IF REQUIRED LANDSCAPE MATERIAL IS NOT OBTAINABLE, SUBMIT PROOF OF NON–AVAILABILITY AND PROPOSAL FOR USE OF EQUIVALENT MATERIAL. WHEN AUTHORIZED, ADJUSTMENTS OF CONTRACT AMOUNT (IF ANY) WILL BE MADE BY CHANGE ORDER.
7. SEEDING & PLANTING SEASONS AND TIMING CONDITIONS:
   A. UNLESS OTHERWISE DIRECTED IN WRITING, SEED LAWNS FROM MARCH 15 TO JUNE 15, AND FROM AUGUST 15 TO OCTOBER 15.
   B. UNLESS OTHERWISE DIRECTED IN WRITING PLANT TREES AND SHRUBS FROM MARCH 15 TO JUNE 1, AND FROM AUGUST 15 TO OCTOBER 30.
   C. AREAS UNDERGOING CLEARING OR GRADING AND ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WHERE LAWNS OR PLANTINGS ARE TO BE ESTABLISHED AND WORK IS COMPLETE, SHALL BE RESTORED WITH PERMANENT VEGETATIVE COVER AS SOON AS SITE AREAS ARE AVAILABLE AND WITHIN 14 DAYS AFTER WORK IS COMPLETE; WORK SHALL BE WITHIN THE SEASONAL LIMITATIONS FOR EACH KIND OF LANDSCAPE WORK REQUIRED. PROVIDE STABILIZATION WITH TEMPORARY VEGETATIVE COVER (TOPSOIL AND TEMPORARY COVER SEED MIX) WITHIN 14 DAYS AFTER WORK IS COMPLETE, FOR SEEDING OUTSIDE PERMITTED SEEDING PERIODS.
8. PRODUCTS:
   A. IMPORTED TOPSOIL: PROVIDE TOPSOIL CONFORMING TO THE FOLLOWING:
      i. LOAM TOPSOIL, WELL DRAINED HOMOGENEOUS TEXTURE AND OF UNIFORM GRADE, WITHOUT THE ADMIXTURE OF SUBSOIL MATERIAL AND FREE OF DENSE MATERIAL, HARDPAN, CLAY, STONES, SOD OR OTHER OBJECTIONABLE MATERIAL.
      ii. CONTAINING NOT LESS THAN 5% NOR MORE THAN 20% ORGANIC MATTER IN THAT PORTION OF A SAMPLING PASSING A 1/4" SIEVE WHEN DETERMINED BY THE WET COMBUSTION METHOD ON A SAMPLE DRIED AT 105°C.
      iii. CONTAINING A PH VALUE WITHIN THE RANGE OF 6.5 TO 7.5 ON THAT PORTION OF THE SAMPLE WHICH PASSES A 1/4" SIEVE.
      iv. CONTAINING THE FOLLOWING WASHED GRADATIONS:

SIEVE DESIGNATION	% PASSING
1"	100
1/4"	97–100
NO 200	20–60

   B. SEED MIXTURE:
      PROVIDE FRESH, CLEAN, NEW–CROP SEED MIXED IN THE PROPORTIONS SPECIFIED FOR SPECIES AND VARIETY, AND CONFORMING TO FEDERAL AND STATE STANDARDS. PROVIDE THE FOLLOWING MIXTURES:
      i. LAWN SEED MIX

SUN AND PARTIAL SHADE:

AMOUNT BY: WEIGHT	SPECIES OR VARIETY	MINIMUM % PURITY	MINIMUM % GERMINATION
50%	KENTUCKY BLUE GRASS*	95%	80%
20%	PERENNIAL RYE	98%	90%
30%	CREEPING RED FESCUE	97%	85%
100%			

*MINIMUM 2 (EQUAL PROPORTIONS) VARIETIES AS LISTED IN CORNELL RECOMMENDATIONS FOR TURFGRASS.

SHADE:

AMOUNT BY: WEIGHT	SPECIES OR VARIETY	MINIMUM % PURITY	MINIMUM % GERMINATION
25%	KENTUCKY BLUE GRASS**	95%	80%
20%	PERENNIAL RYE	98%	90%
35%	CREEPING RED FESCUE	97%	85%
20%	CHEWINGS RED FESCUE	97%	85%
100%			

**SHADE TOLERANT VARIETY

      ii TEMPORARY COVER SEED MIX

AMOUNT BY: WEIGHT	SPECIES OR VARIETY	MINIMUM % PURITY	MINIMUM % GERMINATION
100%	ANNUAL RYEGRASS	98%	90%

   C. LIME: NATURAL LIMESTONE CONTAINING AT LEAST 85% OF TOTAL CARBONATES, GROUND TO SUCH FINENESS THAT AT LEAST 90% PASSES A 10–MESH SIEVE AND AT LEAST 50% PASSES A 100–MESH SIEVE.
   D. FERTILIZER:
      i. FOR STARTER FERTILIZING: COMMERCIAL STARTER FERTILIZER, GRANULAR, NONBURNING PRODUCT CONTAINING 5% NITROGEN, 10% AVAILABLE PHOSPHOROUS, AND 5% WATER SOLUABLE POTASH (5–10–5).
      ii. FOR FINAL FERTILIZING: IF APPLIED IN SPRING SEASON, SHALL BE A SLOW RELEASE COMMERCIAL FERTILIZER, GRANULAR, WITH 3–1–2 NPK. IF APPLIED IN FALL SEASON, SHALL BE AS SPECIFIED IN (8.D.i) ABOVE.
   E. TREES, SHRUBS, GROUND COVERS, PERENNIALS, ANNUALS:
      i. PLANTING SOIL MIXTURE: SHALL BE PREMIXED IN BULK, AND CONTAIN THE FOLLOWING BY VOLUME:
         30 PARTS TOPSOIL
         10 PARTS PEAT
         1 PART BONE MEAL
      ii. PEAT: BROWN TO BLACK IN COLOR, WEED AND SEED FREE. DRIED SPHAGNUM PEAT, CONTAINING NOT MORE THAN 9% MINERAL ON A DRY BASIS AND CONFORMING TO NYSDOT 713–15.
      iii. BONE MEAL: FINELY GROUND, RAW, MINIMUM 4% NITROGEN AND 20% PHOSPHORIC ACID. IT SHALL BE DELIVERED IN SEALED BAGS SHOWING THE MANUFACTURER'S GUARANTEED ANALYSIS.
   F. STAKES: 8 FEET LONG, 3 INCH DIA. CEDAR OR P.T. WOOD STAKES.
   G. HOSE: NEW, 2–PLY GARDEN HOSE NOT LESS THAN 1/2 INCH IN DIAMETER.
   H. WEED CONTROL FABRIC: SOIL CHECK AS MANUFACTURED BY BRIGHTON BYPRODUCTS CO. INC, NEW BRIGHTON, PA; MIRASCAPE OR MIRAFI GEOSYNTHETIC PRODUCTS, NORCROSS, PA, OR APPROVED EQUIVALENT.
   I. MULCH:
      i. LAWN AREAS
         OAT OR WHEAT STRAW, FREE OF WEEDS. AN ALTERNATIVE IS WOOD FIBER CELLULOSE IF HYDROSEEDING IS USED.
      ii. PLANT BED AREAS
         GROUND OR SHREDDED HARDWOOD BARK, UNCOLORED. NO PIECES OVER 2 INCHES GREATEST DIMENSION. FREE FROM SAWDUST.
9. EXECUTION:
   A. LANDSCAPE WORK SHALL BE UNDERTAKEN AS SOON AS SITE AREAS ARE AVAILABLE.
   B. TOPSOIL SHALL BE SPREAD NO LESS THAN 4" OVER SUB–GRADE MATERIAL SOIL AMENDMENTS SHALL BE THOROUGHLY MIXED INTO THE TOP 4" OF TOPSOIL, FOLLOWING THE SPECIFICATIONS STATED BELOW.
   C. PERFORM FINE GRADING TO FINISHED ELEVATION ONLY IMMEDIATELY PRIOR TO PLANTING. PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN SURFACE, FREE OF DEPRESSIONS OR RIDGES WITH A UNIFORM LOOSE, FINE TEXTURE.
   D. FERTILIZING:
      i. THE SOIL SHALL BE TESTED FOR PH AND LIME ADDED AS NECESSARY. ALL AMENDMENTS SHALL BE CHECKED AND APPROVED BY LANDSCAPE ARCHITECT BEFORE AMENDMENTS ARE MADE.
      ii. APPLY FERTILIZER AT RATE OF 4 LBS/1000 SF FOR LAWN AREAS.
   E. LAWN:
      i. LAWN SEED MIX: SEED AT THE RATE OF 5 TO 6 LBS PER 1,000 SF.
      ii. TEMPORARY COVER SEED MIX: SEED AT THE RATE OF 3 TO 4 LBS PER 1,000 SF.
      iii. TEMPORARY COVER SEED MIX TO BE APPLIED ONLY FOR LATE FALL OR SUMMER SOIL STABILIZATION OUTSIDE ALLOWED SEEDING PERIODS.
   F. ALL SEEDED AREAS SHALL BE PROTECTED FROM EROSION BY ONE OF THE FOLLOWING METHODS:
      i. A UNIFORM BLANKET OF STRAW APPLIED AT A RATE OF 2 TONS/ACRE MIN, TO BE APPLIED ONCE SEEDING IS COMPLETE.
      ii. WOOD FIBER CELLULOSE APPLIED WITH SEED MIX BY A HYDROSEEDER AT A RATE OF 2,000 LBS/ACRE.
   G. ALL SEEDED SLOPES 3:1 OR GREATER SHALL BE PROTECTED FROM EROSION WITH JUTE MESH OR APPROVED EQUAL.
   H. ALL NEWLY PLANTED AREAS SHALL BE KEPT MOIST BY WATERING UNTIL GRASSES AND GROUND COVERS ARE WELL ESTABLISHED. THE LANDSCAPE CONTRACTOR MUST WATER PLANT MATERIAL WHEN NECESSARY FOR 60 DAYS AFTER INSTALLATION.
   I. LAWNS ARE TO BE WARRANTED UNTIL THEY BECOME ESTABLISHED, UNTIL FINAL ACCEPTANCE, AND NOT LESS THAN 60 DAYS AFTER COMPLETION OF ALL WORK. TREES, SHRUBS, GROUND COVERS, AND PERENNIALS SHALL BE WARRANTED AGAINST DEFECTS INCLUDING POOR GROWTH AND DEATH, EXCEPT WHEN RESULTING FROM OWNER NEGLECT, INCIDENTS THAT ARE BEYOND THE CONTROL OF THE LANDSCAPE INSTALLER AND DAMAGE OR ABUSE BY OTHERS, FOR AT LEAST ONE FULL YEAR AFTER PROJECT COMPLETION.

LaBella
Powered by partnership.
21 Fox Street
Poughkeepsie, NY 12601
(845) 454-3980
labellapc.com

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

Revisions		
2	03/07/23	REVISED PER PLANNING BOARD COMMENTS
1	01/27/23	NO CHANGES THIS SHEET
NO:	DATE:	DESCRIPTION:

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

LANDSCAPE DETAILS

DRAWING NUMBER:

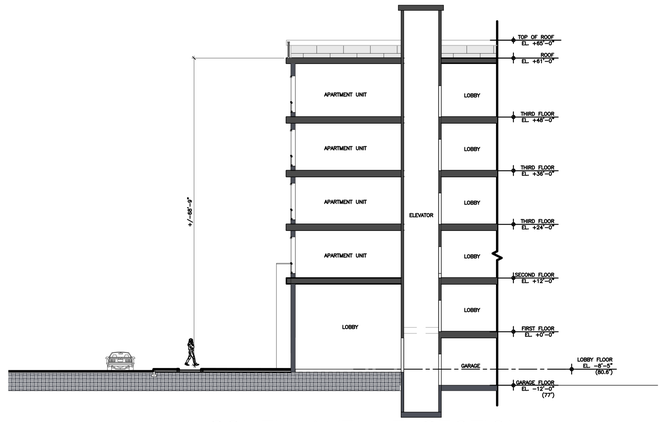
C580

3/7/2023 1:28:28 PM
Z:\2022projects\ARGO\2222201 - South Ave Multi Family Dev\06_Drawings\Civil\01_C580_2222201_LANDSCD.dwg

Drawing Name: Z:\2022projects\ARGO\2222201 – South Ave Multi Family Dev\06_Drawings\Civil\01_C580_2222201_LANDSCD.dwg
Xref's Attached: XBORDER_2222201
Date Printed: Mar 07, 2023, 1:28pm

SOUTH AVENUE MULTI-FAMILY DEVELOPMENT

EAST (SOUTH AVENUE) ELEVATION



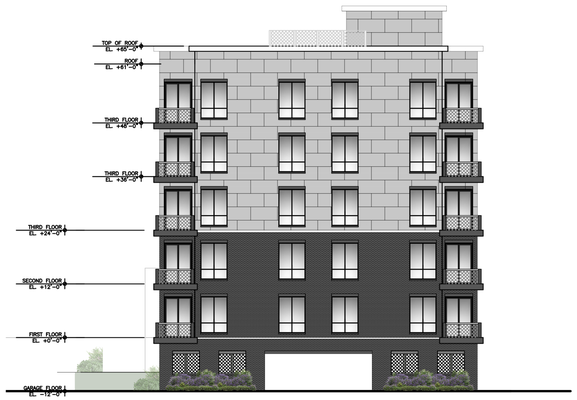
SOUTH AVENUE SECTION

SOUTH ELEVATION

NORTHWEST ELEVATION

WEST (INTERIOR COURTYARD) ELEVATION

NORTHWEST (INTERIOR COURTYARD) ELEVATION



NORTH ELEVATION

0 8' 16' 32'

SCALE: 1/16" = 1'-0"

3.7.23
22054

ARGO CONSTRUCTION AND DEVELOPMENT

VANVOORHIS

181 CHURCH STREET
POUGHKEEPSIE NY 12601

LISCUM McCORMACK VANVOORHIS
ARCHITECTS PLANNERS INTERIORS

ARGO
CONSTRUCTION & DEVELOPMENT

mike@argodev.com
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SOUTH AVENUE

New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

February 28, 2023

Brittany Micheline
LaBella Associates
21 Fox Street
Poughkeepsie, NY 12480

Re: DEC
South Avenue Multi-Family Development
City of Poughkeepsie, Dutchess County, NY
23PR00880

Dear Brittany Micheline:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

rev: J. Carter

Full Environmental Assessment Form

South Avenue Multi-Family Development
South Avenue
City of Poughkeepsie
Dutchess County, New York

Issued: November 29, 2022
Revised: January 27, 2023

Prepared for:
ARGO Development
95 Chestnut Ridge Road
Montvale, NJ 07645

Prepared by:
LaBella Associates
21 Fox Street Suite 201
Poughkeepsie, NY 12601
845-486-1541

LaBella Project No. 2222201

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FULL ENVIRONMENTAL ASSESSMENT FORM, PART 1

FIGURES

Figure 1: USGS Location Map
Figure 2: Orthophoto Tax Map
Figure 3: Land Use Map
Figure 4: Soils Map
Figure 5: Wetlands and Streams Map
Figure 6: DEC Environmental Resources Map
Figure 7: CRIS Map
Figure 8: Scenic Resources Map

ATTACHMENTS

Attachment A - United States Fish and Wildlife Service (USFWS) Informal Species List

Site Plan Set will be submitted separately

1.0 PROJECT DESCRIPTION

1.1 Introduction

The Applicant, ARGO Development is seeking site plan approval from the City of Poughkeepsie, to develop an 87-unit, mid-rise multifamily residential development with underground and surface-level parking. The proposed action will be located on an approximately 2.76-acre parcel on the west side of South Avenue (Tax Lot 937583) in the City of Poughkeepsie. The proposed action includes construction of a five-story building with 87, one-bedroom, apartments located over one level of underground parking (60 spaces), and 56 off-street surface parking spaces (115 total parking spaces). The parcel is currently a wooded lot. The parcel is located within the R-D, Research and Development District. Residential development is a permitted use within the R-D zone, subject to the requirements of the High-Density R-5 District Permitted Uses [Section 19-3.16(2)], and further subject to all other requirements applicable to High-Density R-5 District residential development. An area variance to allow 115 parking spaces where 130 parking spaces are required is being sought from the Zoning Board of Appeals. Primary access will be provided via South Avenue. Municipal water and sanitary sewer are available in South Road. The proposed ground disturbance is approximately 2.5 acres. Since the site will have more than 1 acre of ground disturbance, the proposed action will also require a SPDES General Permit for stormwater.

1.2 Approvals, Consultations and Referrals

The following approvals are required for the implementation of the proposed project:

1. City of Poughkeepsie Planning Board - Site Plan Approval
2. City of Poughkeepsie Zoning Board of Appeals - Area Variance (Parking)
3. City of Poughkeepsie Department of Public Works (DPW) – Highway Work Permit; Water and Sewer Connections
4. Dutchess County Planning Board – GML 239-m referral
5. NYS Department of Environmental Conservation (NYSDEC) – State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-20-001
6. NYS Department of Transportation (NYSDOT) - Drainage Connection
7. NYS Office of Parks, Recreation, and Historic Preservation (OPRHP) – SHPO Consult

2.0 ENVIRONMENTAL ASSESSMENT

2.1 Land Use, Zoning and Public Policy

2.1.1 Land Use

The project site is located in the Research and Development District (R&D). The land uses located within 1,000 feet of the project site are characterized by commercial (office buildings

with associated parking), vacant (wooded areas), public services (Central Hudson Gas & Electric), and single-family residential properties (see Figure 3).

The proposed use, as an 87-unit, mid-rise multifamily residential development with underground and surface-level parking, is a permitted use within the R&D zone, subject to the requirements of the High-Density R-5 District Permitted Uses [Section 19-3.16(2)],798 and further subject to all other requirements applicable to High-Density R-5 District residential development.

The proposed use is permitted and will be consistent with the mixed land use character of the area.

2.1.2 Zoning

In the City of Poughkeepsie, the project site is located within the R&D zoning district. Residential development is classified as a permitted use within the R-D zone, subject to the requirements of the High-Density R-5 District Permitted Uses and all other requirements applicable to High-Density R-5 District residential development. Per ZS 19-3.16(2)(a)(4), multifamily dwellings are classified as permitted uses within the R-5 District. The proposed project requires an area variance to allow 115 parking spaces, where 130 parking spaces are required.

2.1.3 Public Policy

The 2022 City of Poughkeepsie Comprehensive Plan, PK4 Keeps, discusses expanding access to good and affordable housing opportunities, strengthening civic life and commercial vitality, as well as improving residential quality of life, as three of five chosen priorities for the City. The Comprehensive Plan classifies the project site as within the Type 2 residential block type. Goals for this block type include a combination of condition stabilization and inclusive reinvestment that leverages the presence of stronger properties and community assets. The proposed multifamily development will signify reinvestment in the South Avenue community and will revitalize the immediate area. The Comprehensive Plan also classifies the project site as within a five-minute walkshed area, thus creating convenience and accessibility to commercial uses in the immediate vicinity.

2.2 Utilities

The proposed project will involve greater than one acre of ground disturbance; therefore, coverage under the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities will be sought. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared in conformance with the most current New York State Stormwater Management Design Manual and New York State Standards and Specifications for Erosion and Sediment Control.

Municipal water and sanitary sewer are available, and the project is proposed to connect to water and sewer infrastructure within South Road. The Applicant will coordinate with the City of Poughkeepsie Department of Public Works for water and sewer connections.

A drainage connection will be made to the NYSDOT drainage system on the southern side of the property.

2.3 Soils and Water Resources

2.3.1 Soils

The following table provides the soil characteristics for each soil type expected to be found on the project site, according to the USDA Natural Resources Conservation Service website (see Figure 4). Groundwater encountered during the construction will be pumped from the open excavations and discharged to approved sediment trapping devices in accordance with NYSDEC guidelines.

Table 1: Characteristics of Anticipated Soil Types within Project Site

% of SITE	SOIL SYMBOL	SOIL TYPE	FARMLAND CLASSIFICATION	SLOPES	DRAINAGE	DEPTH TO WATER TABLE	DEPTH TO BEDROCK
98.2	Ud	Udorthents, smoothed	Not prime farmland	0-8%	Well drained	~36 to 72 inches	>80 inches
1.8	Ur	Urban Land	Not prime farmland				

2.3.2 Surface Water Resources and Floodplains

According to NYSDEC Wetland and Stream information available through GIS (Figure 5), the EAF Mapper, and National Wetland Inventory mapping, there are no wetlands or other waterbodies on or near the project site.

Therefore, the proposed project will not result in any adverse impacts to wetlands or streams.

2.4 Vegetation and Wildlife

According to the NYSDEC Environmental Resource Mapper (Figure 6), there are known occurrences of the atlantic sturgeon, shortnose sturgeon, and bald eagle on or in the vicinity of the project site.

According to the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), the project lies within the range of records for indiana bat (endangered) and the monarch butterfly, a candidate species. Candidate species are not regulated by the USFWS (See Attachment A). The IPaC also states that there are no critical habitats at the project location.

The proposed project will require clearing of the entire wooded site (2.5 acres) for construction of the proposed apartment building. To avoid direct or indirect take of bat species, it is recommended that any forest clearing take place between October 30 and March 31, as during this time, the bats would be hibernating and not present onsite.

The atlantic sturgeon and shortnose sturgeon are aquatic species and are found within the Hudson River or immediately adjacent tributaries. The Hudson River is approximately 1,450 feet away from the project site, and therefore the proposed project will not result in any adverse impacts to these species.

An information request has been submitted to NYSDEC for further information regarding the bald eagle. However, based on the NYSDEC Environmental Resource Mapper, the centroid for the bald eagle element occurrence record appears to lie in the vicinity of the Poughkeepsie Rural Cemetery. The heavily traveled NYS Route 9 and the offices for Central Hudson Gas & Electric, lie between the project site and the element occurrence record.

Based on Google Earth, the area within 330 feet of the southern edge of the property is dominated by the heavily traveled NYS Route 9 and the northern portion of the Central Hudson Gas & Electric offices. From 330 to 660 feet from the southern property boundary, the area is dominated by the parking lots for Central Hudson Gas & Electric offices. From 660 to approximately 2,795 feet, the area is dominated by the Poughkeepsie Rural Cemetery. A pond, in the center of the Poughkeepsie Rural Cemetery, which may be close to the location of the bald eagle nest, is more than a ½ mile (2,795 feet) from the southern limits of the project area. Given the intervening highway and commercial land use, and the ½ mile distance from the project area, it is unlikely that the construction or operation of the proposed project will have adverse impacts on the bald eagle. LaBella is making an inquiry to NYSDEC Region 3 to determine the location of the nest and to consult on the bald eagle as necessary.

The project site lies in the vicinity of a significant natural community as shown by the crosshatched pattern on figure 6. This significant natural community is the Hudson River Estuary. The project site lies approximately 1,450 feet away from the Hudson River, and thus is not expected to have any effect on the significant natural community.

2.5 Historic and Archaeological Resources

According to the NYS Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) Cultural Resource Information System (CRIS) mapping (Figure 7), there are no National or State Historic Register sites on the project site nor are there any located substantially contiguous to the site.

Approximately 500 feet away from the project site, along the eastern border of Academy Street, there is a National Register Historic Building Site. The Matthew Vassar Estate (NR# 90PR04179) is located at Academy Street in the City of Poughkeepsie and is listed on the National Register. The estate was nominated for its significance based on National Register Criterion C, due to its representation of Mid-19th Century Gothic Revival Architecture

The project site is located within a known archaeologically sensitive area. Therefore, a consultation request has been submitted to NYSOPRHP.

2.6 Environmental Contamination

On-site

Historic uses of the project site include a filling station (circa 1952), with no indication of automotive work that would generate waste oils was provided. Other former uses of the project site include a freight yard, warehouse, coal and coke storage, and a fuel company with five apparent storage tanks. By the 1980s, all structures were removed from the property and it appears as it does today, wooded and overgrown.

A Phase I ESA was completed for the site by LaBella and documented in a July 7, 2022 report. The following recognized environmental conditions (RECs) and significant data gaps (SDGs) were identified in the report for further investigation to determine potential impacts to the site's subsurface soil and groundwater.

RECs: The Subject Property was developed as a freight yard in or before 1936, and has also been used as a biscuit warehouse, an office, a filling station with two gasoline tanks, coal and coke storage, and a fuel company, and five features that appeared to be aboveground gasoline storage systems were on the property.

SDGs: In at least the mid-1900s, the northern adjoining property was previously a filling station with eight gasoline tanks. The southern adjoining property was developed in or before the 1940s and has been used as a filling station, auto repair, a lumber yard, and a railroad spur extended to this property. Additionally, an eastern adjoining property was noted in the EDR report to have previously been a gas station and trucking terminal, and truck-sized features are visible on this property in historical aerial photographs. No information has been provided regarding the condition of the subsurface on these adjoining properties, and it is unknown if impacts to the Subject Property may have occurred.

The Limited Phase II ESA investigation included:

- Subsurface utility mark out and/or use a magnetometer (geophysical survey) to assess for evidence of underground storage tanks (USTs) and backfilled excavations in limited accessible areas at the site.

- Shallow and subsurface sampling at various site locations to assess soil and groundwater conditions.

Based on the completion of this investigation, the following findings were made:

- The geophysical survey did not identify anomalies suggestive of USTs or backfilled excavations in the eastern site area.

- Select SVOCs (primarily PAHs) and metals exceeded soil cleanup guidelines (SCGs) (arsenic, lead, and mercury in shallow soil; lead, mercury, and selenium in groundwater). The majority of the samples came from locations/intervals where fill materials (coal/ash, slag, building materials) were noted. As such, the detections appear related to the presence of these fill materials and are not indicative of a chemical or petroleum release. Metals noted in dissolved groundwater samples are interpreted to likely represent a “false positive” caused by fine particulate passing through the filtration medium and are likely not representative of actual groundwater conditions. VOCs and herbicides were either detected at trace concentrations less than SCGs, or were not detected above laboratory MDLs.

  While these SVOC and metals results may be associated with former site activities, they were identified in intervals containing fill materials, and no direct exposure is anticipated under current site conditions. Should the material be excavated or dewatering be planned, as in the proposed project, then excavated materials and/or groundwater would need to be handled and disposed of properly. Fill material can be reused on site, consistent with 6 NYCRR Part 360.13(c) as backfill for the excavation

from which the fill material was taken, or as fill in areas of similar physical characteristics on the Site. If fill material exhibits historical or visual evidence of contamination (including odors), and will be used in an area with public access, the relocated fill material must be covered with a minimum of 12 inches of soil or fill material that meets the criteria for general fill.

- During subsequent installation of test pits in November to support redevelopment engineering designs, one of the five test pits encountered subsurface fill material (including ash layers) and exhibited an odor and a PID reading of 6.9 ppm. Based on the field observations, a spill was called in to NYSDEC who assigned Spill # 2206980. As these conditions were not noted in the four other test pits installed on the Site nor in the soil borings installed in July 2022, the area with the odor and PID reading appeared to be isolated. LaBella contacted NYSDEC Case Manager, Michael Kilmer, with the plan that the impacted fill material be excavated and disposed of off-Site as part of site redevelopment activities.

- Bulk building materials samples were obtained from various site areas of observed debris on-Site. Among the 67 samples of building materials collected, one material (black asphalt shingles located near and in SS-3C) was identified as ACM. If this material is disturbed during Site redevelopment activities, excavated building materials and associated soils will be Regulated Asbestos-Containing Material (RACM) and disturbance of this material would constitute a form of asbestos abatement and require associated NYSDOL Site-specific variance. LaBella recommends treating this area of buried building debris as RACM since the shingles were broken up and mixed in with other roofing debris, and also since the condition of the debris prevented identify and sampling of all building materials emplaced in this Site area. If other RACM debris is discovered and planned for disturbance during redevelopment, then that material needs to either be tested to confirm if it is not RACM or assumed to be RACM and managed and disposed as such. While the horizontal limits of this RACM were not identified, we estimate an approximate area of 600 square feet. Based on an approximate thickness of 1 foot, project planning could estimate approximately 25 cubic yards of material.

Off-site

Central Hudson Gas and Electric (CHG&E) facility at 284 South Avenue is identified on the Recovered Govt. Archives Landfill (RGA LF) Database in the years 1992 to 1996. This property is adjoining the Subject Property to the southwest but is approximately 250 feet away across Route 9. CHG&E is listed as a RCRA small quantity generator and a RCRA large quantity generator, generating mercury, paint thinner, and corrosive and ignitable waste. No information has been provided indicating a release of hazardous waste to the property and this facility is downgradient of the project site. Therefore, the RCRA generator status of this facility is not expected to have impacted the project.

2.7 Traffic and Parking

2.7.1 Traffic

According to the Institute of Transportation Engineers (ITE) Traffic Generation Manual, 11th Edition, multifamily housing, specifically 87 apartment units, (Land Use Code 221) is expected

to generate 27 vehicle trip ends (vtes) per weekday a.m. peak hour of adjacent street traffic (6 entry/21 exit) and 34 vtes per weekday p.m. peak hour of adjacent street traffic (21 entry/13 exit). The total of 27 a.m. peak hour vtes and total of 34 p.m. peak hour vtes, are each below the NYSDOT and ITE guideline of 100 peak hour trips for warranting a detailed traffic analysis.

Therefore, it is safe to assume that the proposed project will not adversely affect the traffic operations on the surrounding roadway network.

2.7.2 Parking

A parking assessment was undertaken to compare the number of parking spaces proposed for the project against industry standards, the city's zoning code, and other local zoning codes. The South Avenue Multifamily Development consists of 87 single bedroom apartment units with 115 parking spaces. The Institute of Transportation Engineers' (ITE) Parking Generation Manual, 5th Edition, is the industry standard for estimating parking spaces for proposed land uses based on studies of similar existing developments. Land use code (LUC) 221 for Multifamily Housing (mid-rise) was used to estimate the number of parking spaces for the project. A range of parking rates is provided in Parking Generation that include the average rate, the 33rd percentile rate, and the 85th percentile rate. The parking generation is summarized in Table 2.

Table 2: Parking Generation Summary

LUC 221 Multifamily Housing (Mid-rise)		
	Rate	Spaces
Average	0.75	65
33rd Percentile	0.65	57
85th Percentile	0.87	76

Rate: spaces per bedroom

As the table shows, the proposed number of parking spaces exceeds the estimates provided by Parking Generation. The city's draft zoning code requires 1.25 spaces per bedroom which totals 112 spaces. The City of Newburgh requires 0.75 spaces per bedroom (65 spaces) and the City of Beacon requires 1.0 space for each dwelling unit (87 spaces).

Based on ITE's industry parking standard and other local city zoning codes, it is anticipated that the project is proposing sufficient parking at 115 spaces.

FULL ENVIRONMENTAL ASSESSMENT FORM PART 1

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: South Avenue Multi-Family Development		
Project Location (describe, and attach a general location map): South Avenue, City of Poughkeepsie, Dutchess Co., New York ; Tax Parcel ID 6061-52-937583		
Brief Description of Proposed Action (include purpose or need): The Applicant, ARGO Development is seeking site plan approval from the City of Poughkeepsie, to develop an 87-unit, mid-rise multifamily residential development with underground and surface-level parking. The proposed action will be located on an approximately 2.76-acre parcel on the west side of South Avenue (Tax Lot 937583) in the City of Poughkeepsie. The proposed action includes construction of a five-story building with 87, one-bedroom, apartments located over one level of underground parking (60 spaces), and 56 off-street surface parking spaces (115 total). The parcel is currently a wooded lot. The parcel is located within the R-D, Research and Development District. Residential development is a permitted use within the R-D zone, subject to the requirements of the High-Density R-5 District Permitted Uses [Section 19-3.16(2)], and further subject to all other requirements applicable to High-Density R-5 District residential development. Primary access will be provided via South Avenue. Municipal water and sanitary sewer connections are available in South Road. The proposed ground disturbance is approximately 2.5 acres. Since the site will have more than 1 acre of ground disturbance, the proposed action will also require a SPDES General Permit for stormwater. An area variance for 116 parking spaces is required from the ZBA.		
Name of Applicant/Sponsor: ARGO Development (Contact: Mr. Michael Abuladze, CEO)	Telephone: 914-494-2610 E-Mail: mike@argodev.com	
Address: 95 Chestnut Ridge Road		
City/PO: Montvale	State: NJ	Zip Code: 07645
Project Contact (if not same as sponsor; give name and title/role): Same as Applicant/Sponsor	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): South Ave Real Est Assoc LLC	Telephone: 914-494-2610 E-Mail: mike@argodev.com	
Address: 510 Haight Ave		
City/PO: Poughkeepsie	State: NY	Zip Code: 12603

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	City of Poughkeepsie Planning Board - Site Plan Approval	Winter 2022
c. City, Town or Village Zoning Board of Appeals ☑Yes ☐No	City of Poughkeepsie Zoning Board of Appeals - Area Variance (parking)	Winter 2023
d. Other local agencies ☑Yes ☐No	City of Poughkeepsie DPW - Highway Work Permit; Water & Sewer Connections	Winter 2022/2023
e. County agencies ☑Yes ☐No	Dutchess County Planning - GML 239-m Referral	Winter 2022
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSDEC - SPDES GP-0-20-001; SWPPP; NYSOPRHP SHPO consult, NYSDOT - Drainage	Winter 2022/2023
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☑Yes ☐No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

Dutchess County Greenway Compact Program; Hudson River Valley Greenway

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Research and Development District (R-D)

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Poughkeepsie City School District

b. What police or other public protection forces serve the project site?
City of Poughkeepsie Police Department

c. Which fire protection and emergency medical services serve the project site?
City of Poughkeepsie Fire Department

d. What parks serve the project site?
Eastman Park, Harriet Tubman Park, Murphy Park, Mansion Square Park, Kaal Rock Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Residential Development - Apartments

b. a. Total acreage of the site of the proposed action? 2.76 acres
b. Total acreage to be physically disturbed? ~2.5 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 2.76 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 12 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☑ Yes ☐ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	0	0	0	87
At completion of all phases	0	0	0	87

g. Does the proposed action include new non-residential construction (including expansions)? ☐ Yes ☑ No

If Yes,

i. Total number of structures _____

ii. Dimensions (in feet) of largest proposed structure: _____height; _____width; and _____ length

iii. Approximate extent of building space to be heated or cooled: _____ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐ Yes ☑ No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐ Yes ☑ No

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

i*v.* Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☐ No

If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐ Yes ☐ No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☑Yes ☐No

If Yes: The apartment units would require 110 gallons per day. Assuming 87 apartment units (110 gpd) x 87 units = 9,570 GPD.

i. Total anticipated water usage/demand per day: 9,570 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑Yes ☐No

If Yes:

- Name of district or service area: The City of Poughkeepsie Townwide Water District
- Does the existing public water supply have capacity to serve the proposal? ☑Yes ☐No
- Is the project site in the existing district? ☑Yes ☐No
- Is expansion of the district needed? ☐Yes ☑No
- Do existing lines serve the project site? ☑Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☑No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☑No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

NA

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: NA gallons/minute.

d. Will the proposed action generate liquid wastes? ☑Yes ☐No

If Yes: The apartment units would require 110 gallons per day. Assuming 87 apartment units (110 gpd) x 87 units = 9,570 GPD.

i. Total anticipated liquid waste generation per day: 9,570 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

sanitary wastewater

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑Yes ☐No

If Yes:

- Name of wastewater treatment plant to be used: City of Poughkeepsie Sewage Treatment Plant
- Name of district: City of Poughkeepsie
- Does the existing wastewater treatment plant have capacity to serve the project? ☑Yes ☐No
- Is the project site in the existing district? ☑Yes ☐No
- Is expansion of the district needed? ☐Yes ☑No

- Do existing sewer lines serve the project site? ☑ Yes ☐ No
- Will a line extension within an existing district be necessary to serve the project? ☐ Yes ☑ No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐ Yes ☑ No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

NA

vi. Describe any plans or designs to capture, recycle or reuse liquid waste:

None

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑ Yes ☐ No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 1.48 acres (impervious surface)

_____ Square feet or 2.76 acres (parcel size)

ii. Describe types of new point sources. New building, parking lot, sidewalks, pavement

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Areas impacted by development will be diverted to on-site stormwater practices focused on meeting NYSDEC detention and qualitative requirements. In areas not impacted by proposed development, stormwater runoff will continue to flow along existing flow paths.

- If to surface waters, identify receiving water bodies or wetlands:

No

- Will stormwater runoff flow to adjacent properties? ☑ Yes ☐ No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐ Yes ☑ No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑ Yes ☐ No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

Temporary sources during construction

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

Boilers, Electric generation

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐ Yes ☑ No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐ Yes ☐ No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☑ Morning ☑ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

NA

iii. Parking spaces: Existing 0 Proposed 115 Net increase/decrease +115

iv. Does the proposed action include any shared use parking? ☐Yes ☑No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

Primary access will be provided via South Avenue.

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☑No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☑Yes ☐No

EV vehicles may be included inside the parking garage.

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☑No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

NA

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

NA

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 6:30AM-9PM
- Saturday: 6:30AM-9PM
- Sunday: 6:30AM-9PM
- Holidays: 6:30AM-9PM

ii. During Operations:

- Monday - Friday: 24/7
- Saturday: 24/7
- Sunday: 24/7
- Holidays: 24/7

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

The proposed construction activities may result in noise that exceeds local ambient noise levels. These activities are temporary and will be limited to the hours stated in subsection I above.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☑ Yes ☐ No

Describe: The entire project site will be cleared. Adjoining properties are commercial uses.

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Lightpoles and wall mounted lighting (3000K). Full cut-off. Surrounding properties are commercial uses.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe: The entire project site will be cleared. Adjoining properties are commercial uses.

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☑ Yes ☐ No

If Yes:

i. Describe proposed treatment(s):

Typical treatments by licensed professionals.

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☑ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: NA tons per NA (unit of time)
- Operation : NA tons per NA (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: NA
- Operation: NA

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: NA
- Operation: NA

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): parking lots

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	1.48	+1.48
• Forested	2.56	0.08	-2.48
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0.20	1.20	+1.00
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: None	0	0	0

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No

If Yes,

i. Identify Facilities:

Precious Keepers LLC (adult day care center); Vassar Brothers Hospital

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? **Unknown** ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☑ Yes ☐ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☑ Yes – Spills Incidents database — Provide DEC ID number(s): 2206980 (open). See Section 2.6.

☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): B00190, 546031

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

1. Hudson River Waterfront-DeLaval Property (B00190) - Class C: Remediation was successfully completed through the Environmental Restoration Program, and there is an Environmental Easement on the property. 2. Hudson River PCB Sediments (546031) - Class 2: State Superfund Program; Remedial actions vary from deploying signs to installing various covers and are intended to reduce exposures to PCBs in floodplain soils until a permanent remedy is developed. Additionally, a remedial investigation to address floodplain soils in the Upper Hudson River Floodplain under USEPA and State oversight is now underway.

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? >6 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site:

Udorthents, smoothed (Ud)	98.2 %
Urban Land (Ur)	1.8 %
	%

d. What is the average depth to the water table on the project site? Average: ~3-6 feet

e. Drainage status of project site soils:

☑	Well Drained:	98.2 % of site
☐	Moderately Well Drained:	_____% of site
☐	Poorly Drained	_____% of site

f. Approximate proportion of proposed action site with slopes:

☑	0-10%:	98.2 % of site
☐	10-15%:	_____% of site
☐	15% or greater:	_____% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☑ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☐ Yes ☑ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☐ Yes ☑ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site:
Wildlife native to Dutchess County

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes: The project site does not contain a designated significant natural community, however it is near the Hudson River Estuary, which is located off-site and west of the project site.
i. Describe the habitat/community (composition, function, and basis for designation):
ii. Source(s) of description or evaluation:
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:
i. Species and listing (endangered or threatened):
NYSDEC: Atlantic Sturgeon, Bald Eagle, Shortnose Sturgeon; IPaC: Indiana Bat

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:
i. Species and listing:

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use:

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number:

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site?
ii. Source(s) of soil rating(s):

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent:

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name:
ii. Basis for designation:
iii. Designating agency and date:

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes: The historic resource is not substantially contiguous to the project site.

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☑ Historic Building or District

ii. Name: Vassar, Matthew, Estate

iii. Brief description of attributes on which listing is based:

Mid-19th Century Gothic Revival Architecture

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Refer to Figure 8

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): Refer to Figure 8

iii. Distance between project and resource: 0-5 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Michael Abuladze, ARGO Development Date 1/27/22

Signature Krithika Prabhakaran, Agent for Applicant Krithika Prabhakaran Title Urban Planner, LaBella Associates

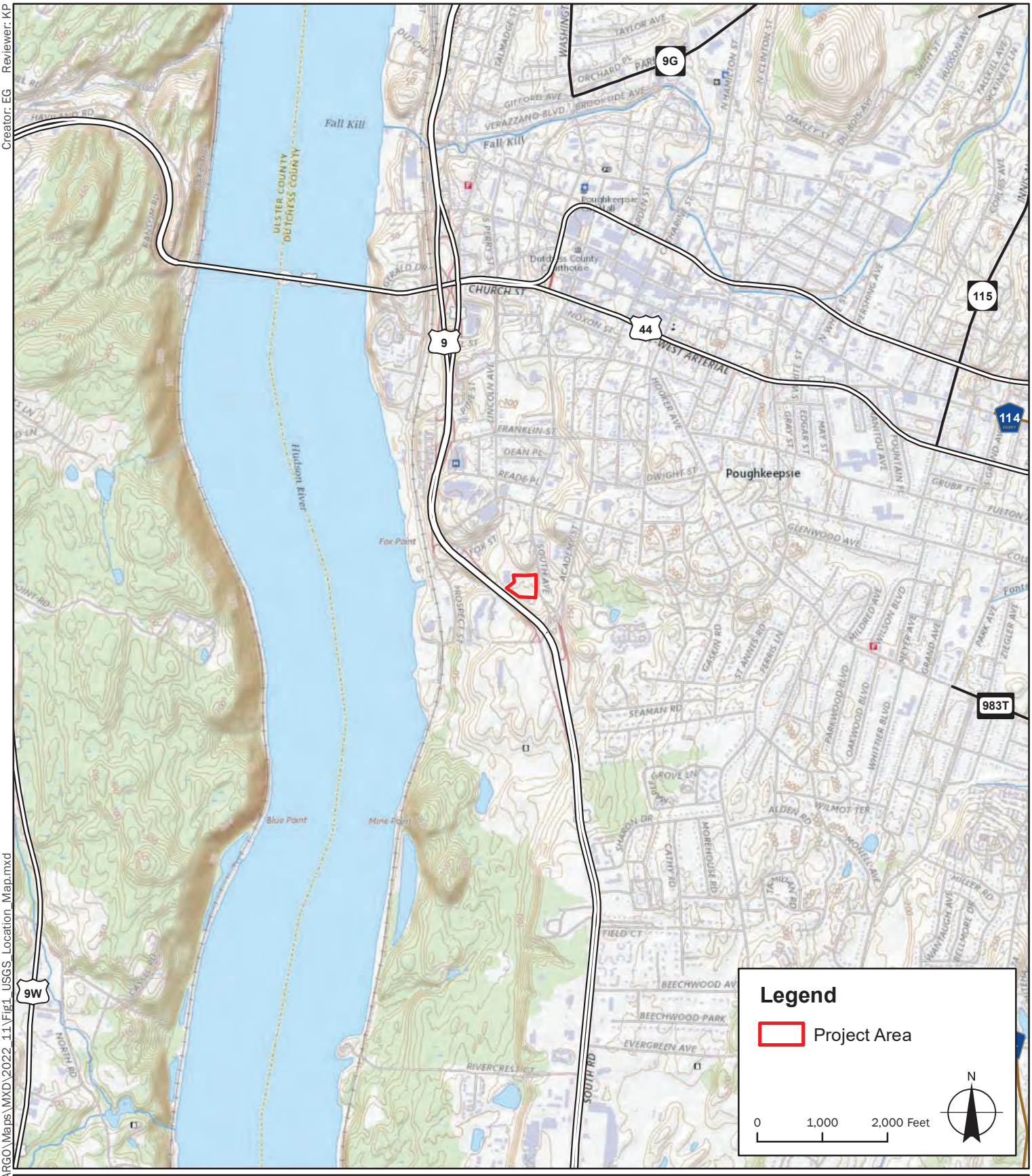
PRINT FORM

Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	Yes
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	B00190, 546031
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	No
E.2.h.ii [Surface Water Features]	No
E.2.h.iii [Surface Water Features]	No
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No
E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes

E.2.o. [Endangered or Threatened Species - Name]	Atlantic Sturgeon, Bald Eagle, Shortnose Sturgeon
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name]	Vassar, Matthew, Estate
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

FIGURES



Creator: EG Reviewer: KP

Path: B:\GIS\DIG\Projects\FEAF\ARGO\Maps\MXD\2022_11\Fig1_USGS_Location_Map.mxd

Sources:
1. Project Area: LaBella 2022; Regrid 2021
2. Streets: NYS GIS Program Office 2022
3. Basemap: USGS Topo Map

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South Avenue,
City of Poughkeepsie,
Dutchess Co., New York

South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/14/2022

USGS Location Map

FIGURE 1

Creator: EG Reviewer: KP

Path: B:\GIS\DIG\Projects\FEAF\ARGO\Maps\MXD\2022_11\Fig2_Orthophoto_Tax_Map.mxd

Sources:
1. Project Area: LaBella 2022
2. Tax Parcels: Regrid 2021
3. Streets: NYS GIS Program Office 2022
4. Basemap: Bing Maps

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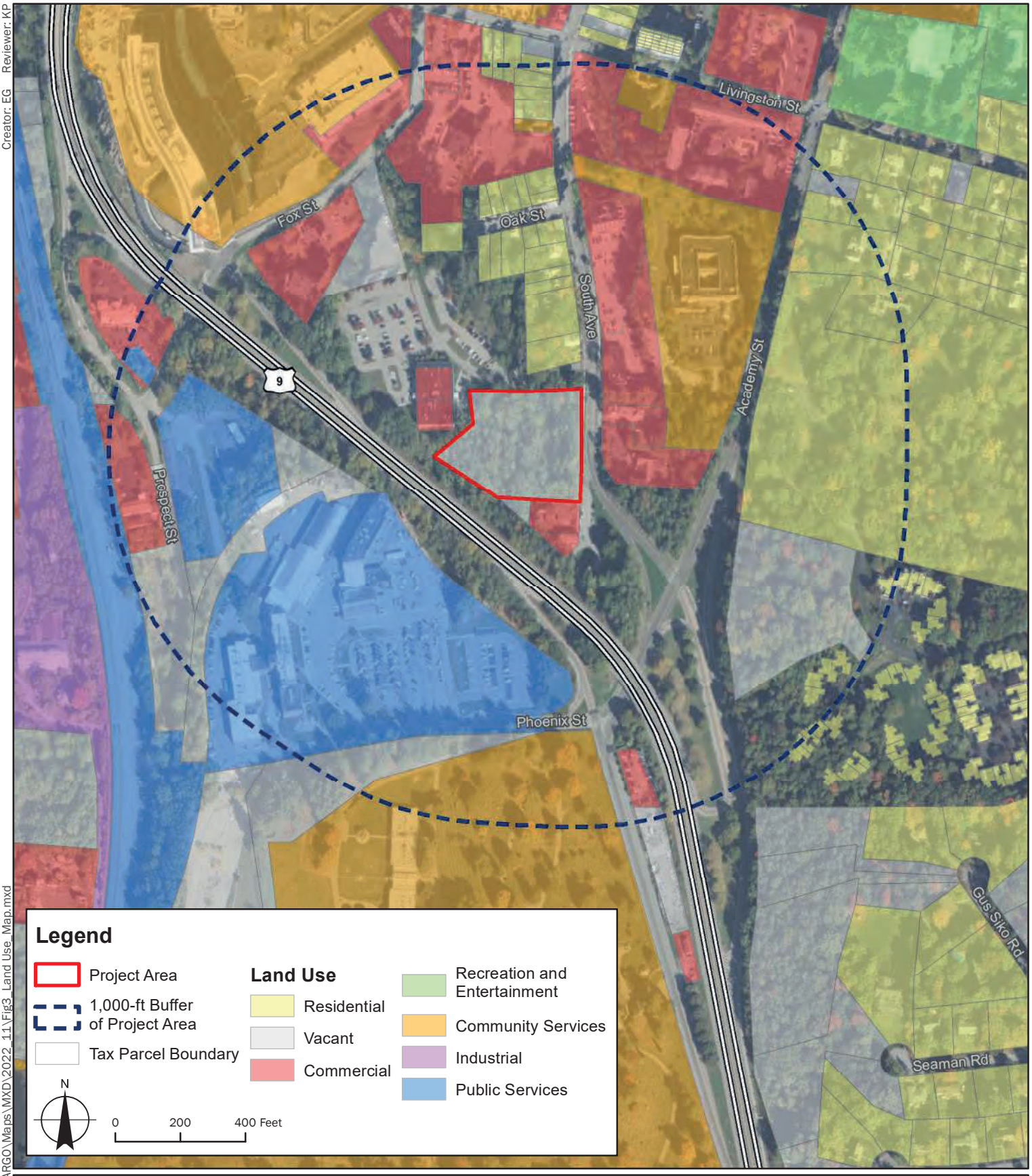
City of Poughkeepsie,
Dutchess Co., New York

South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/14/2022

Orthophoto Tax Map

FIGURE 2



Creator: EG Reviewer: KP

Path: B:\GIS\DIG\Projects\FEAF\ARGO\Maps\MXD\2022_11\Fig3_Land Use_Map.mxd

Sources:
1. Project Area: LaBella, 2022
2. Tax Parcels: Regrid, 2021
3. Land Use: Regrid, 2021
4. Streets: NYS GIS Program Office, 2022
5. Basemap: Bing Maps

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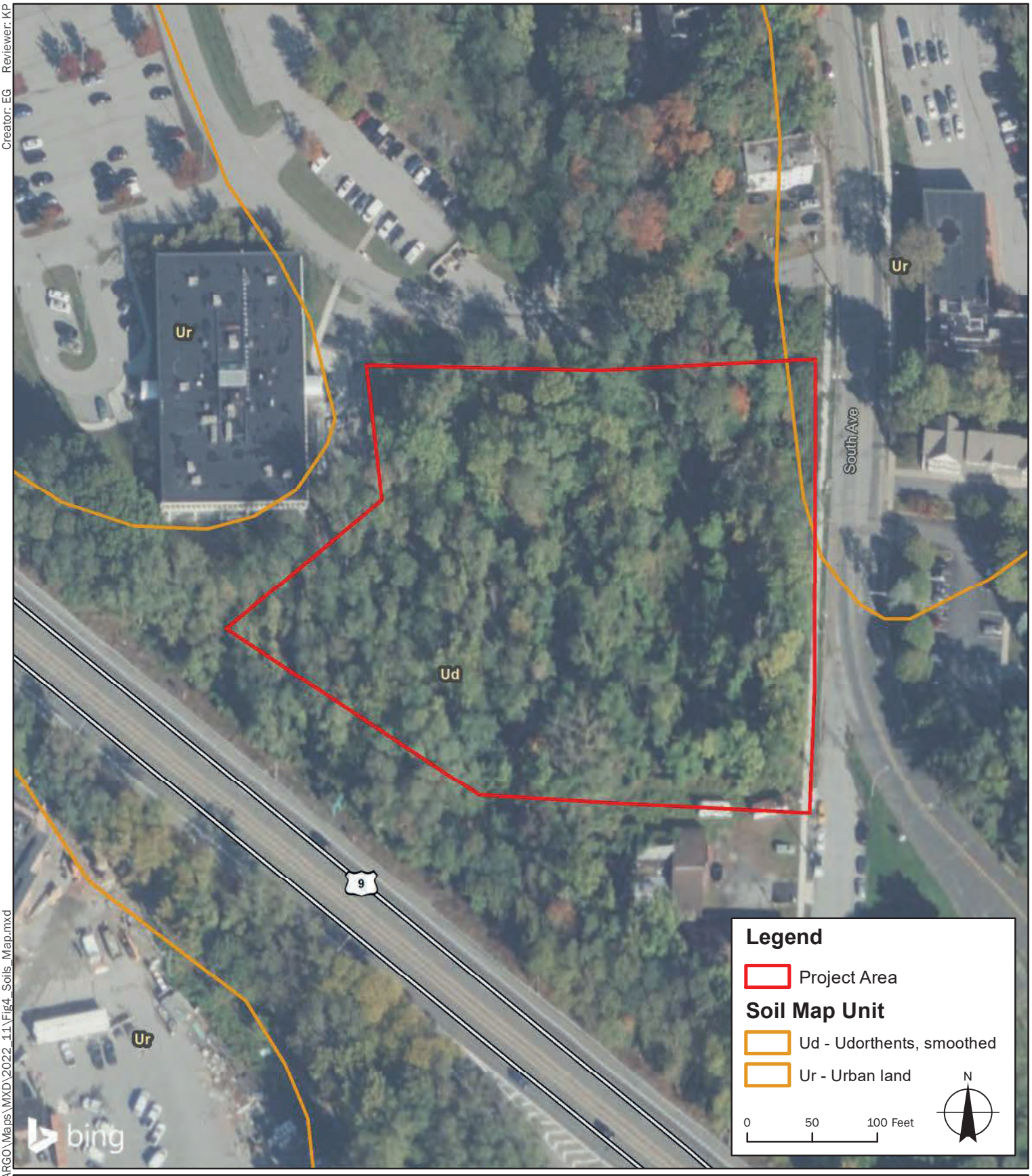
City of Poughkeepsie,
Dutchess Co., New York

South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/14/2022

Land Use Map

FIGURE 3



Creator: EG Reviewer: KP

Path: B:\GIS\DIG\Projects\FEAF\ARGO\Maps\MXD\2022_11\Fig4_Soils_Map.mxd

Sources:
1. Project Area: LaBella 2022
2. Soil Map Unit: USDA/NRCS 2021
3. Streets: NYS GIS Program Office 2022
4. Basemap: Bing Maps

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Dutchess Co., New York

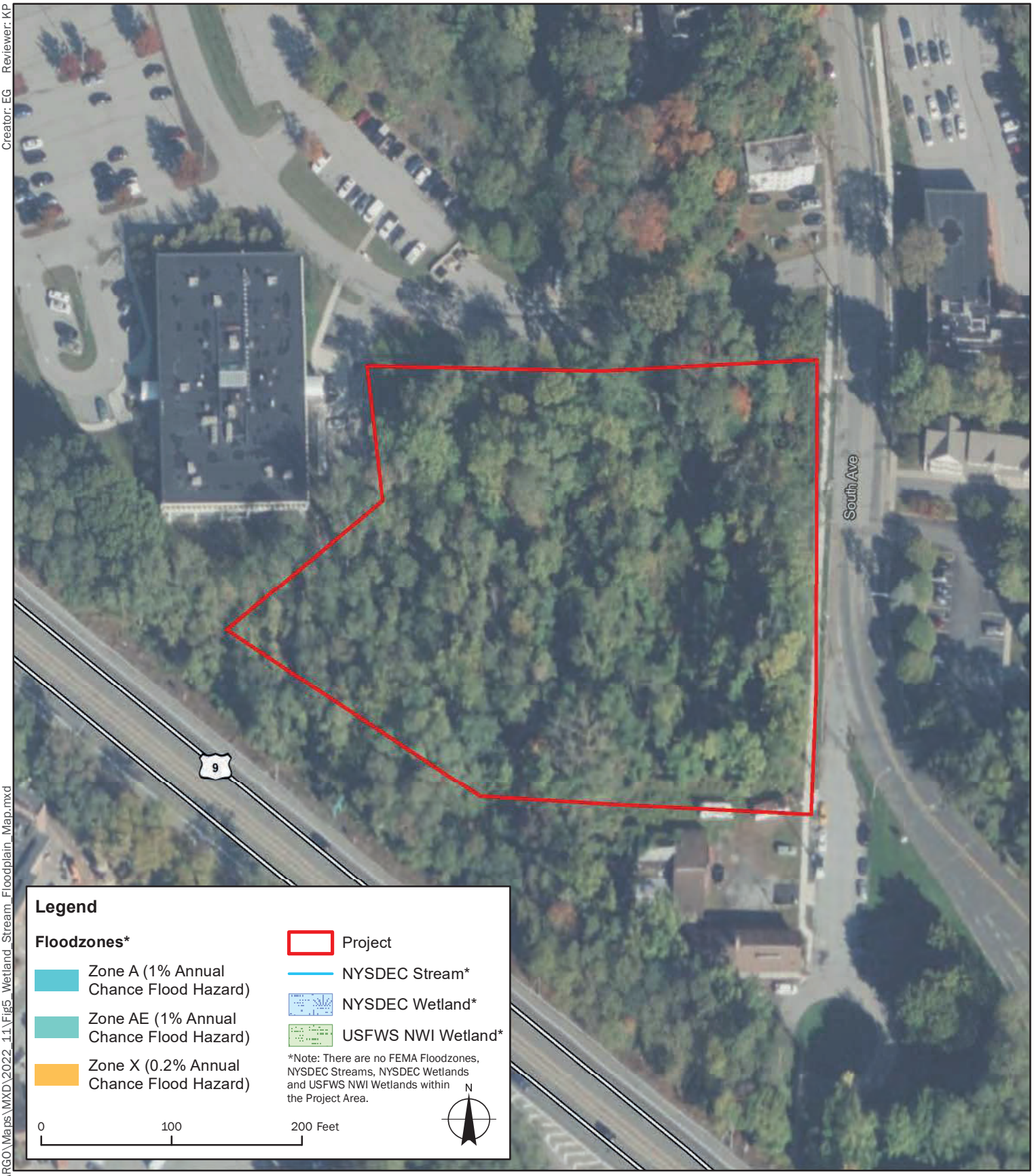
South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/14/2022

Soils Map

FIGURE 4

Creator: EG Reviewer: KP



Path: B:\GIS\DIG\Projects\FEAF\ARGO\Maps\MXD\2022_11\Fig5_Wetland_Stream_Floodplain_Map.mxd

Sources:
1. Project Area: LaBella 2022; Regrid 2021
2. NYSDEC Streams: NYSDEC 2021
3. NYSDEC Wetlands: NYSDEC 2006
4. NWI Wetlands: USFWS 2022
5. Flood Zones: FEMA 2021
6. Streets: NYS GIS Program Office 2022
7. Basemap: Bing Maps

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South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/14/2022

Wetland, Stream, and Floodplain Map

FIGURE 5

Creator: EG Reviewer: KP

Path: B:\GIS\DIG\Projects\FEAF\ARGO\Maps\MXD\2022_11\Fig6_DEC_ERM_Map.mxd

Sources:
1. Project Area: LaBella 2022
2. Rare Plants or Animals and Significant Natural Communities: NYSDEC Environmental Resource Mapper (ERM) 2022
3. NYSDEC Wetlands: NYSDEC 2006
4. Streets: NYS GIS Program Office 2022
5. Basemap: Bing Maps

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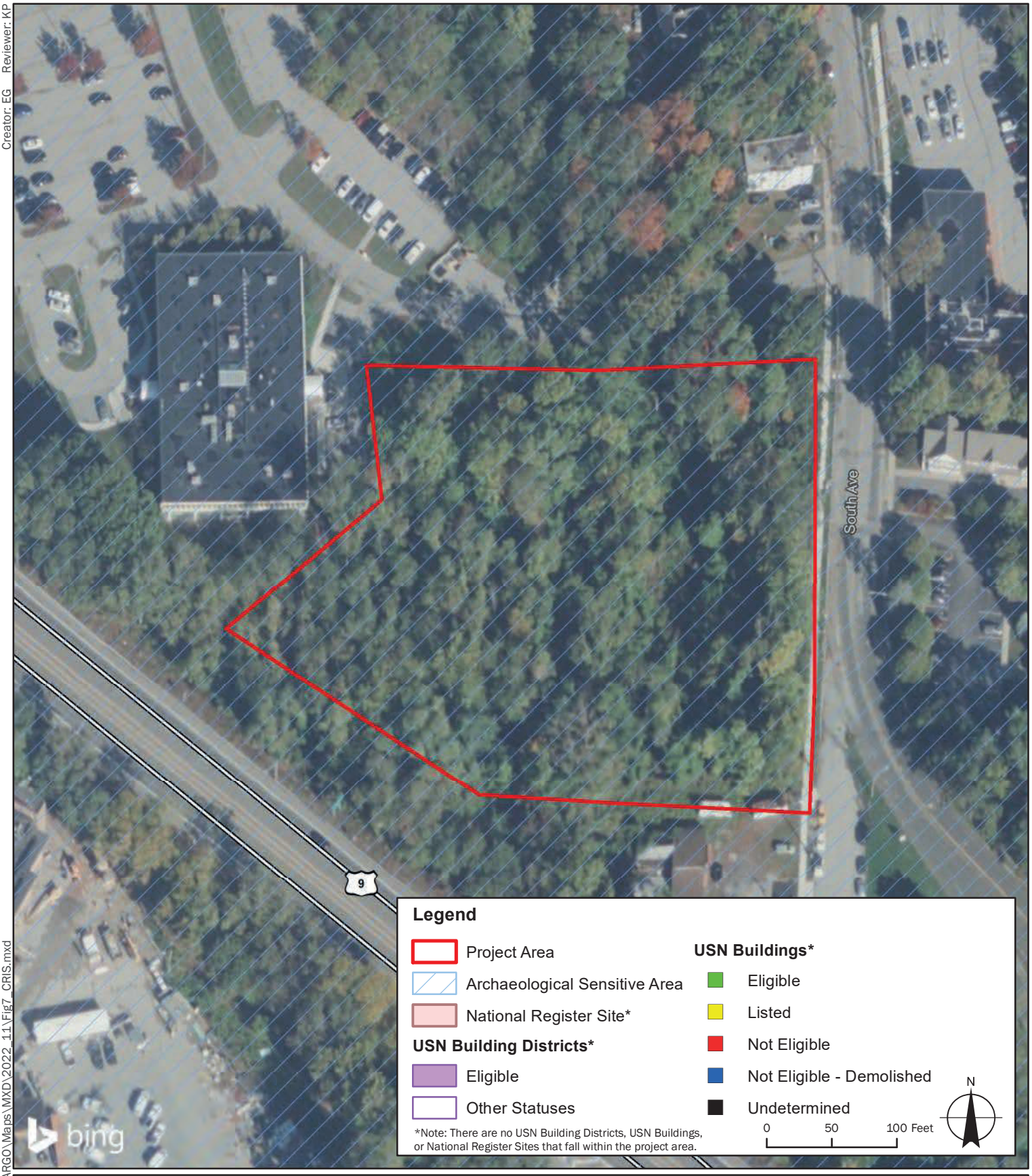
Dutchess Co., New York

South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/15/2022

NYSDEC Environmental Resource Map

FIGURE 6



Creator: EG Reviewer: KP

Path: B:\GIS\DIG\Projects\FEAF\ARGO\Maps\MXD\2022_11\Fig7_CRIS.mxd

Sources:
1. Project Area: LaBella, 2022
2. Archaeologically Sensitive Areas/National Register Sites: NYSOPRHP Cultural Resource Information System (CRIS), 2022
3. Streets: NYS GIS Program Office, 2022
4. Basemap: Bing Maps

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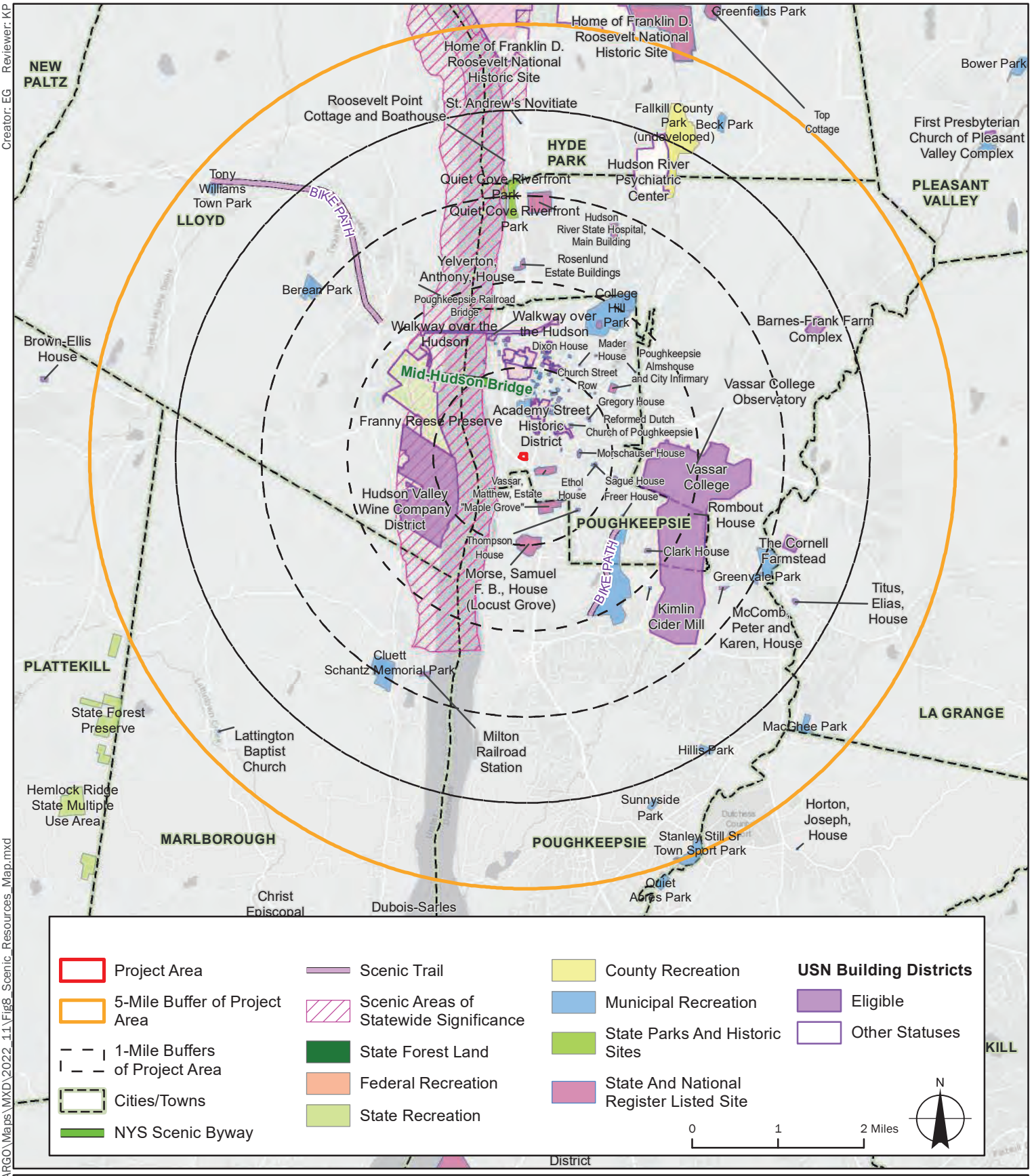
Dutchess Co., New York

South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/15/2022

NYSOPRHP Cultural Resource Information System (CRIS) Map

FIGURE 7



Sources:
1. Project Area: LaBella 2022
2. Streets: NYS GIS Program Office 2022
3. Scenic Resources: NYS GIS Program Office; NYSDEC; NYSDOT; NYSOPRHP; CRIS 2022
4. Basemap: Bing

Note: National and State building districts shown. However, isolated listed and eligible buildings are too many to show at this scale.

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South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/15/2022

Publicly Accessible Federal, State, or Local Scenic or Aesthetic Resources Map

FIGURE 8

Attachment A
United States Fish and Wildlife Service (USFWS) Informal Species List

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Dutchess County, New York

Local office

New York Ecological Services Field Office

(607) 753-9334
(607) 753-9699

3817 Luker Road
Cortland, NY 13045-9385

http://www.fws.gov/northeast/nyfo/es/section7.htm

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Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

NOT FOR CONSULTATION

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat Myotis sodalis Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5949	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

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Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NOT FOR CONSULTATION

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Blue-winged Warbler *Vermivora pinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

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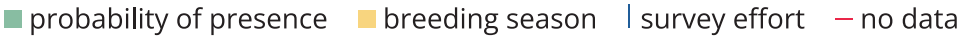

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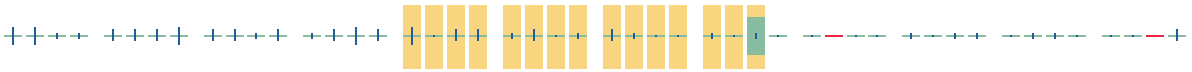
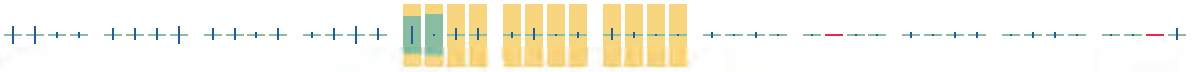
Eastern Whip-poor-will BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Prairie Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Red-headed Woodpecker BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wood Thrush BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the

locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

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3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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Coastal Barrier Resources System

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

THERE ARE NO KNOWN COASTAL BARRIERS AT THIS LOCATION.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the official CBRS maps. The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

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Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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THE CITY OF POUGHKEEPSIE
NEW YORK
DEVELOPMENT DEPARTMENT
62 CIVIC CENTER PLAZA, 2ND FLOOR
POUGHKEEPSIE, NY 12601
Phone: (845) 451-4263 Fax: (845) 451-4006

MEMORANDUM

To: ARGO Development, Applicant

From: Natalie Quinn, Development Director

Date: February 17, 2023

Re: South Avenue #937583, #PB2023-055 - SEQRA Classification

Upon review of project materials provided by the applicant, including Short EAF Part 1 and site plan application, it is my understanding that the proposed action to be undertaken includes the construction of an 87 unit, 5 story mid-rise multifamily residential development with underground and surface-level parking.

Based on the above description it is the determination of the planning division that the proposed action is classified as an Unlisted Action with regards to SEQRA, and therefore is subject to an uncoordinated or coordinated (optional) environmental review. This determination was made due to the fact that the proposed action was not expressly listed in 6 NYCRR Section 617.4 (Type I Actions) or 617.5 (Type II Actions).

January 27, 2023

Ms. Anne Saylor, Chair
Poughkeepsie Planning Board
62 Civic Center Plaza
3rd Floor
Poughkeepsie, NY 12601

RE: Parking Assessment
South Avenue Multifamily Development
City of Poughkeepsie, NY
LaBella Project: 2222201

Dear Ms. Saylor:

LaBella Associates has completed a Parking Generation Assessment for the South Avenue Multifamily Development in the City of Poughkeepsie. The purpose of this assessment is to compare the number of parking spaces proposed for the project against industry standards, the city's zoning code, and other local zoning codes.

The South Avenue Multifamily Development consists of 87 single bedroom apartment units with 115 parking spaces. The Institute of Transportation Engineers' (ITE) *Parking Generation Manual, 5th Edition*, is the industry standard for estimating parking spaces for proposed land uses based on studies of similar existing developments. Land use code (LUC) 221 for Multifamily Housing (mid-rise) was used to estimate the number of parking spaces for the project. A range of parking rates is provided in *Parking Generation* that include the average rate, the 33rd percentile rate, and the 85th percentile rate. The parking generation is summarized in Table 1.

Table 1 – Parking Generation Summary

LUC 221 Multifamily Housing (Mid-rise)		
	Rate	**Spaces**
Average	0.75	65
33rd Percentile	0.65	57
85th Percentile	0.87	76

Rate: spaces per bedroom

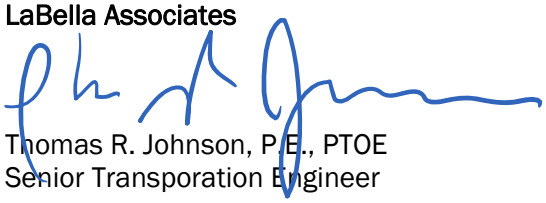
As the table shows, the proposed number of parking spaces exceeds the estimates provided by *Parking Generation*. The parking results from the *Parking Generation Manual* are attached.

The city's draft zoning code requires 1.25 spaces per bedroom which totals 112 spaces. The City of Newburgh requires 0.75 spaces per bedroom (65 spaces) and the City of Beacon requires 1.0 space for each dwelling unit (87 spaces).

Based on ITE's industry parking standard and other local city zoning codes, it is LaBella's professional opinion that the project is proposing sufficient parking at 115 spaces. We are providing this information to you for review as the applicant will be seeking an area variance for parking from the Zoning Board of Appeals.

Respectfully submitted,

LaBella Associates



Thomas R. Johnson, P.E., PTOE
Senior Transporation Engineer

Attachment

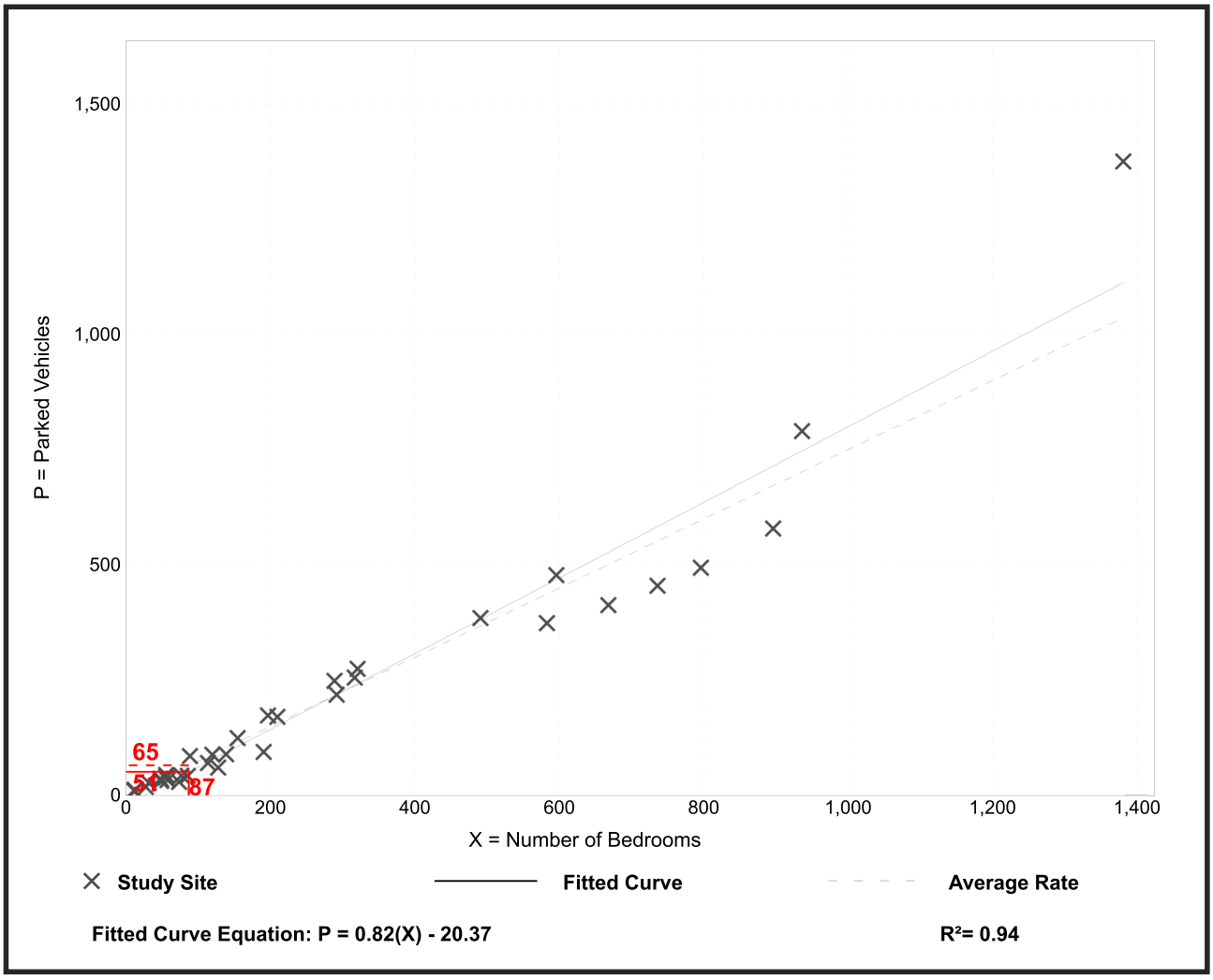
Multifamily Housing (Mid-Rise)
(221)

Peak Period Parking Demand vs:	**Bedrooms**
On a:	**Weekday (Monday - Friday)**
Setting/Location:	**General Urban/Suburban (no nearby rail transit)**
Peak Period of Parking Demand:	**10:00 p.m. - 5:00 a.m.**
Number of Studies:	35
Avg. Num. of Bedrooms:	294

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.75	0.41 - 1.00	0.65 / 0.87	0.70 - 0.80	0.15 (20%)

Data Plot and Equation



Parking Generation Manual, 5th Edition ● Institute of Transportation Engineers

Hydraulic Overview

Job Number: 2497
Report Description: Ordinary Group I

Job

Job Number: 2497	Design Engineer: Paul Tirums
Job Name: South Avenue	Phone: 914-490-3269
Address 1: Multi-Family Development	State Certification/License Number: 073178-1
Address 2: Poughkeepsie, NY 12601	AHJ: City of Poughkeepsie
Address 3:	Job Site/Building: Parking Garage

System

Density: 0.15 gpm/ft²	Area of Application: 2030 ft² (Actual 2030 ft²)
Most Demanding Sprinkler Data: 5.6 K-Factor 19.50 at 12.125	Hose Streams: 250.00
Coverage Per Sprinkler: 130 ft²	Number Of Sprinklers Calculated: 17 0
System Pressure Demand: 51.679	System Flow Demand: 350.08
Total Demand: 600.08 @ 51.679	Pressure Result: +30.140 (36.8%)

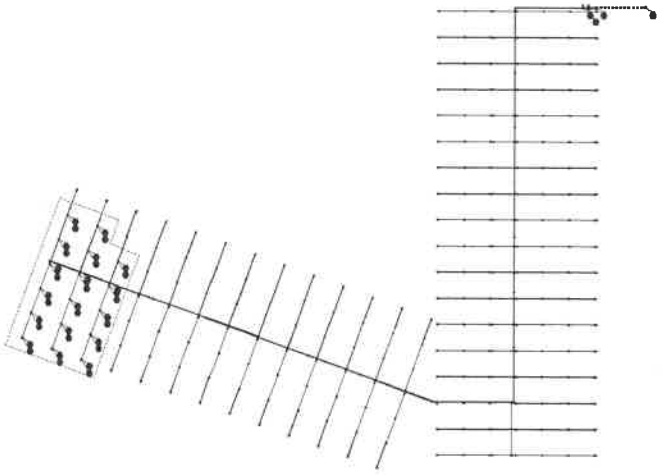
Supplies

Node	Name	Flow(gpm)	Hose Flow(gpm)	Static(psi)	Residual(psi)
110	Water Supply	919.00	250.00	110.000	48.000

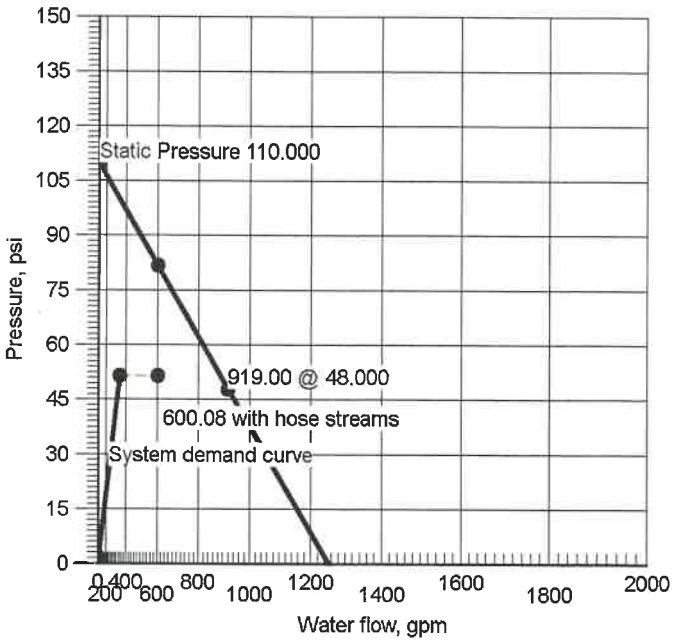
Check Point Gauges

Identifier	Pressure(psi)	K-Factor(K)	Flow(gpm)

Garage 1.17.23.cad



Water Supply at Node 110 (919.00, 0.00, 110.000, 48.000)



Hydraulic Summary

Job

Job Number: 2497	Design Engineer: Paul Tirums
Job Name: South Avenue	State Certification/License Number: 073178-1
Address 1: Multi-Family Development	AHJ: City of Poughkeepsie
Address 2: Poughkeepsie, NY 12601	Job Site/Building: Parking Garage
Address 3:	Drawing Name: Garage 1.17.23.cad

System

Most Demanding Sprinkler Data: 5.6 K-Factor 19.50 at 12.125

Hose Allowance At Source: 250.00

Additional Hose Supplies

Node	Flow(gpm)

Total Hose Streams: 250.00

System Flow Demand	Total Water Required (Including Hose Allowance)
350.08	600.08

Maximum Pressure Unbalance In Loops: 0.000

Maximum Velocity Above Ground: 11.71 between nodes 106 and 118

Maximum Velocity Under Ground: 3.63 between nodes 110 and 109

Volume capacity of Wet Pipes	Volume capacity of Dry Pipes
115.93 gal	497.93 gal

Remote Area(s)

Occupancy	Job Suffix
Ordinary Group I	

Density	Area of Application
0.15 gpm/ft²	2030 ft² (Actual 2030 ft²)

Number Of Sprinklers Calculated	Number Of Nozzles Calculatec	Coverage Per Sprinkler
17	0	130 ft²

AutoPeak Results: Pressure For Remote Area(s) Adjacent To Most Remote Area: Right: 50.322

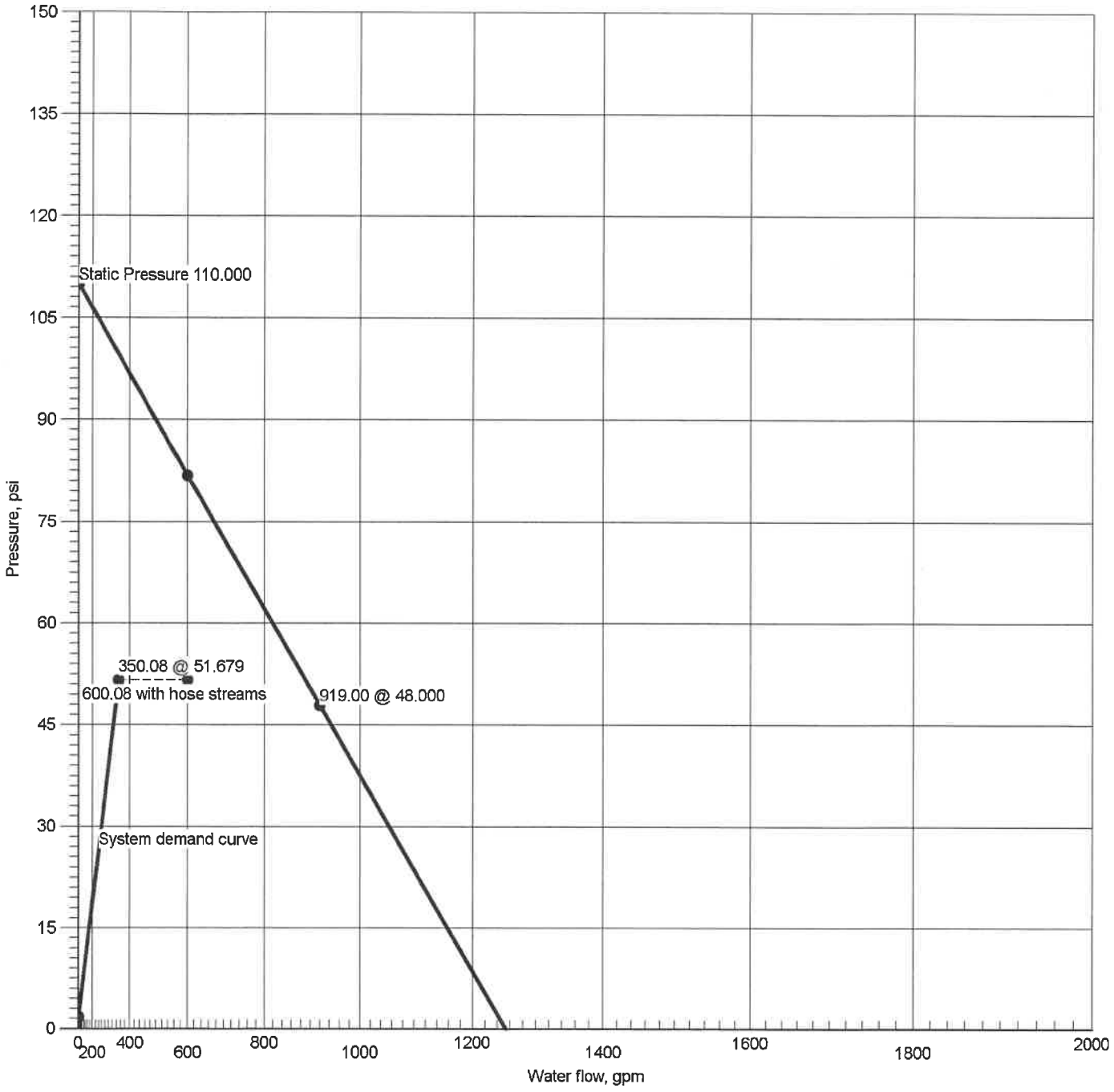
Supplies

Node	Name	Hose Flow (gpm)	Static (psi)	Residual (psi)	@	Flow (gpm)	Available (psi)	@	Total Demand (gpm)	Required (psi)	Safety Margin (psi)
110	Water Supply	250.00	110.000	48.000		919.00	81.820		600.08	51.679	30.140

Contractor

Contractor Number: 21		Contact Name: Amie Gerundo	Contact Title: Designer
Name of Contractor: Calculated Fire Protection		Phone: 845-677-5201	Extension: 7
Address 1: 2510 Route 44		FAX:	
Address 2: Salt Point, NY 12578		E-mail: Amie@calculatedfire.com	
Address 3:		Web-Site: Calculatedfire.com	

Water Supply at Node 110



Hydraulic Graph
Water Supply at Node 110

Static: Pressure
110.000

Residual: Pressure
48.000 @ 919.00

Available Pressure at System Demand
81.820 @ 600.08

Required Pressure at System Demand
51.679 @ 350.08

Required Pressure at System Demand (Including Hose Allowance at Source)
51.679 @ 600.08

Summary Of Outflowing Devices

Job Number: 2497
Report Description: Ordinary Group I

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)
⇨ **Sprinkler**	**1**	**19.50**	**19.50**	**5.6**	**12.125**
Sprinkler	2	19.54	19.50	5.6	12.176
Sprinkler	3	19.63	19.50	5.6	12.290
Sprinkler	4	19.67	19.50	5.6	12.341
Sprinkler	5	19.69	19.50	5.6	12.357
Sprinkler	6	19.82	19.50	5.6	12.524
Sprinkler	7	20.10	19.50	5.6	12.886
Sprinkler	8	20.14	19.50	5.6	12.939
Sprinkler	9	20.29	19.50	5.6	13.131
Sprinkler	10	21.08	19.50	5.6	14.170
Sprinkler	11	21.12	19.50	5.6	14.228
Sprinkler	12	21.28	19.50	5.6	14.438
Sprinkler	13	21.37	19.50	5.6	14.567
Sprinkler	14	21.44	19.50	5.6	14.656
Sprinkler	15	21.52	19.50	5.6	14.762
Sprinkler	16	21.58	19.50	5.6	14.851
Sprinkler	17	22.31	19.50	5.6	15.865

⇨ Most Demanding Sprinkler Data

Node Analysis

Job Number: 2497
Report Description: Ordinary Group I

Node	Elevation(Foot)	Fittings	Pressure(psi)	Discharge(gpm)	
1	0'-3	Spr(-12.125)	12.125	19.50	
2	0'-3	Spr(-12.176)	12.176	19.54	
3	0'-3	Spr(-12.290)	12.290	19.63	
4	0'-3	Spr(-12.341)	12.341	19.67	
5	0'-3	Spr(-12.357)	12.357	19.69	
6	0'-3	Spr(-12.524)	12.524	19.82	
7	0'-3	Spr(-12.886)	12.886	20.10	
8	0'-3	Spr(-12.939)	12.939	20.14	
9	0'-3	Spr(-13.131)	13.131	20.29	
10	0'-3	Spr(-14.170)	14.170	21.08	
11	0'-3	Spr(-14.228)	14.228	21.12	
12	0'-3	Spr(-14.438)	14.438	21.28	
13	0'-3	Spr(-14.567)	14.567	21.37	
14	0'-3	Spr(-14.656)	14.656	21.44	
15	0'-3	Spr(-14.762)	14.762	21.52	
16	0'-3	Spr(-14.851)	14.851	21.58	
17	0'-3	Spr(-15.865)	15.865	22.31	
110	-4'-0	S	51.679	350.08	
100	-0'-10½	PO(3'-7)	13.433		
101	-0'-10½	PO(3'-7)	13.607		
102	-0'-10½	PO(3'-7)	14.241		
103	-0'-10½	PO(3'-7)	15.604		
104	-0'-10½	PO(7'-0½)	17.435		
105	-0'-10½	PO(7'-0½)	17.504		
106	-0'-10½	PO(7'-0½)	17.752		
107	-6'-5		35.012		
108	-8'-0	T(37'-8½)	46.128		
109	-4'-0	E(17'-7)	51.551		
111	-0'-10½	PO(3'-7)	13.486		
112	-0'-10½	PO(3'-7)	13.661		
113	-0'-10½	PO(3'-7)	14.297		
114	-0'-10½	PO(3'-7)	15.666		
115	-0'-10½	PO(3'-7)	13.679		
116	-0'-10½	PO(3'-7)	13.857		
117	-0'-10½	PO(3'-7)	14.501		
118	-0'-10½	PO(3'-7)	15.889		
119	-0'-10½	PO(3'-7)	16.026		
120	-0'-10½	PO(3'-7)	16.233		
121	-0'-10½	PO(3'-7)	16.120		
122	-0'-10½	PO(3'-7)	16.328		
123	-0'-10½	PO(3'-7)	17.403		

Pipe Type / Downstream / Upstream	Diameter / Elevation	Flow / Discharge	Velocity / K-Factor	HWC / Pt / Pn	Friction Loss / Fittings	Length / Eq. Length / Total Length	Pressure / Summary
• • • • • Route 1 • • • • •							
SP	1.0490	19.50	7.24	100	0.173991	1'-1½	Pf 0.817
1	0'-3	19.50	5.6	12.125	Sprinkler,	3'-7	Pe 0.490
100	-0'-10½			13.433	PO(3'-7)	4'-8½	Pv
BL	1.6820	19.50	2.82	100	0.017455	10'-0	Pf 0.175
100	-0'-10½			13.433			Pe
101	-0'-10½			13.607		10'-0	Pv
BL	1.6820	39.13	5.65	100	0.063320	10'-0	Pf 0.633
101	-0'-10½	19.63		13.607	Flow (q) from Route 3		Pe
102	-0'-10½			14.241		10'-0	Pv
BL	1.6820	59.23	8.55	100	0.136339	10'-0	Pf 1.363
102	-0'-10½	20.10		14.241	Flow (q) from Route 7		Pe
103	-0'-10½			15.604		10'-0	Pv
BL	1.6820	80.31	11.60	100	0.239457	0'-7	Pf 1.831
103	-0'-10½	21.08		15.604	Flow (q) from Route 10	7'-0½	Pe
104	-0'-10½			17.435	PO(7'-0½)	7'-8	Pv
CM	4.2600	123.20	2.77	100	0.005722	12'-0	Pf 0.069
104	-0'-10½	42.89		17.435	Flow (q) from Route 13		Pe 0.000
105	-0'-10½			17.504		12'-0	Pv
CM	4.2600	246.70	5.55	100	0.020674	12'-0	Pf 0.248
105	-0'-10½	80.48 + 43.02		17.504	Flow (q) from Route 2 and 14		Pe
106	-0'-10½			17.752		12'-0	Pv
CM	4.2600	350.08	7.88	100	0.039503	344'-3½	Pf 14.861
106	-0'-10½	81.07 + 22.31		17.752	Flow (q) from Route 5 and 17	31'-11	Pe 2.399
107	-6'-5			35.012	Ee2(3'-9), 3E(9'-4½), 2f(-0.000)	376'-2½	Pv
CM	4.2600	350.08	7.88	120	0.028193	2'-1	Pf 10.430
107	-6'-5			35.012		13'-2	Pe 0.686
108	-8'-0			46.128	DPV(-10.000), E(13'-2)	15'-3	Pv
FR	6.3570	350.08	3.54	120	0.004014	4'-0	Pf 7.157
108	-8'-0			46.128		35'-2½	Pe -1.734
109	-4'-0			51.551	BFP(-7.000), 2E(17'-7)	39'-2½	Pv
UG	6.2800	350.08	3.63	140	0.003202	40'-0	Pf 0.128
109	-4'-0			51.551			Pe
110	-4'-0			51.679	Water Supply	40'-0	Pv
		250.00			Hose Allowance At Source		
110		600.08					
• • • • • Route 2 • • • • •							
SP	1.0490	19.54	7.25	100	0.174657	1'-1½	Pf 0.820
2	0'-3	19.54	5.6	12.176	Sprinkler,	3'-7	Pe 0.490
111	-0'-10½			13.486	PO(3'-7)	4'-8½	Pv
BL	1.6820	19.54	2.82	100	0.017522	10'-0	Pf 0.175
111	-0'-10½			13.486			Pe
112	-0'-10½			13.661		10'-0	Pv
BL	1.6820	39.21	5.66	100	0.063563	10'-0	Pf 0.636
112	-0'-10½	19.67		13.661	Flow (q) from Route 4		Pe
113	-0'-10½			14.297		10'-0	Pv
BL	1.6820	59.36	8.57	100	0.136861	10'-0	Pf 1.369
113	-0'-10½	20.14		14.297	Flow (q) from Route 8		Pe
114	-0'-10½			15.666		10'-0	Pv
BL	1.6820	80.48	11.62	100	0.240371	0'-7	Pf 1.838
114	-0'-10½	21.12		15.666	Flow (q) from Route 11	7'-0½	Pe 0.000
105	-0'-10½			17.504	PO(7'-0½)	7'-8	Pv
• • • • • Route 3 • • • • •							
SP	1.0490	19.63	7.29	100	0.176171	1'-1½	Pf 0.827
3	0'-3	19.63	5.6	12.290	Sprinkler,	3'-7	Pe 0.490
101	-0'-10½			13.607	PO(3'-7)	4'-8½	Pv
• • • • • Route 4 • • • • •							
SP	1.0490	19.67	7.30	100	0.176845	1'-1½	Pf 0.831
4	0'-3	19.67	5.6	12.341	Sprinkler,	3'-7	Pe 0.490
112	-0'-10½			13.661	PO(3'-7)	4'-8½	Pv
• • • • • Route 5 • • • • •							
SP	1.0490	19.69	7.31	100	0.177065	1'-1½	Pf 0.832
5	0'-3	19.69	5.6	12.357	Sprinkler,	3'-7	Pe 0.490
115	-0'-10½			13.679	PO(3'-7)	4'-8½	Pv
BL	1.6820	19.69	2.84	100	0.017764	10'-0	Pf 0.178
115	-0'-10½			13.679			Pe
116	-0'-10½			13.857		10'-0	Pv

Pipe Type / Downstream / Upstream	Diameter / Elevation	Flow / Discharge	Velocity / K-Factor	HWC Pt	Pn	Friction Loss / Fittings	Length / Eq. Length / Total Length	Pressure Summary
BL	1.6820	39.50	5.70	100		0.064439	10'-0	Pf 0.644
116	-0'-10½	19.82		13.857		Flow (q) from Route 6		Pe
117	-0'-10½			14.501			10'-0	Pv
BL	1.6820	59.80	8.63	100		0.138744	10'-0	Pf 1.387
117	-0'-10½	20.29		14.501		Flow (q) from Route 9		Pe
118	-0'-10½			15.889			10'-0	Pv
BL	1.6820	81.07	11.71	100		0.243671	0'-7	Pf 1.864
118	-0'-10½	21.28		15.889		Flow (q) from Route 12	7'-0½	Pe 0.000
106	-0'-10½			17.752		PO(7'-0½)	7'-8	Pv
• • • • • Route 6 • • • • •								
SP	1.0490	19.82	7.36	100		0.179280	1'-1½	Pf 0.842
6	0'-3	19.82	5.6	12.524		Sprinkler,	3'-7	Pe 0.490
116	-0'-10½			13.857		PO(3'-7)	4'-8½	Pv
• • • • • Route 7 • • • • •								
SP	1.0490	20.10	7.46	100		0.184061	1'-1½	Pf 0.864
7	0'-3	20.10	5.6	12.886		Sprinkler,	3'-7	Pe 0.490
102	-0'-10½			14.241		PO(3'-7)	4'-8½	Pv
• • • • • Route 8 • • • • •								
SP	1.0490	20.14	7.48	100		0.184763	1'-1½	Pf 0.868
8	0'-3	20.14	5.6	12.939		Sprinkler,	3'-7	Pe 0.490
113	-0'-10½			14.297		PO(3'-7)	4'-8½	Pv
• • • • • Route 9 • • • • •								
SP	1.0490	20.29	7.53	100		0.187300	1'-1½	Pf 0.880
9	0'-3	20.29	5.6	13.131		Sprinkler,	3'-7	Pe 0.490
117	-0'-10½			14.501		PO(3'-7)	4'-8½	Pv
• • • • • Route 10 • • • • •								
SP	1.0490	21.08	7.83	100		0.200965	1'-1½	Pf 0.944
10	0'-3	21.08	5.6	14.170		Sprinkler,	3'-7	Pe 0.490
103	-0'-10½			15.604		PO(3'-7)	4'-8½	Pv
• • • • • Route 11 • • • • •								
SP	1.0490	21.12	7.84	100		0.201727	1'-1½	Pf 0.947
11	0'-3	21.12	5.6	14.228		Sprinkler,	3'-7	Pe 0.490
114	-0'-10½			15.666		PO(3'-7)	4'-8½	Pv
• • • • • Route 12 • • • • •								
SP	1.0490	21.28	7.90	100		0.204479	1'-1½	Pf 0.960
12	0'-3	21.28	5.6	14.438		Sprinkler,	3'-7	Pe 0.490
118	-0'-10½			15.889		PO(3'-7)	4'-8½	Pv
• • • • • Route 13 • • • • •								
SP	1.0490	21.37	7.93	100		0.206173	1'-1½	Pf 0.968
13	0'-3	21.37	5.6	14.567		Sprinkler,	3'-7	Pe 0.490
119	-0'-10½			16.026		PO(3'-7)	4'-8½	Pv
BL	1.6820	21.37	3.09	100		0.020684	10'-0	Pf 0.207
119	-0'-10½			16.026				Pe
120	-0'-10½			16.233			10'-0	Pv
BL	1.6820	42.89	6.19	100		0.075026	8'-11½	Pf 1.203
120	-0'-10½	21.52		16.233		Flow (q) from Route 15	7'-0½	Pe
104	-0'-10½			17.435		PO(7'-0½)	16'-0½	Pv
• • • • • Route 14 • • • • •								
SP	1.0490	21.44	7.96	100		0.207329	1'-1½	Pf 0.974
14	0'-3	21.44	5.6	14.656		Sprinkler,	3'-7	Pe 0.490
121	-0'-10½			16.120		PO(3'-7)	4'-8½	Pv
BL	1.6820	21.44	3.10	100		0.020800	10'-0	Pf 0.208
121	-0'-10½			16.120				Pe
122	-0'-10½			16.328			10'-0	Pv
BL	1.6820	43.02	6.21	100		0.075447	8'-6½	Pf 1.176
122	-0'-10½	21.58		16.328		Flow (q) from Route 16	7'-0½	Pe 0.000
105	-0'-10½			17.504		PO(7'-0½)	15'-7	Pv
• • • • • Route 15 • • • • •								
SP	1.0490	21.52	7.99	100		0.208723	1'-1½	Pf 0.980
15	0'-3	21.52	5.6	14.762		Sprinkler,	3'-7	Pe 0.490
120	-0'-10½			16.233		PO(3'-7)	4'-8½	Pv
• • • • • Route 16 • • • • •								
SP	1.0490	21.58	8.01	100		0.209892	1'-1½	Pf 0.986
16	0'-3	21.58	5.6	14.851		Sprinkler,	3'-7	Pe 0.490
122	-0'-10½			16.328		PO(3'-7)	4'-8½	Pv
• • • • • Route 17 • • • • •								

Hydraulic Analysis

Job Number: 2497
Report Description: Ordinary Group I

Pipe Type / Downstream / Upstream	Diameter / Elevation	Flow / Discharge	Velocity / K-Factor	HWC / Pt / Pn	Friction Loss / Fittings	Length / Eq. Length / Total Length	Pressure Summary
SP	1.0490	22.31	8.28	100	0.223108	1'-1½	Pf 1.048
17	0'-3	22.31	5.6	15.865	Sprinkler,	3'-7	Pe 0.490
123	-0'-10½			17.403	PO(3'-7)	4'-8½	Pv
BL	1.6820	22.31	3.22	100	0.022383	8'-6½	Pf 0.349
123	-0'-10½			17.403		7'-0½	Pe 0.000
106	-0'-10½			17.752	PO(7'-0½)	15'-7	Pv

Equivalent Pipe Lengths of Valves and Fittings (C=120 only)

$$\left(\frac{\text{Actual Inside Diameter}}{\text{Schedule 40 Steel Pipe Inside Diameter}}\right)^{4.87} = \text{Factor}$$

C Value Multiplier

Value Of C	100	130	140	150
Multiplying Factor	0.713	1.16	1.33	1.51

Pipe Type Legend

AO	Arm-Over
BL	Branch Line
CM	Cross Main
DN	Drain
DR	Drop
DY	Dynamic
FM	Feed Main
FR	Feed Riser
MS	Miscellaneous
OR	Outrigger
RN	Riser Nipple
SN	Swing Nipple
SP	Sprig
ST	Stand Pipe
UG	Underground

Units Legend

Diameter	Inch
Elevation	Foot
Flow	gpm
Discharge	gpm
Velocity	fps
Pressure	psi
Length	Foot
Friction Loss	psi/Foot
HWC	Hazen-Williams Constant
Pt	Total pressure at a point in a pipe
Pn	Normal pressure at a point in a pipe
Pf	Pressure loss due to friction between points
Pe	Pressure due to elevation difference between indicated points
Pv	Velocity pressure at a point in a pipe

Fittings Legend

ALV	Alarm Valve
AngV	Angle Valve
b	Bushing
BalV	Ball Valve
BFP	Backflow Preventer
BV	Butterfly Valve
C	Cross Flow Turn 90°
cplg	Coupling
Cr	Cross Run
CV	Check Valve
DelV	Deluge Valve
DPV	Dry Pipe Valve
E	90° Elbow
EE	45° Elbow
Ee1	11¼° Elbow
Ee2	22½° Elbow
f	Flow Device
fd	Flex Drop
FDC	Fire Department Connection
fE	90° FireLock(TM) Elbow
fEE	45° FireLock(TM) Elbow
flg	Flange
FN	Floating Node
fT	FireLock(TM) Tee
g	Gauge
GloV	Globe Valve
GV	Gate Valve
Ho	Hose
Hose	Hose
HV	Hose Valve
Hyd	Hydrant
LtE	Long Turn Elbow
mecT	Mechanical Tee
Noz	Nozzle
P1	Pump In
P2	Pump Out
PIV	Post Indicating Valve
PO	Pipe Outlet
PrV	Pressure Relief Valve
PRV	Pressure Reducing Valve
red	Reducer/Adapter
S	Supply
sCV	Swing Check Valve
SFx	Seismic Flex
Spr	Sprinkler
St	Strainer
T	Tee Flow Turn 90°
Tr	Tee Run
U	Union
WirF	Wirsbo
WMV	Water Meter Valve
Z	Cap

Stormwater Pollution Prevention Plan

Prepared for:
ARGO Development
95 Chestnut Ridge Rd
Montvale, NJ 07645

Submitted by:
LaBella Associates
21 Fox Street
Poughkeepsie, NY 12601
(845) 454-3980

LaBella
Powered by partnership.

South Ave Multi-Family Development

City of Poughkeepsie, Dutchess County, New York

DATE: OCTOBER 2022
LAST REVISED: NOVEMBER 2022
PROJECT NO. 2222201

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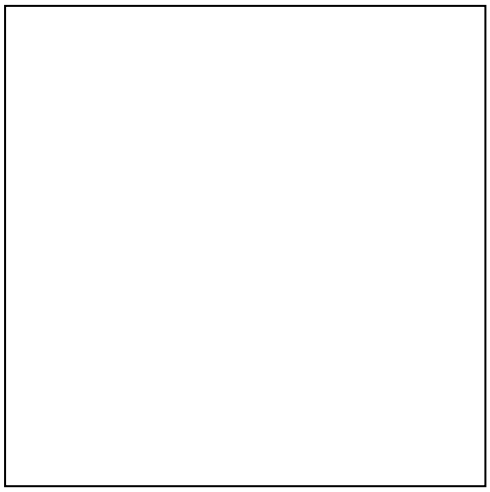
PREPARER OF THE SWPPP

"I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Name and Title[1]: Chris Lapine, PE

Date: November 2022



[1] *This is a signature of a New York State licensed Professional Engineer employed by LaBella Associates that is duly authorized to sign and seal Stormwater Pollution Prevention Plans (SWPPPs), NOIs, and NOTs prepared under their direct supervision. Refer to Appendix B for the SWPPP Preparer Certification Form, and Appendix I for the LaBella Certifying Professionals Letter.*

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Appendix B: Forms

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- MS4 SWPPP Acceptance Form
- SWPPP Preparer Certification Form
- Owner/Operator Certification Form
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Appendix C: Project Evaluation and Design Calculations

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Appendix H: NYSDEC “Deep-Ripping and Decompaction,” April 2008

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1.0 EXECUTIVE SUMMARY

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared for major activities associated with construction of a 89-unit, mid-rise multifamily apartment building in the City of Poughkeepsie. This SWPPP includes the elements necessary to comply with the national baseline general permit for construction activities enacted by the U.S. Environmental Protection Agency (EPA) under the National Pollutant Discharge Elimination System (NPDES) program and all local governing agency requirements. This SWPPP must be executed and permit coverage must be obtained prior to the commencement of construction activity.

This SWPPP has been developed in accordance with the "New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity," Permit No. GP-0-20-001, effective January 29, 2020 through January 28, 2025. The SWPPP and accompanying plans identify and detail stormwater management, pollution prevention, and erosion and sediment control measures necessary during and following completion of construction.

This SWPPP and the accompanying plans entitled "South Avenue Multi-Family Development" have been submitted as a set. These engineering drawings are considered an integral part of this SWPPP. Therefore, this SWPPP is not considered complete without them. References made herein to "the plans" or to a specific "sheet" refer to these drawings.

This report considers the impacts associated with the intended development with the purpose of:

1. Maintaining existing drainage patterns as much as possible while continuing the conveyance of upland watershed runoff;
2. Controlling increases in the rate of stormwater runoff resulting from the proposed development so as not to adversely alter downstream conditions; and
3. Mitigating potential stormwater quality impacts and preventing soil erosion and sedimentation resulting from stormwater runoff generated both during and after construction.

The analysis and design completed and documented in this report is intended to be part of the application made for a multi-family residential development project completed on behalf of the Owner/Operator.

This Master Stormwater Pollution Prevention Plan (SWPPP) has been prepared to support the state environmental quality review (SEQR) of the proposed project. The intent of this Master SWPPP is to provide sufficient documentation for an overall SEQR determination, and to serve as the baseline for the final SWPPP that will be prepared for the proposed development, as approved. As such, design concepts are provided for stormwater collection and conveyance systems, and water quality and quantity control facilities. This report is not intended to be a final engineering document as certain detailed aspects of the project are likely to change during the site plan review process. Portions of the design were advanced to substantiate regulatory compliance determinations and to provide input pertinent to the environmental assessment of impacts of the proposed project. Final stormwater practice designs will be advanced in support of and during the site plan permitting process.

The methodology used to develop this Master SWPPP shall be adhered to for the preparation of the project's final SWPPP. Stormwater quality and quantity controls designed for this Master SWPPP are preliminary in nature and are intended to demonstrate their location, approximate size, and design concept. Detailed analysis of these practices must be performed, and their design refined as part of the final SWPPP.

The stormwater analysis identified herein follows *the "NYS Stormwater Management Design Manual," dated January 2015 (Design Manual) and the USDA Technical Release No. 20.* This Master SWPPP and analysis are an integral part of the project's natural resource management plan which takes into consideration existing parameters of site topography, soils, erosion potential, surface waters, their connectivity and water quality of receiving water bodies.

Stormwater mitigation measures primarily involve preventing soil erosion and sedimentation resulting from stormwater run-off during and after construction. During construction, this is accomplished by sequencing site disturbance activities to establish erosion controls, minimize disturbed areas, maintain existing vegetation as much as possible, and stabilize newly disturbed areas as soon as possible. Stormwater pollutant controls utilized during construction will include temporary sediment barriers and sediment traps designed in accordance with the *"NYS Standards and Specifications for Erosion and Sediment Control"*. Stormwater pollutant controls utilized after construction will include stormwater quality control practices designed in accordance with the Manual.

Land development can also have an effect on site hydrology. Impervious areas such as rooftops, roads, driveways, and parking lots can cause rainfall to rapidly convert into stormwater runoff. Increases in runoff can cause stream bank erosion and floodplain expansion. To mitigate these impacts, stormwater quantity controls will be implemented to capture and release run-off at less than pre-development discharge rates. A hydrologic and hydraulic analysis was/will be performed using computer modeling and an evaluation of the proposed improvements across the project site.

1.1 Project Description

ARGO Development is proposing development project, to include: a 89-unit, mid-rise multifamily apartment building with the associated parking and stormwater installation. The project will disturb greater than 1-acre of land. A Site Location Map has been provided in Appendix A, as Figure A-1.

This type of project is included in Table 2 of Appendix B of GP-0-20-001; and the project site is not located in one of the watersheds listed in Appendix C of GP-0-20-001. Therefore, this SWPPP includes post-construction stormwater management practices, as well as erosion and sediment controls.

This project is located within the City Of Poughkeepsie regulated, traditional land use control Municipal Separate Stormwater Sewer System (MS4). Therefore, an MS4 SWPPP Acceptance Form is required to accompany NOIs submitted to the NYSDEC.

Runoff from the project site will discharge to the Hudson River, which is not included in the list of Section 303(d) water bodies included in Appendix E of GP-0-20-001.

Project construction activities will consist primarily of site grading, paving, building construction, and the installation of storm drainage, water supply, sanitary sewer, and public utility infrastructure necessary to support the proposed development project. Construction phase pollutant sources anticipated at the site are disturbed (exposed) soil, vehicle fuels and lubricants, chemicals associated with building construction, and building materials. Without adequate control there is the potential for each type of pollutant to be transported by stormwater.

1.2 Stormwater Pollution Controls

The stormwater pollution controls outlined herein have been designed and evaluated in accordance with the following standards and guidelines:

- New York State Stormwater Management Design Manual, dated January 2015 (Design Manual).
- New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016 (SSESC).
- City of Poughkeepsie Stormwater Management and Erosion and Sediment Control

Stormwater quality will be enhanced through the implementation of temporary and permanent erosion and sediment control measures, the proposed stormwater management practice(s), and other construction-phase pollution controls outlined herein.

The proposed stormwater management approach consisting of pipes and on-site stormwater management practices will adequately collect, treat, and convey the stormwater runoff.

An infiltration pond and detention basin will be used to manage and treat stormwater runoff generated by the proposed development project.

Pre- and post-development surface runoff rates have been evaluated for the 1-, 10-, and 100-year 24-hour storm events. Comparison of pre- and post-development watershed conditions demonstrates that the peak rate of runoff from the project site will not be increased.

2.0 SITE CHARACTERISTICS

2.1 Land Use and Topography

The project site is located within the Research and Development (R-D) zoning district. Multifamily housing development is a permitted use within this district.

The overall site is moderately sloping, with slopes ranging from 3 to 55 percent. Site elevations range from approximately 72.5 feet above mean sea level (MSL) to 92.4 feet MSL. The site is highest in elevation along the northern property line where is slopes down to the south-western corner of the property. There are two depressions within the site that trap some stormwater and allow it to infiltrate.

2.2 Soils and Groundwater

The US Department of Agriculture (USDA) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/) was used to obtain surficial soil conditions for the study area, as follows:

Table 1: USDA Soil Data

Map Symbol & Description	Hydrologic Soil Group	Permeability (inches/hour)	Erosion Factor K	Depth to Water Table (feet)	Depth to Bedrock (feet)
Ud—Udorthents, smoothed	A	0.06 - 5.95	0.17	4.5	>6.0
Ur – Urban fill	D	NA	NA	NA	>6.0

Upon review of the soil data presented in Table 1, the project site does not contain soils with a soil slope phase of D with a map unit name that inclusive of slopes greater than 25%, and does not contain soils with a soil slope phase of E or F.

The project site is composed of HSG A soils and HSG D soils, as shown in the table below. For the purposes of this report, HSG X/D soils were modeled as HSG D soils to reflect the undrained condition.

Table 2: Project Site HSG Data

HSG A	HSG B	HSG C	HSG D
96%	0%	0%	4%

The Soil Conservation Service defines the hydrologic soil groups as follows:

- Type A Soils: Soils having a high infiltration rate and low runoff potential when thoroughly wet. These soils consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a moderate rate of water transmission.
- Type D Soils: Soils having a very low infiltration rate and high runoff potential when thoroughly wet. These soils consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very low rate of water transmission.

The soils map for the study area is presented in Appendix A, as Figure A-2.

2.3 Watershed Designation

The project site is not located in a restricted watershed identified in Appendix C of GP-0-20-001.

2.4 Receiving Water Bodies

The nearest natural classified water body into which runoff from the project site will discharge is the Hudson River. The Hudson River is classified by NYSDEC as a Class A water course, and is not included in the Section 303(d) list of impaired waters found in Appendix E of GP-0-20-001.

2.5 Aquifer Designation

The project site is not located over a US EPA designated Sole Source aquifer; nor is it located over a Primary or Principal aquifer listed in the NYSDEC Technical and Operational Guidance Series (TOGS) 2.1.3 (1980).

2.6 Wetlands

A search on the NYSDEC Environmental Resource Mapper on October 10, 2022, and a review of GIS data, determined that there are no known regulated wetlands located on or in the vicinity of the project site.

2.7 Flood Plains

According to the National Flood Insurance Program Flood Insurance Rate Map (FIRM), City of Poughkeepsie, New York, Community Panel Number 36027C0358E, the project site lies within Flood Zone X, areas determined to be outside 500-year floodplain.

2.8 Listed, Endangered, or Threatened Species

A search was performed on the NYSDEC Environmental Resource Mapper on October 10, 2022, and determined that the project site may contain threatened or endangered species, or critical habitat. An Environmental Resource Map has been provided in Appendix A, as Figure A-4.

2.9 Historic Places

A search on the New York State Cultural Resource Information System (CRIS) database, performed on October 10, 2022, revealed that the property is not located within an archeologically sensitive area, and is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places. Additionally, the construction activity does not include the construction of a new building within 20 feet of any structure more than 50 years old. A printout of the historic places screening map is presented in Appendix A, as Figure A-3.

2.10 Rainfall Data

Rainfall data utilized in the modeling and analysis was obtained from the Cornell University online Extreme Precipitation in New York & New England website (http://precip.eas.cornell.edu/). The standard SCS/NRCS rainfall distributions were applied to evaluate the pre- and post-development stormwater runoff characteristics. Rainfall data specific to the portion of Dutchess County under consideration, for various 24-hour storm events, is presented in the following Table:

Table 3: Rainfall Data

Storm Event Return Period	24-Hour Rainfall (inches)
1-year	2.61
10-year	4.67
100-year	8.20

2.11 Pre-development Watershed Conditions

The pre-development project site is covered predominantly by woods with a small amount of grass along the South Ave and Fox St frontage . Analysis of pre-development conditions considered existing drainage patterns, soil types, ground cover, and topography. The Pre-Development Watershed Delineation Map has been provided in Appendix A, as Figure A-5.

The results of the computer modeling used to analyze the overall watershed under pre-development conditions are presented in Appendix D. A summary of the pre-development watershed runoff rates at each analysis point is presented in Table 9.

Subcatchment 1 is a 0.65± acre watershed consisting of mostly woods with some grass. Runoff flows in a southeastern direction overland via sheet flow then shallow concentrated flow toward the depression 1P. Once the depression becomes filled, the stormwater will flow into Subcatchment ES2. This subcatchment is tributary to Analysis Point (AP) 1.

Subcatchment 2 is a 1.67± acre watershed consisting of mostly woods with some grass. Runoff flows in a southeastern direction overland via sheet flow then shallow concentrated flow. This subcatchment is tributary to Analysis Point (AP) 1.

Subcatchment 3 is a 0.57± acre watershed consisting of mostly woods with some grass. Runoff flows in a south-western direction overland via sheet flow then shallow concentrated flow toward the depression 2P. Once the depression becomes filled, the stormwater will flow into Subcatchment ES2. This subcatchment is tributary to Analysis Point (AP) 1.

2.12 Post-development Watershed Conditions

The post-development project site is covered predominantly by impervious surfaces with areas of grass spread throughout. The analysis of post-development conditions considered existing drainage patterns, soil types, ground cover to remain, planned site development, site grading, and stormwater management facilities proposed as part of site improvements. The Post-Development Watershed Delineation Map has been provided in Appendix A, as Figure A-6.

The results of the computer modeling used to analyze the overall watershed under post-development conditions are presented in Appendix E. A summary of the post-development watershed runoff rates at each analysis point is presented in Table 9.

There are numerous locations and methods for providing controls of off-site discharge of stormwater from the project site. Each has been designed to provide the above quantity controls by attenuating stormwater runoff and releasing runoff to off-site locations at a rate equal to or less than that which existed prior to development of the site. Each device is detailed on the accompanying plans.

2.13 Description of Analysis Points

The study area consists of an overall watershed that encompasses approximately 2.82 acres, including the 2.76 ± acre project site and 2.46 ± acre area of disturbance. The overall watershed was broken down into smaller watersheds, or subcatchments, to allow for analysis of runoff conditions at several locations throughout the study area. Each of these locations was defined as Analysis Point (AP) in order to compare the effects resulting from stormwater management facilities proposed as part of the project. Descriptions of each of the selected analysis points are provided below.

- Analysis Point 1: Off-site discharge to low spot located at the southwest corner of site. Runoff collects in an existing catch basin connected to a NYSDOT drainage system.

3.0 STORMWATER MANAGEMENT PLANNING

Chapter 3 of the Design Manual outlines a six-step planning process for site planning and selection of stormwater management practices that must be implemented for both new development and redevelopment projects. This process is intended to develop a design that maintains pre-construction hydrologic conditions through the application of environmentally sound development principles, as well as treatment and control of runoff discharges from the site. The following sections outline the step-by-step process and how it has been applied to this project.

The goals of this Stormwater Management Plan are to analyze the peak rate of runoff under pre- and post-development conditions, to maintain the pre-development rate of runoff in order to minimize

impacts to adjacent or downstream properties, and to minimize the impact to the quality of runoff exiting the site.

The Design Manual provides both water quality and water quantity objectives to be met by projects requiring a "Full SWPPP". These objectives will be met by applying stormwater control practices to limit peak runoff rates and improve the quality of runoff leaving the developed site.

3.1 STEP 1 – Site Planning

During the Site Planning process, the project site is evaluated for implementation of the green infrastructure planning measures identified in Table 3.1 of the Design Manual, in order to preserve natural resources and reduce impervious cover. Table A of Appendix C provides a description of each green infrastructure planning measure, along with a project specific evaluation.

3.2 STEP 2 – Calculate Water Quality Treatment Volume (WQv)

Stormwater runoff from impervious surfaces is recognized as a significant contributor of pollution that can adversely affect the quality of receiving water bodies. Therefore, treatment of stormwater runoff is important since most runoff related water quality contaminants are transported from land, particularly the impervious surfaces, during the initial stages of storm events.

3.2.1 NYSDEC Requirements for Water Quality Volume

The Design Manual requires that water quality treatment be provided for the initial flush of runoff from every storm. The NYSDEC refers to the amount of runoff to be treated as the "Water Quality Volume" (WQv). Section 4.2 of the Design Manual defines the Water Quality Volume as follows:

$$WQv = \frac{[(P)(R_v)(A)]}{12}$$

Where: P = 90% Rainfall Event Number
R_v = 0.05 + 0.009 (I)
I = Impervious Cover (Percent)
A = Contributing Area in Acres

This definition ensures that, all other things being equal, the Water Quality Volume will increase along with the impervious cover percentage.

3.2.2 Methodology for New Development

The Water Quality Volume equation has been applied to the drainage area tributary to the stormwater quality practice proposed for this project. The practice has been sized to accommodate the Water Quality Volume, as per the performance criteria presented in Chapter 5 and/or Chapter 6 of the Design Manual. Water quality volume calculations for each of the proposed practices are presented in Table B of Appendix C.

Table 4: Required WQv Summary

Required WQv	
7,392 CF	0.170 AF

3.2.3 Methodology

The Water Quality Volume equation has been applied to the drainage area tributary to each stormwater quality practice proposed for this project. The practice has been sized to accommodate the Water Quality Volume, as per the performance criteria presented in Chapter 6 of the Design Manual. Water quality volume calculations for each of the proposed practices are presented in Table B of Appendix C.

3.3 STEP 3 – Apply RR Techniques and Standard SMPs with RRv Capacity to Reduce Total WQv

Land use change and development in the watershed increases the volume of runoff. As such, reductions in the amount of runoff from new development, accomplished through the implementation of a stormwater management plan for the site, will play an important role in the success or failure of the watershed-wide stormwater management plan. Runoff reduction techniques can be applied to manage, reduce, and treat stormwater, while maintaining and restoring natural hydrology through infiltration, evapo-transpiration, and the capture and reuse of stormwater. Volume reduction techniques by themselves typically are not sufficient to provide adequate attenuation of stormwater runoff, but they can decrease the size of the peak runoff rate reduction facilities.

3.3.1 NYSDEC Requirements for New Development

The Design Manual states that runoff reduction shall be achieved through infiltration, groundwater recharge, reuse, recycle, and/or evaporation/evapotranspiration of 100-percent of the post-development water quality volume to replicate pre-development hydrology. Runoff control techniques provide treatment in a distributed manner before runoff reaches the collection system, by maintaining pre-construction infiltration, peak runoff flow, discharge volume, as well as minimizing concentrated flow. This can be accomplished by applying a combination of Runoff Reduction Techniques, standard Stormwater Management Practices (SMPs) with RRv capacity, and good operation and maintenance.

3.3.2 Methodology

In order to reduce the required WQv and meet the RRv criteria, a site specific evaluation must be performed to determine the most practical means of reducing runoff volume by application of a combination of RR techniques and standard SMPs with RRv capacity.

3.3.3 Application of Standard Stormwater Management Practices (SMPs) with RRv Capacity

The following Table demonstrates a summary of the standard SMP(s) with RRv capacity that have been incorporated into the stormwater management plan for this project. The standard SMP(s) with RRv capacity have been designed in accordance with Chapter 6 of the Design Manual. Refer to the contract drawings for practice dimensions, material specifications, and installation details. Practice specific calculations are presented in Appendix C.

Table 5: Summary of Standard SMPs with RRv Capacity being Applied

Standard SMP with RRv Capacity	Design Variant	Pretreatment Volume Required (% of WQv)	Pretreatment Volume Provided (CF)	RRv Capacity	WQv Required (CF)	WQv Reduced /RRv Provided (CF)	WQv Treated[1] (CF)	Total WQv Provided[2] (CF)
Underground Infiltration System	I-4	25%	1,566	100%	6,299	6,299	0	6,299
Bioretention (with underdrains)	F-5	25%	803	40%	1,280	907	373	2,187
Standard SMP with RRv Capacity Totals					**7,579**	**7,206**	**373**	**8,486**

Footnotes:
[1]*WQv Treated = WQV Required - RRv Provided*
[2]*Total WQv Provided = WQV Treated + RRv Provided*

3.3.4 RRv Performance Summary

A summary of the RRv provided is presented in the following table:

Table 6: RRv Summary

WQv Required (CF)	RRv Provided WQv Reduced (CF)	% RRv Provided/ WQv Reduced
7,392	7,206	97%

As indicated in the above table, the RRv provided is not greater than or equal to the RRv required for the project site. A good faith effort has been made to reduce runoff to the greatest extent practical. However, the project site has soils with an infiltration rate less than 0.5 in/hr, which prevents reduction of the total WQv. As such, Table C of Appendix C provides a project specific evaluation for each RR technique and standard SMP with RRv capacity, demonstrating why these practices are infeasible.

3.4 STEP 4 – Calculate the Minimum RRv Required

Projects that cannot achieve 100% of the runoff reduction requirement due to site limitations, shall provide a minimum runoff reduction volume as calculated by the following equation:

$$RRv_{min} = \frac{[(P)(R_V*)(Aic)(S)]}{12}$$

Where:

RRv_{min} = Runoff Reduction Volume (in acre-feet)
P = 90% Rainfall Event Number
Aic = Total area of new impervious cover (acres)
Rv* = 0.05+0.009(I), where I is 100% impervious
S = Hydrologic Soil Group (HSG) Specific Reduction Factor where:
HSG A = 0.55 HSG C = 0.30

HSG B = 0.40 HSG D = 0.20

Based upon the soil survey data, the site consists of soils having a hydrologic soil type of A and D. As such, a specific reduction factor of 0.54 has been applied. Calculation of the required minimum RRv is presented in Table D of Appendix C.

Table 7: Minimum RRv Summary

Minimum RRv Required (CF)	RRv Provided/ WQv Reduced (CF)	% of Minimum RRv Provided
3,868	7,206	186%

As indicated in the above table, the RRv provided is greater than the minimum RRv required for the project site. Therefore, the runoff reduction volume criteria has been met for the project and the design can proceed to Step 5.

3.5 STEP 5 – Apply Standard SMPs to Address Remaining Water Quality Volume

As previously discussed, 100% of the required WQv is being provided and reduced through RRv practice. As such, the water quality and runoff reduction volume criteria have been met and no other standard SMPs are required.

3.6 STEP 6 - Apply Volume and Peak Rate Control

This report presents the pre-development and post-development features and conditions associated with the rate of surface water runoff within the study area. For both cases, the drainage patterns, drainage structures, soil types, and ground cover types are considered in this study.

3.6.1 NYSDEC Requirements for New Development

Chapter 4 of the Design Manual requires that projects meet three separate stormwater quantity criteria:

1. The Channel Protection (CPv) requirement is designed to protect stream channels from erosion. This is accomplished by providing 24 hours of extended detention for the 1-year, 24-hour storm event. The Manual defines the CPv detention time as the center of mass detention time through each stormwater management practice.

2. The Overbank Flood Control (Qp) requirement is designed to prevent an increase in the frequency and magnitude of flow events that exceed the bank-full capacity of a channel, and therefore must spill over into the floodplain. This is accomplished by providing detention storage to ensure that, at each analysis point, the post-development 10-year 24-hour peak discharge rate does not exceed the corresponding pre-development rate.

3. The Extreme Flood Control (Qf) requirement is designed to prevent the increased risk of flood damage from large storm events, to maintain the boundaries of the pre-development 100-year floodplain, and to protect the physical integrity of stormwater management practices. This is accomplished by providing detention storage to ensure that, at each analysis point, the post-development 100-year 24-hour peak discharge rate does not exceed the corresponding pre-development rate.

3.6.2 Methodology

In order to demonstrate that the NYSDEC detention requirements are being met, the Design Manual requires that a hydrologic and hydraulic analysis of the pre- and post-development conditions be performed using the Natural Resources Conservation Service Technical Release 20 (TR-20) and Technical Release 55 (TR-55) methodologies. HydroCAD, developed by HydroCAD Software Solutions LLC of Tamworth, New Hampshire, is a Computer-Aided-Design (CAD) program for analyzing the hydrologic and hydraulic characteristics of a given watershed and associated stormwater management facilities. HydroCAD uses the TR-20 algorithms and TR-55 methods to create and route runoff hydrographs.

HydroCAD has the capability of computing hydrographs (which represent discharge rates characteristic of specified watershed conditions, precipitation, and geologic factors) combining hydrographs and routing flows though pipes, streams and ponds. HydroCAD can also calculate the center of mass detention time for various hydraulic features. Documentation for HydroCAD can be found on their website: http://www.hydrocad.net/.

For this analysis, the watershed and drainage system was broken down into a network consisting of three types of components as described below:

1. Subcatchment: A relatively homogeneous area of land, which produces a volume and rate of runoff unique to that area.
2. Reach: Uniform streams, channels, or pipes that convey stormwater from one point to another.
3. Pond: Natural or man-made impoundment, which temporarily stores stormwater runoff and empties in a manner determined by its geometry and the hydraulic structure located at its outlets.

Subcatchments, reaches, and ponds are represented by hexagons, squares, and triangles, respectively, on the watershed routing diagrams provided with the computations included in Appendix D and Appendix E.

The analysis of hydrologic and hydraulic conditions and proposed stormwater management facilities, servicing the study area, was performed by dividing the tributary watershed into relatively homogeneous subcatchments. The separation of the watershed into subcatchments was dictated by watershed conditions, methods of collection, conveyance, and points of discharge. Watershed characteristics for each subcatchment were then assessed from United States Geological Service (USGS) 7.5-minute topographic maps, aerial photographs, a topographical survey, soil surveys, site investigations, and land use maps.

Proposed stormwater management practices were designed and evaluated in accordance with the Design Manual and local regulatory requirements. The hydrologic and hydraulic analysis considered the SCS Type III 24-hour storm events identified in the following Table.

Table 8: Design Events

Facility	24-hour Storm Event
Storm Sewer	10-year
Stormwater Management Practice(s)	1-year
	10-year
	100-year
Flood Conditions	100-year

3.6.3 Performance Summary

The CPv requirement does not apply as the reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems.

A comparison of the pre- and post-development watershed conditions was performed for the analysis point and storm events evaluated herein. For the analysis point and design storms, this comparison demonstrates that the peak rate of runoff will not be increased. Therefore, the project will not have a significant adverse impact on the adjacent or downstream properties or receiving water courses.

The results of the computer modeling used to analyze the pre- and post-development watersheds are presented in Appendix D and Appendix E, respectively. The following Table summarizes the results of this analysis.

Table 9: Summary of Pre- and Post-Development Peak Discharge Rates

Pre- vs. Post-Development Discharge Rate (cfs)						
Analysis Point (AP)	1-year 24-hour storm event		10-year 24-hour storm event		100-year 24-hour storm event	
	Pre	Post	Pre	Post	Pre	Post
1	0.09	0.02	1.52	0.38	8.04	2.13

4.0 CONSTRUCTION SEQUENCE

This project encompasses less than five acres of land and disturbance of additional off-site properties to facilitate construction is not anticipated. Therefore, written approval from the City of Poughkeepsie allowing the disturbance of more than five acres of land at any one time is not required. If the Contractor's construction sequence requires the disturbance of more than five acres at any one time, written approval must be obtained from the City of Poughkeepsie prior to disturbing more than five acres at once.

The "Erosion and Sediment Control Plan" in the accompanying drawings identifies the major construction activities that are the subject of this SWPPP. The order (or sequence) in which the major activities are expected to begin is presented on the accompanying drawings, though each activity will not necessarily be completed before the next begins. In addition, these activities could occur in a different order if necessary to maintain adequate erosion and sediment control. If this is the case, the contractor shall notify the Owner's/Operator's Engineer overseeing the implementation of the SWPPP.

The Contractor will be responsible for implementing the erosion and sediment control measures identified on the plans. The Contractor may designate these tasks to certain subcontractors as they see fit, but the ultimate responsibility for implementing these controls and ensuring their proper function remains with the Contractor.

Refer to the accompanying plans for details and specifications regarding the construction sequencing schedule.

5.0 CONSTRUCTION-PHASE POLLUTION CONTROL

The SWPPP and accompanying plans identify the temporary and permanent erosion and sediment control measures that have been incorporated into the design of this project. These measures will be implemented during construction, to minimize soil erosion and control sediment transport off-site, and after construction, to control the quality and quantity of stormwater runoff from the developed site.

Erosion control measures, designed to minimize soil loss, and sediment control measures, intended to retain eroded soil and prevent it from reaching water bodies or adjoining properties, have been developed in accordance with the following documents:

- NYSDEC SPDES General Permit for Stormwater Discharges From Construction Activity, Permit No. GP-0-20-001 (effective January 29, 2020 through January 28, 2025)
- New York State Standards and Specifications for Erosion and Sediment Control, NYSDEC (November 2016)
- City of Poughkeepsie Erosion and Sediment Control Ordinance

The SWPPP and accompanying plans outline the construction scheduling for implementing the erosion and sediment control measures. These documents include limitations on the duration of soil exposure, criteria and specifications for placement and installation of the erosion and sediment control measures, a maintenance schedule, and specifications for the implementation of erosion and sediment control practices and procedures.

Temporary and permanent erosion and sediment control measures that shall be applied during construction generally include:

1. Minimizing soil erosion and sedimentation by stabilization of disturbed areas and by removing sediment from construction site discharges.
2. Preservation of existing vegetation to the greatest extent practical. Following the completion of construction activities in any portion of the site, permanent vegetation shall be established on all exposed soils.
3. Site preparation activities to minimize the area and duration of soil disruption.
4. Establishment of permanent traffic corridors to ensure that “routes of convenience” are avoided.

5.1 Temporary Erosion and Sediment Control Measures

The temporary erosion and sediment control measures described in the following sections are included as part of the construction documents.

5.1.1 Stabilized Construction Access

Prior to construction, stabilized construction access(es) will be installed, per accompanying plans, to reduce the tracking of sediment onto public roadways.

Construction traffic must enter and exit the site at the stabilized construction access(es). The intent is to trap dust and mud that would otherwise be carried off-site by construction traffic.

The access(es) shall be maintained in a condition, which will control tracking of sediment onto public rights-of-way or streets. When necessary, additional aggregate will be placed atop the filter fabric to assure the minimum thickness is maintained. All sediment and/or soil spilled, dropped, or washed onto public rights-of-way must be removed immediately. Periodic inspection and needed maintenance shall be provided after each substantial rainfall event.

5.1.2 Dust Control

Water trucks shall be used as needed during construction to reduce dust generated on-site. Dust control must be provided by the Contractor(s) to a degree that is acceptable to the Owner, and in compliance with the applicable local and state dust control requirements.

5.1.3 Temporary Soil Stockpile

Materials, such as topsoil, will be temporarily stockpiled (if necessary) on the site during the construction process. Stockpiles shall be located in an area away from storm drainage, water bodies and/or courses, and will be properly protected from erosion by a surrounding silt fence barrier.

5.1.4 Silt Fencing

Prior to the initiation of and during construction activities, a geotextile filter fabric (or silt fence) will be established downgradient of all disturbed areas. These barriers may extend into non-impact areas to provide adequate protection of adjacent lands.

Clearing and grubbing will be performed only as necessary for the installation of the sediment control barrier. To facilitate effectiveness of the silt fencing, daily inspections and inspections immediately after significant storm events will be performed by the Contractor(s). Maintenance of the fence will be performed as needed.

5.1.5 Temporary Seeding

For areas undergoing clearing, grading, and disturbance as part of construction activities, where work has temporarily ceased, temporary soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the soil disturbance activity has temporarily ceased.

5.1.6 Stone and Block Drop Inlet Protection

Concrete blocks surrounded by wire mesh and crushed stone will be placed around both existing catch basins, and proposed catch basins once they have been installed, to prevent sediment from entering the catch basins and storm sewer system. During construction, crushed stone shall be replaced as necessary to ensure proper function.

5.1.1 Manufactured Insert Inlet Protection

Install insert inlet protection beneath the grate of all catch basins, to prevent sediment from entering the catch basins and storm sewer system. Remove sediment accumulation and repair or replace insert as necessary to ensure proper function.

5.1.2 Filter Fabric Drop Inlet Protection

Install filter fabric or silt fence with wooden stakes at the perimeter of existing or proposed catch basins located in lawn areas, to prevent sediment from entering the catch basins and storm sewer system. Remove sediment accumulation and repair or replace fabric as necessary to ensure proper function.

5.1.3 Erosion Control Blanket

Erosion control blankets shall be installed in accordance with manufacturer's requirements on all slopes exceeding 3:1. Erosion control blankets provide temporary erosion protection, rapid vegetative establishment, and long-term erosion resistance to shear stresses generated by high runoff flow velocities associated with steep slopes.

5.1.4 Stone Check Dams

Stone check dams will be installed within drainage ditches to reduce the velocity of stormwater runoff, promote settling of sediment, and reduce sediment transport off-site.

Sediment accumulated behind the stone check dam will be removed as needed to maintain flow through the stone check dam and prevent large flows from carrying sediment over or around the dam. Stones shall be replaced as needed to maintain the design cross section of the structures.

5.1.5 Temporary Sediment Trap

Temporary sediment traps shall be constructed to intercept sediment-laden runoff, reduce the amount of sediment leaving the disturbed areas, and protect drainage ways, properties, and rights-of-way.

Accumulated sediment shall be removed from the trap when it reaches no greater than 50 percent of the design capacity. Sediment shall not be placed downstream from the embankment, adjacent to a stream, or floodplain.

Temporary sediment traps depicted on the accompanying plans have been designed to provide 3,600 CF of storage per acre of tributary watershed.

5.1.6 Temporary Diversion Swales

Temporary diversion swales shall be used to divert off-site runoff around the construction site and divert runoff from stabilized areas around disturbed areas. Temporary diversion swales can be used to direct runoff from disturbed areas into sediment traps.

5.1.7 Dewatering Operations

Dewatering will be used to intercept sediment-laden stormwater or pumped groundwater and allow it to settle out of the pumped discharge prior to being discharged from the site. Water from dewatering operations shall be treated to eliminate the discharge of sediment and other pollutants. Water resulting from dewatering operations shall be directed to temporary sediment traps or dewatering devices. Temporary sediment traps and dewatering bags will be provided, installed, and maintained at downgradient locations to control sediment deposits to downstream surfaces.

5.1.8 Fiber Roll

Prior to the initiation of and during construction activities, fiber rolls (12" minimum diameter) will be established downgradient of all disturbed areas to reduce sheet flow on slopes. These rolls may extend into non-impact areas to provide adequate protection of adjacent lands. Spacing will conform to NYSDEC specification for straw bale dike.

Clearing and grubbing will be performed only as necessary for the installation of the fiber rolls. To facilitate effectiveness, daily inspections and inspections immediately after significant storm events will be performed by the Contractor(s) and maintenance will be performed as needed.

5.1.9 Compost Filter Sock

Prior to the initiation of and during construction activities, a compost filter sock (or silt sock) will be established downgradient of all disturbed areas. These filters may extend into non-impact areas to provide adequate protection of adjacent lands. The spacing of the compost filter sock, which will depend on the ground slope and diameter of the sock, shall be based upon New York State or EPA guidance.

Clearing and grubbing will be performed only as necessary for the installation of the sediment control filter; and unlike sediment control barriers, trenching is not required. The ends of the filter sock should be directed upslope, to prevent stormwater from running around the end of the sock. The preferred anchoring method is to drive stakes through the center of the sock at regular intervals; alternatively, stakes can be placed on the downstream side of the sock. To facilitate effectiveness of the compost filter sock, daily inspections and inspections immediately after significant storm events will be performed by the Contractor(s) to ensure that they are intact and the area behind the sock is not filled with sediment. Maintenance of the sock will be performed as needed.

5.2 Permanent Erosion and Sediment Control Measures

The permanent erosion and sediment control measures described in the following sections are included as part of the construction documents.

5.2.1 Establishment of Permanent Vegetation

Disturbed areas that will be vegetated must be seeded in accordance with the contract documents. The type of seed, mulch, and maintenance measures as described in the contract documents shall also be followed.

Permanent soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the soil disturbance activity has permanently ceased.

Final site stabilization is achieved when all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of 80 percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

5.2.2 Rock Outlet Protection

Rock outlet protection shall be installed at the locations as indicated and detailed on the accompanying plans. The installation of rock outlet protection will reduce the velocity and energy of water, such that the flow will not erode downstream surfaces.

5.2.3 Permanent Turf Reinforcement

Permanent turf reinforcement mats (TRMs) provide long-term erosion protection and vegetation establishment assistance while permanently reinforcing vegetation. TRMs shall be installed on slopes/channels where specified. TRM's provide two key advantages. First, their unique fiber shape and 3-D pattern create a thick matrix of voids that trap seed, soil, and water in place for quicker, thicker vegetation growth. Secondly, they provide additional reinforcement that doubles the vegetation's natural erosion protection abilities by remaining a permanent part of the application and anchoring mature plants to the soil for superior, long-term erosion resistance.

5.3 Other Pollutant Controls

Part I.B.1.e of GP-0-20-001 prohibits discharges from construction material wastewater, pollutants used in vehicle and equipment operation and maintenance, vehicle and equipment washing and toxic or hazardous substances.

The following table identifies materials and/or chemicals commonly used and/or stored on construction sites and should be addressed in the site-specific spill prevention and response plan:

5.4 Construction Housekeeping Practices

During the construction phase, the Contractor(s) will implement the following measures:

5.4.1 Sediment Sweeping/Vacuuming

Any sediment that is tracked by construction vehicles or erosion onto adjacent public or private impervious surfaces must be swept or vacuumed, utilizing self-propelled and/or walk-behind equipment, and removed on a daily basis. Kick brooms and sweeper attachments are not an acceptable means of sweeping. Sweeping or vacuuming should not take place while tracked sediment is wet. If tracked sediment is compacted, the sediment must be scraped loose prior to sweeping or vacuuming.

5.4.2 Material Stockpiles

Material resulting from clearing and grubbing operations that will be stockpiled on-site, must be adequately protected with downgradient erosion and sediment controls.

5.4.3 Equipment Cleaning and Maintenance

The Contractor(s) will designate areas for equipment cleaning, maintenance, and repair. The Contractor(s) and subcontractor(s) will utilize those areas. The areas will be protected by a temporary perimeter berm.

5.4.4 Detergents

The use of detergents for large-scale washing is prohibited (i.e., vehicles, buildings, pavement surfaces, etc.)

5.4.5 Spill Prevention and Response

A Spill Prevention and Response Plan shall be developed, for the pollutants identified in Section 5.3, for the site by the Contractor(s) that addresses the following:

1. Reducing chance of spills
2. Stopping the source of spills

3. Containing and cleaning up spills
4. Disposing of materials contaminated by spills
5. Training personnel responsible for spill prevention/response
6. Material handling procedures
7. Material storage requirements

The plan shall detail the steps required in the event of an accidental spill and shall identify contact names and phone numbers of people and agencies that must be notified.

The plan shall include Safety Data Sheets (SDS) for all materials to be stored on-site. All workers on-site will be required to be trained on safe handling and spill prevention procedures for all materials used during construction. Regular tailgate safety meetings shall be held and all workers that are expected on the site during the week shall be required to attend.

5.4.6 Concrete Washout Areas

A temporary concrete washout area shall be provided for every project where concrete will be poured or otherwise formed on-site and shall consist of an excavated or above-ground lined construction pit where concrete trucks or equipment can be washed out after their loads have been discharged. Waste generated from concrete wash water that shall not be allowed to flow into drainage ways, inlets, receiving waters, highway right-of-way, or any location other than the designated concrete washout area(s). Proper signage shall be placed adjacent to the facility to designate the "Concrete Washout Area". Locate the facility a minimum of 100-feet from drainage swales, storm drain inlets, wetlands, streams, and other surface waters. Prevent surface water from entering the washout area.

The hardened residue from the concrete wash areas will be disposed of in the same manner as other non-hazardous construction waste materials. Maintenance of the washout area shall include removal of hardened material when 75% of the storage capacity is filled, and a minimum freeboard of 12 inches shall be maintained. The Contractor will be responsible for seeing that these procedures are followed. The project may require the use of multiple concrete washout areas based on the frequency of concrete pours.

5.4.7 Material Storage

Construction materials shall be stored in a dedicated staging area. The staging area shall be located in an area that prevents negative impacts of construction materials on stormwater quality.

Chemicals, paints, solvents, fertilizers, and other toxic material must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated, and disposed of at an approved solid waste or chemical disposal facility.

6.0 INSPECTIONS, MAINTENANCE, AND REPORTING

6.1 Inspection and Maintenance Requirements

6.1.1 Pre-Construction Inspection and Certification

Prior to the commencement of construction, the Qualified Inspector/Qualified Professional shall conduct an assessment of the site and certify that the appropriate erosion and sediment control measures have

been adequately installed and implemented. The Contractor shall contact the Qualified Inspector/Qualified Professional once the erosion and sediment control measures have been installed.

6.1.2 Construction Phase Inspections and Maintenance

A Qualified Inspector/Qualified Professional, as defined in Appendix A of the General Permit GP-0-20-001, shall conduct regular site inspections between the time this SWPPP is implemented and final site stabilization. Site inspections shall occur at an interval of at least once every seven (7) calendar days.

The purpose of site inspections is to assess performance of pollutant controls. Based on these inspections, the Qualified Inspector/Qualified Professional will decide whether it is necessary to modify this SWPPP, add or relocate sediment barriers, or whatever else may be needed in order to prevent pollutants from leaving the site via stormwater runoff. The general contractor has the duty to cause pollutant control measures to be repaired, modified, maintained, supplemented, or whatever else is necessary in order to achieve effective pollutant control.

Examples of particular items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. During each inspection the inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances.

1. Locations where vehicles enter and exit the site must be inspected for evidence of off-site sediment tracking. A stabilized construction access will be constructed where vehicles enter and exit. This access will be maintained or supplemented as necessary to prevent sediment from leaving the site on vehicles.
2. Sediment barriers must be inspected and, if necessary, they must be enlarged or cleaned in order to provide additional capacity. All material from behind sediment barriers will be stockpiled on the up slope side. Additional sediment barriers must be constructed as needed.
3. Inspections will evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system. If necessary, the materials must be covered or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas.
4. Grassed areas will be inspected to confirm that a healthy stand of grass is maintained. The site has achieved final stabilization once all areas are covered with building foundation or pavement, or have a stand of grass with at least 80 percent density. The density of 80 percent or greater must be maintained to be considered as stabilized. Areas must be watered, fertilized, and reseeded as needed to achieve this goal.
5. All discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.

The inspection reports must be completed entirely and additional remarks should be included if needed to fully describe a situation. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the site was in compliance with the SWPPP at the time of inspection and specifically identify all incidents of non-compliance.

Within one (1) business day of the completion of an inspection, the *Qualified Inspector/Qualified Professional* shall notify the Owner/Operator and appropriate contractor or subcontractor of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the

corrective actions within one (1) business day of the notification and shall complete the corrective actions in a reasonable time frame.

In addition to the inspections performed by the *Qualified Inspector/Qualified Professional*, the Contractor shall perform routine inspections that include a visual check of all erosion and sediment control measures. All inspections and maintenance shall be performed in accordance with the inspection and maintenance schedule provided on the accompanying plans. Sediment removed from erosion and sediment control measures will be exported from the site, stockpiled for later use, or used immediately for general non-structural fill.

It is the responsibility of the general contractor to assure the adequacy of site pollutant discharge controls. Actual physical site conditions or contractor practices could make it necessary to install more structural controls than are shown on the accompanying plans. (For example, localized concentrations of runoff could make it necessary to install additional sediment barriers, sediment traps, etc.) Assessing the need for additional controls and implementing them or adjusting existing controls will be a continuing aspect of this SWPPP until the site achieves final stabilization.

6.1.3 Temporary Suspension of Construction Activities

For construction sites where soil disturbance activities have been temporarily suspended (e.g. Winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the frequency of Qualified Inspector/Qualified Professional inspections can be reduced to once every 30 calendar days. Prior to reducing the frequency of inspections, the Owner/Operator shall notify the NYSDEC Region 3 stormwater contact person and the City of Poughkeepsie in writing.

6.1.4 Partial Project Completion

For construction sites where soil disturbance activities have been shut down with partial project completion, all areas disturbed as of the project shutdown date have achieved final stabilization, and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational, the inspections by the Qualified Inspector/Qualified Professional can stop. Prior to the shutdown, the Owner/Operator shall notify the NYSDEC Region 3 stormwater contact person and the City of Poughkeepsie in writing.

If soil disturbance activities have not resumed within two years from the date of shutdown, a Notice of Termination (NOT) shall be properly completed and submitted to the NYSDEC.

6.1.5 Post-Construction Inspections and Maintenance

Inspections and maintenance of final stabilization measures and post-construction stormwater management practices shall be performed in accordance with Appendix G, once all disturbed areas are stabilized and all stormwater management systems are in place and operable.

6.2 Reporting Requirements

6.2.1 Inspection Reports

Pursuant to Part IV.C of GP-0-20-001, inspection reports shall be prepared for the duration of construction, as outlined herein, and shall be signed by the *Qualified Inspector* or *Qualified Professional*. A sample inspection form is provided in Appendix F.

At a minimum, each inspection report shall record the following information:

1. Date and time of inspection.
2. Name and title of person(s) performing inspection.
3. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection.
4. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow.
5. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody.
6. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance.
7. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced.
8. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection.
9. Indication of the current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards.
10. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s).
11. Identification and status of all corrective actions that were required by previous inspection.
12. Color photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *Qualified Inspector/Qualified Professional* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *Qualified Inspector/Qualified Professional* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *Qualified Inspector/Qualified Professional* shall attach the paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

6.2.2 Site Log Book

Pursuant to Part II.D.2 of GP-0-20-001, the Owner/Operator shall retain a copy of the General Permit, NOI, NOI Acknowledgment Letter, MS4 SWPPP Acceptance Form (if applicable), inspection reports, contractor and subcontractor certification forms, and all documentation necessary to demonstrate eligibility under the permit, at the construction site from commencement of construction activity until the date that all areas of disturbance have achieved final stabilization and the Notice of Termination has been submitted to the NYSDEC.

The Site Log Book shall be maintained on-site in a secure location (i.e. job trailer, on-site construction office, or mailbox with lock) and must be accessible during normal business hours to an individual performing a compliance inspection.

6.2.3 Post Construction Records and Archiving

Following construction, the Owner/Operator shall retain copies of the SWPPP, the complete construction Site Log Book, and records of all data used to complete the NOI to be covered by this permit, for a period of at least five years from the date that the site is finally stabilized. This period may be extended by the NYSDEC, at its sole discretion, at any time upon written notification.

Records shall be maintained of all post construction inspections and maintenance work performed in accordance with the requirements outlined in Appendix G.

7.0 SWPPP IMPLEMENTATION RESPONSIBILITIES

A summary of the responsibilities and obligations of all parties involved with compliance with the NYSDEC SPDES General Permit GP-0-20-00 conditions is outlined in the subsequent sections. For a complete listing of the definitions, responsibilities, and obligations, refer to the SPDES General Permit GP-0-20-001 presented in Appendix J.

7.1 Owner's/Operator's Responsibilities

1. Ensure that control measures are selected, designed, installed, implemented and maintained to minimize the discharge of pollutants and prevent a violation of the water quality standards, meeting the non-numeric effluent limitations in Part I.B.1.(a)-(f) of the SPDES General Permit and in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

2. Ensure that practices are selected, designed, installed, and maintained to meet the performance criteria in the Design Manual. Practices must be designed to meet the applicable sizing criteria in Part I.C.2.a., b., c. or d. of GP-0-20-001.

3. Retain the services of a "Qualified Inspector" or "Qualified Professional" as defined under Section 2.1, to provide the services outlined in Section 2.5 "Qualified Inspector's/Qualified Professional's Responsibilities."

4. Retain the services of a "Qualified Professional," as defined under Section 2.1, to provide the services outlined in Section 2.3 "Owner's/Operator's Engineers Responsibilities."

5. Have an authorized corporate officer sign the Owner/Operator Certification Form to accompany the eNOI. A copy of the completed NOI is included in Appendix B.

6. Submit the electronic version of the NOI (eNOI) along with the MS4 SWPPP acceptance form using the NYSDEC's website (http://www.dec.ny.gov/chemical/43133.html).

7. Pay the required initial and annual fees upon receipt of invoices from NYSDEC. These invoices are generally issued in the fall of each year. The initial fee is calculated as $110.00 per acre disturbed plus $675.00 per acre of net increase in impervious cover, and the annual fee is $110.00.

8. Prior to the commencement of construction activity, identify the contractor(s) and subcontractor(s) that will be responsible for implementing the erosion and sediment control measures and stormwater management practices described in this SWPPP. Have each of these

contractors and subcontractors identify at least one "Trained Contractor", as defined under Section 2.1 that will be responsible for the implementation of the SWPPP. Ensure that the Contractor has at least one "Trained Contractor" on site on a daily basis when soil disturbance activities are being performed.

9. Schedule a pre-construction meeting which shall include the City of Poughkeepsie representative, Owner's/Operator's Engineer, Qualified Inspector, Contractor, and their sub-contractors to discuss responsibilities as they relate to the implementation of this SWPPP.

10. Retain the services of an independent certified materials testing and inspection firm operating under the direction of a licensed Professional Engineer to perform regular tests, inspections, and certifications of the construction materials used in the construction of all post-construction stormwater management practices.

11. Retain the services of a NYS licensed land surveyor to perform an as-built topographic survey of the completed post-construction stormwater management facilities.

12. Require the Contractor to fully implement the SWPPP prepared for the site by the Owner/Operator's Engineer to ensure that the provisions of the SWPPP are implemented from the commencement of construction activity until all areas of disturbance have achieved final stabilization and the Notice of Termination (NOT) has been submitted to the NYSDEC.

13. Forward a copy of the NOI Acknowledgement Letter received from the regulatory agency to the Owner's/Operator's Engineer for project records, and to the Contractor for display at the construction site.

14. Maintain a copy of the General Permit (GP-0-20-001), NOI, NOI Acknowledgement Letter, SWPPP, MS4 SWPPP Acceptance Form, inspection reports, Spill Prevention, Countermeasures, Cleanup ("SPCC") Plan, and all documentation in accordance with Part I.F.8.a.-d of GP-0-20-001 necessary to demonstrate eligibility with the permit at the construction site, until all disturbed areas have achieved final stabilization and the NOT has been submitted to the NYSDEC. Place documents in a secure location that must be accessible during normal business hours to an individual performing a compliance inspection.

15. Prior to submitting a Notice of Termination, ensure for post-construction stormwater management practice(s) that are privately owned, the Owner/Operator has a deed restriction in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

16. Submit a Notice of Termination (NOT) form (see Appendix B) within 48 hours of receipt of the Owner's/Operator's Engineer's certification of final site stabilization to the following:

    NOTICE OF TERMINATION
    NYS DEC, Bureau of Water Permits
    625 Broadway, 4th Floor
    Albany, New York 12233-3505

    City of Poughkeepsie
    62 Civic Center Plaza
    Poughkeepsie, NY 12601

17. Request and receive all SWPPP records from the Owner's/Operator's Engineer and archive those records for a minimum of five (5) years after the NOT is filed.

18. Implement the Post-Construction Inspections and Maintenance procedures outlined in Appendix G.

19. The NOI, SWPPP, and inspection reports required by GP-0-20-001 are public documents that the Owner/Operator must make available for review and copying by any person within five (5) business days of the Owner/Operator receiving a written request by any such person to review the NOI, SWPPP, or inspection reports. Copying of documents will be done at the requester's expense.

20. The Owner/Operator must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the Owner/Operator shall amend the SWPPP, including construction drawings:
    a) Whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater discharges from the project site;
    b) Whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the discharge of pollutants; and
    c) To address issues or deficiencies identified during an inspection by the "Qualified Inspector," the Department, or other Regulatory Authority.
    d) To document the final construction conditions.
21. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original owner or operator must notify the new owner or operator, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For construction activities subject to the requirements of a regulated, traditional land use control MS4, the original owner or operator must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.
    a) Once the new owner or operator obtains permit coverage, the original owner or operator shall then submit a completed NOT with the name and permit identification number of the new owner or operator to the Department at the address in Part II.B.1. of the permit. If the original owner or operator maintains ownership of a portion of the construction activity and will disturb soil, they must maintain their coverage under the permit.
    b) Permit coverage for the new owner or operator will be effective as of the date the Department receives a complete NOI, provided the original owner or operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new owner or operator.

7.2 Owner's/Operator's Engineer's Responsibilities

1. Prepare the SWPPP using good engineering practices, best management practices, and in compliance with all federal, state, and local regulatory requirements.

2. Prepare the electronic Notice of Intent (eNOI) (see Appendix B) and sign the "SWPPP Preparer Certification Form." Forward the Owner/Operator Certification Form to the Owner/Operator for signature.

3. Provide copies of the SWPPP to the City of Poughkeepsie once all signatures and attachments are complete.

4. Enter Contractor's information in Section 2.5 "SWPPP Participants" once a Contractor is selected by the Owner/Operator.

5. Participate in a pre-construction meeting which shall include the City of Poughkeepsie representative, Owner/Operator, Qualified Inspector, Contractor, and all subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.

6. Update the SWPPP each time there is a significant modification to the pollution prevention measures or a change of the principal Contractor working on the project who may disturb site soil.

7.3 Contractor's Responsibilities

1. Sign the SWPPP Contractor's Certification Form contained within Appendix B and forward to the Owner's/Operator's Engineer for inclusion in the Site Log Book.

2. Identify at least one Trained Contractor that will be responsible for implementation of this SWPPP. Ensure that at least one Trained Contractor is on site on a daily basis when soil disturbance activities are being performed. The Trained Contractor shall inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating conditions at all times. If deficiencies are identified, the contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

3. Provide the names and addresses of all subcontractors working on the project site. Require all subcontractors who will be involved with construction activities that will result in soil disturbance to identify at least one Trained Contractor that will be on site on a daily basis when soil disturbance activities are being performed; and to sign a copy of the Subcontractor's Certification Form contained within Appendix B, then forward to the Owner's/Operator's Engineer for inclusion into the Site Log Book. This information must be retained as part of the Site Log Book.

4. Maintain a Spill Prevention and Response Plan in accordance with requirements outlined in Section 5 of this SWPPP. This plan shall be provided to the Owner's/Operator's Engineer for inclusion in the Site Log Book, prior to mobilization on-site.

5. Participate in a pre-construction meeting which shall include the City of Poughkeepsie representative, Owner/Operator, Owner's/Operator's Engineer, Qualified Inspector, and all subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.

6. If Contractor plans on utilizing adjacent properties for material, waste, borrow, or equipment storage areas, or if Contractor plans to engage in industrial activity other than construction (such as operating asphalt and/or concrete plants) at the site, Contractor shall submit appropriate documentation to the Owner's/Operator's Engineer so that the SWPPP can be modified accordingly.

7. Implement site stabilization, erosion and sediment control measures, and other requirements of the SWPPP.

8. In accordance with the requirements in the most current version of the NYS Standards and Specifications for Erosion and Sediment Control, conduct inspections of erosion and sediment control measures installed at the site to ensure that they remain in effective operating condition at all times. Prepare and retain written documentation of inspections as well as of all repairs/maintenance activities performed. This information must be retained as part of the Site Log Book.

9. Begin implementing corrective actions within one (1) business day of receipt of notification by the Qualified Inspector/Qualified Professional that deficiencies exist with the erosion and sediment control measures employed at the site. Corrective actions shall be completed within a reasonable time frame.

10. Maintain a record of the date(s) and location(s) that soil restoration is performed in accordance with the accompanying plans and NYSDEC Division of Water's publication "Deep-Ripping and Decompaction," dated April 2008. A copy of this is publication is provided in Appendix H. The record that is to be maintained shall be a copy of the overall site grading plan delineating the area(s) and date(s) that the soil was restored.

11. Upon completion of all construction at the site, the contractor responsible for overall SWPPP Compliance shall sign the certification on their Contractor Certification Form indicating that: a.) all temporary erosion and sediment control measures have been removed from the site, b.) the on-site soils disturbed by construction activity have been restored in accordance with the SWPPP and the NYSDEC Division of Water's publication "Deep-Ripping and Decompaction," and c.) all permanent stormwater management practices required by the SWPPP have been installed in accordance with the contract documents.

7.4 Qualified Inspector's/Qualified Professional's Responsibilities

1. Participate in a pre-construction meeting with the City of Poughkeepsie representative, Owner/Operator, Owner/Operator's Engineer, Contractor, and their subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.

2. Conduct an initial assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment control measures described within this SWPPP have been adequately installed and implemented to ensure overall preparedness of the site.

3. Provide on-site inspections to determine compliance with the SWPPP. Site inspections shall occur at an interval of at least once every seven calendar days. A written inspection report shall be provided to the Owner/Operator and general contractor within one business day of the completion of the inspection, with any deficiencies identified. A sample inspection form is provided in Appendix F.

4. Prepare an inspection report subsequent to each and every inspection that shall include/address the items listed in Part IV.C.4.a-k of GP-0-20-001. Sign all inspection reports and maintain on site with the SWPPP.

5. Notify the owner/operator and appropriate contractor or subcontractor of any corrective actions that need to be taken.

6. Prepare a construction Site Log Book to be used as a record of all inspection reports generated throughout the duration of construction. Ensure that the construction Site Log Book is maintained and kept up-to-date throughout the duration of construction.

7. Review the Contractor's SWPPP records on a periodic basis to ensure compliance with the requirements for daily reports, soil restoration, inspections, and maintenance logs.

8. Based on the as-built survey and material testing certifications performed by others, the Qualified Professional shall perform evaluations of the completed stormwater management practices to determine whether they were constructed in accordance with this SWPPP.

9. The Qualified Professional shall conduct a final site assessment and prepare a certification letter to the Owner/Operator indicating that, upon review of the material testing and inspection reports prepared by the firm retained by the Owner/Operator, review of the completed topographic survey, and evaluation of the completed stormwater management facilities, the stormwater management facilities have been constructed substantially in accordance with the contract documents and should function as designed.

10. Prepare the Notice of Termination (NOT). The Qualified Professional shall sign the NOT Certifications VI (Final Stabilization) and VII (Post-construction Stormwater Management Practices), and forward the NOT to the Owner/Operator for signature on Certification VIII (Owner/Operator Certification).

11. Transfer the SWPPP documents, along with all NOI's, permit certificates, NOT's, construction Site Log Book, and written records required by the General Permit to the Owner/Operator for archiving.

7.5 SWPPP Participants

1. Owner's/Operator's Engineer [2]: Christopher Lapine, PE
   LaBella Associates, DPC
   21 Fox Street
   Poughkeepsie, NY 12601
   Phone: (845) 454-3980

2. Owner/Operator [3]: Mr. Michael Abuladze, CEO
   ARGO Development
   95 Chestnut Ridge Rd
   Montvale, NJ 07645

3. Contractor[4,6]: Name and Title: _____

   Company Name: _____

   Mailing Address: _____

   _____

   Phone: _____

   Fax: _____

[2] Refer to Appendix B for the SWPPP Preparer Certification Form.
[3] Refer to Appendix B for the Owner/Operator Certification Form.
[5] Refer to Appendix B for Contractor and Subcontractor Certification Form.
[6] Contractor's information to be entered once the Contractor has been selected.

APPENDIX A:
FIGURES

A-1: Site Location Map
A-2: Soils Map
A-3: Historic Places Screening Map
A-4: Environmental Resource Map
A-5: Pre-Development Watershed Delineation Map
A-6: Post-Development Watershed Delineation Map

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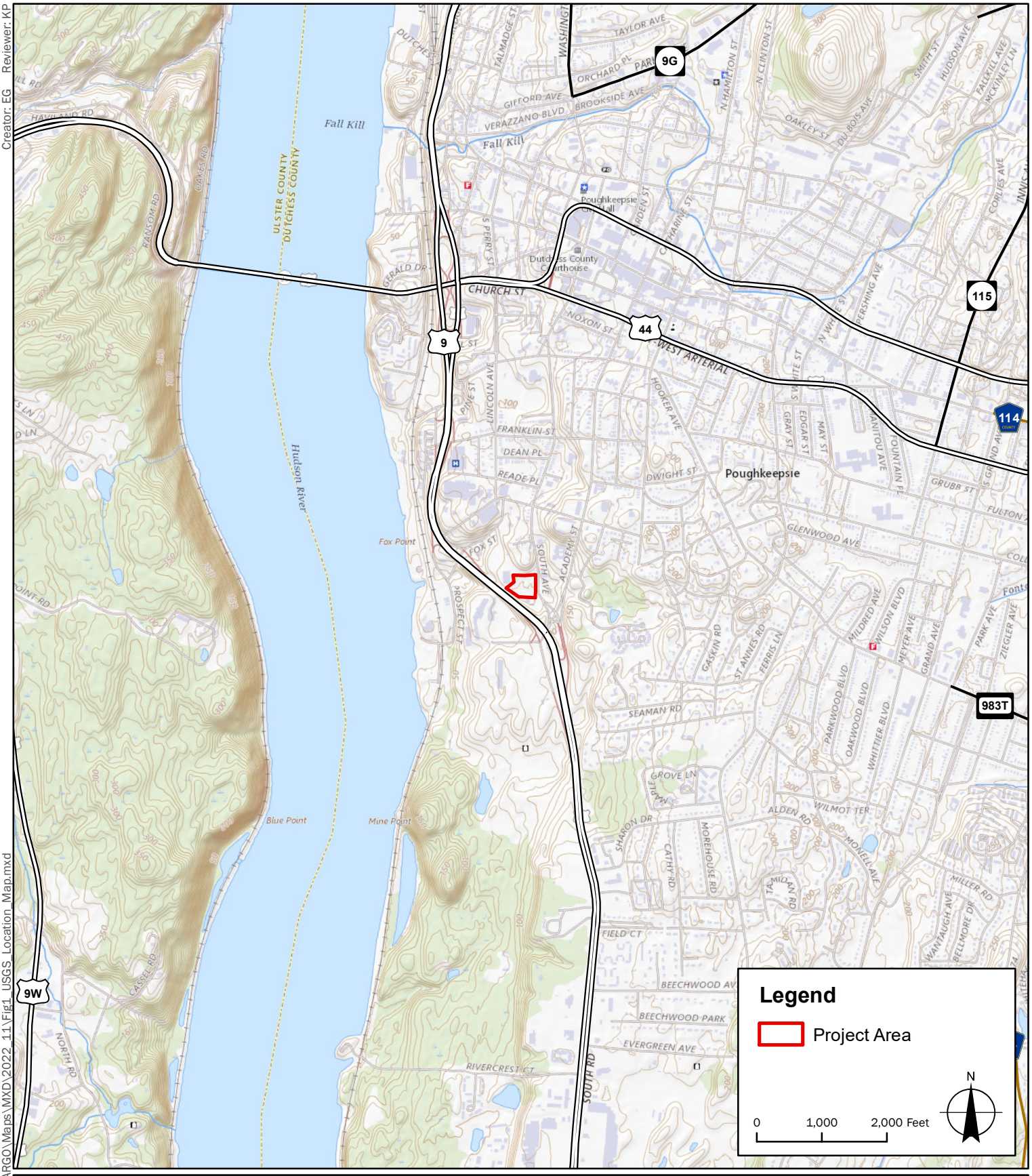

Sources:
1. Project Area: LaBella 2022; Regrid 2021
2. Streets: NYS GIS Program Office 2022
3. Basemap: USGS Topo Map

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South Avenue,
City of Poughkeepsie,
Dutchess Co., New York

South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/14/2022

USGS Location Map

FIGURE 1

Creator: EG Reviewer: KP

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Sources:
1. Project Area: LaBella 2022
2. Soil Map Unit: USDA/NRCS 2021
3. Streets: NYS GIS Program Office 2022
4. Basemap: Bing Maps

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South Avenue,
City of Poughkeepsie,
Dutchess Co., New York

South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/14/2022

Soils Map

FIGURE 2

Creator: EG Reviewer: KP

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Creator: EG Reviewer: KP

Path: B:\GIS\DIG\Projects\FEAF\ARGO\Maps\MXD\2022_11\Fig7_CRIS.mxd

Sources:
1. Project Area: LaBella, 2022
2. Archaeologically Sensitive Areas/National Register Sites: NYSOPRHP Cultural Resource Information System (CRIS), 2022
3. Streets: NYS GIS Program Office, 2022
4. Basemap: Bing Maps

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Dutchess Co., New York

South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/15/2022

NYSOPRHP Cultural Resource Information System (CRIS) Map

FIGURE 3

Creator: EG Reviewer: KP

Path: B:\GIS\DIG\Projects\FEAF\ARGO\Maps\MXD\2022_11\Fig6_DEC_ERM_Map.mxd

Sources:
1. Project Area: LaBella 2022
2. Rare Plants or Animals and Significant Natural Communities: NYSDEC Environmental Resource Mapper (ERM) 2022
3. NYSDEC Wetlands: NYSDEC 2006
4. Streets: NYS GIS Program Office 2022
5. Basemap: Bing Maps

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South Avenue,
City of Poughkeepsie,
Dutchess Co., New York

South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/15/2022

NYSDEC Environmental Resource Map

FIGURE 4

1 PREDEVELOPMENT WATERSHED MAP
FIG 5 SCALE: 1" = 30'

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21 Fox Street
Poughkeepsie, NY 12601
(845) 454-3980

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It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE
MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

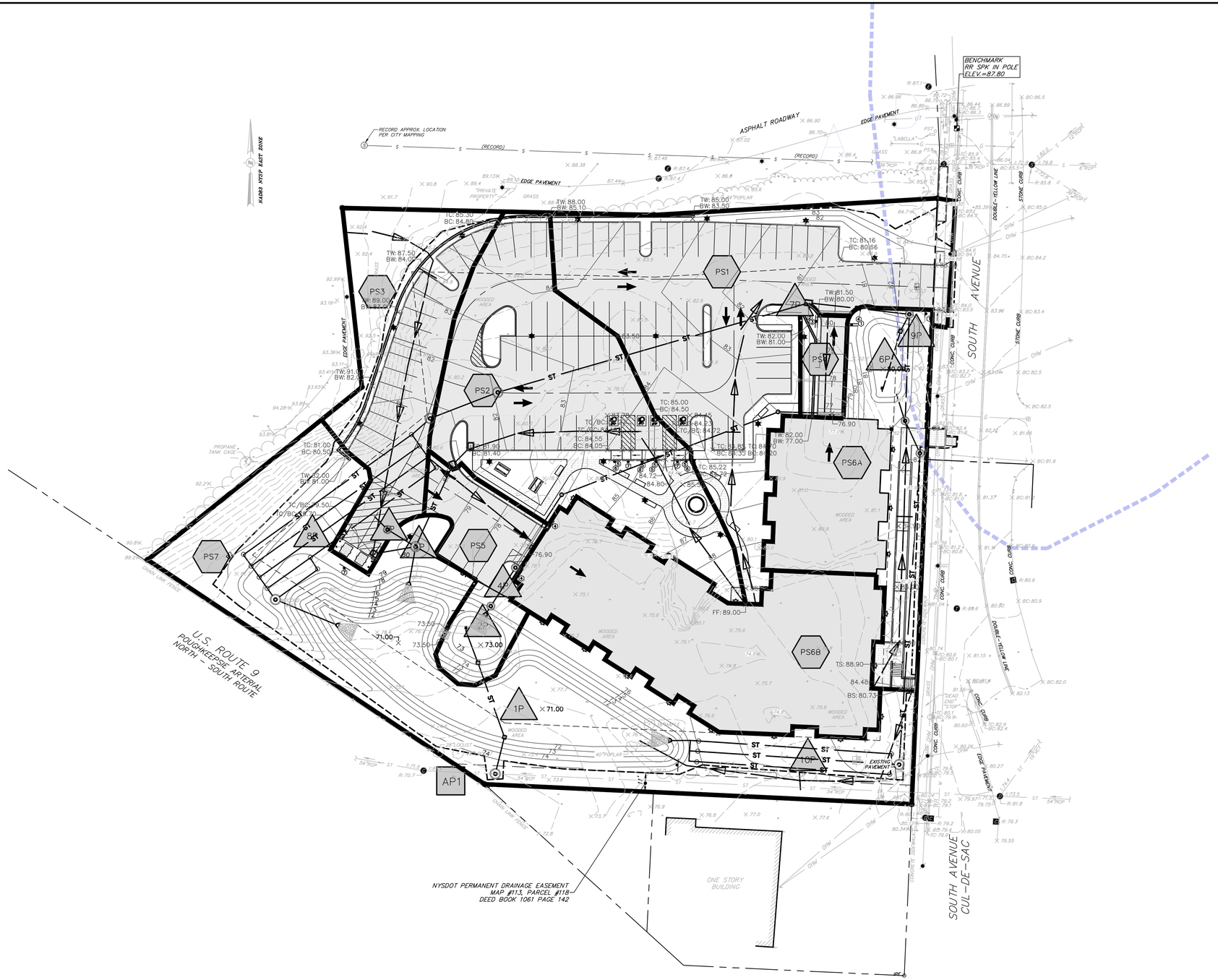
NO:	DATE:	DESCRIPTION:
Revisions		

PROJECT NUMBER: 2222201
DRAWN BY:
REVIEWED BY: CPL
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 11/28/2022
DRAWING NAME:

PREDEVELOPMENT WATERSHED MAP

DRAWING NUMBER:

FIG 5



1 FIG 6 POSTDEVELOPMENT WATERSHED MAP
SCALE: 1" = 30'

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It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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APPLICANT NAME & ADDRESS:

ARGO DEVELOPMENT
95 CHESTNUT RIDGE ROAD
MONTVALE, NJ 07645

PROJECT NAME & LOCATION:

SOUTH AVE
MULTI-FAMILY DEVELOPMENT
SOUTH AVENUE
CITY OF POUGHKEEPSIE, NY 12601

NO:	DATE:	DESCRIPTION:
Revisions		

PROJECT NUMBER: 2222201

DRAWN BY:

REVIEWED BY: CPL

ISSUED FOR: PLANNING BOARD REVIEW

DATE: 11/28/2022

DRAWING NAME:

POSTDEVELOPMENT WATERSHED MAP

DRAWING NUMBER:

FIG 6

11/29/2022 1:19:26 PM
Z:\2022Projects\ARGO\2222201 - South Ave Multi Family Dev\05_Drawings\Civil\FIG6_2222201_POST_DEV_MAP.dwg

APPENDIX B:
FORMS

Notice of Intent
MS4 SWPPP Acceptance Form
Contractor and Subcontractor Certification Forms
Notice of Termination (NOT)

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NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
ARGO Development

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Abuladze

Owner/Operator Contact Person First Name
Michael

Owner/Operator Mailing Address
95 Chestnut Ridge Rd

City
Montvale

State
NJ

Zip
07645-____

Phone (Owner/Operator)
201-549-9090

Fax (Owner/Operator)
___-___-____

Email (Owner/Operator)
mike@argodev.com

FED TAX ID
__-_____ (not required for individuals)

Project Site Information

Project/Site Name
South Ave Multi-Family Development

Street Address (NOT P.O. BOX)
South Ave

Side of Street
○ **North** ○ **South** ○ **East** ● **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
City of Poughkeepsie

State: NY
Zip: 12601-5584
County: Dutchess
DEC Region: 3

Name of Nearest Cross Street
Academy Street

Distance to Nearest Cross Street (Feet)
450

Project In Relation to Cross Street
○ **North** ● **South** ○ **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel
6061-52-937583

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting): 588863

Y Coordinates (Northing): 4615867

2. What is the nature of this construction project?

● **New Construction**

○ **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ● FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION — Number of Lots
- ○ TOWN HOME RESIDENTIAL
- ● MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
2.8	2.5	0.0	1.5

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ● **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
97 %	0 %	0 %	3 %

7. Is this a phased project? ○ **Yes** ● **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date	End Date
07/01/2023	07/01/2024

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

Hudson River

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ○ Stream / Creek Off Site
- ○ River On Site
- ● River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ● Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-15-002? ○ **Yes** ● **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002? ○ **Yes** ● **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ● **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ● **No**
If Yes, what is the acreage to be disturbed?

.

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ● **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ◉ Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

NYS Dept of Transportation

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ◉ No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ◉ No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ◉ No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ◉ No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ◉ Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ◉ Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ◉ Yes ○ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer
LaBella Associates

Contact Name (Last, Space, First)
Lapine, Christopher

Mailing Address
21 Fox Street

City
Poughkeepsoe

State Zip
NY 12601-4724

Phone
845-454-3980

Fax
- -

Email
clapine@labellapc.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-15-002. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name
Christopher

MI
P

Last Name
Lapine

Signature

Date
/ /

25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ◪ Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ◪ Silt Fence
- ◪ Stabilized Construction Entrance
- ◪ Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ○ Mulching
- ● Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ○ Sodding
- ● Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ● Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ● Retaining Wall
- ○ Riprap Slope Protection
- ● Rock Outlet Protection
- ○ Streambank Protection

Other

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.170 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)		and/or	
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or	
○ Tree Planting/Tree Pit (RR-3)		and/or	
○ Disconnection of Rooftop Runoff (RR-4)		and/or	
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			
○ Rain Garden (RR-6)			
○ Stormwater Planter (RR-7)			
○ Rain Barrel/Cistern (RR-8)			
○ Porous Pavement (RR-9)			
○ Green Roof (RR-10)			
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			
○ Infiltration Basin (I-2)			
○ Dry Well (I-3)			
✓ Underground Infiltration System (I-4)			1.26
✓ Bioretention (F-5)			0.26
○ Dry Swale (O-1)			
Standard SMPs			
○ Micropool Extended Detention (P-1)			
○ Wet Pond (P-2)			
○ Wet Extended Detention (P-3)			
○ Multiple Pond System (P-4)			
○ Pocket Pond (P-5)			
○ Surface Sand Filter (F-1)			
○ Underground Sand Filter (F-2)			
○ Perimeter Sand Filter (F-3)			
○ Organic Filter (F-4)			
○ Shallow Wetland (W-1)			
○ Extended Detention Wetland (W-2)			
○ Pond/Wetland System (W-3)			
○ Pocket Wetland (W-4)			
○ Wet Swale (O-2)			

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
○ **Hydrodynamic**	
○ **Wet Vault**	
○ **Media Filter**	
○ **Other**	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.165 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ● **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.089 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

● **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

0.176 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). 0.341

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ● **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

0.00 **acre-feet**

CPv Provided

0.00 **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

● Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

0.02 **CFS**

Post-development

0.00 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

1.38 **CFS**

Post-development

1.36 **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● **Yes** ○ **No**

If Yes, Identify the entity responsible for the long term Operation and Maintenance

ARGO Development

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP NYR20A198
- ○ Other
- ○ None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ◉ **No**
If Yes, Indicate Size of Impact. .

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ◉ **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ◉ **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. NYR20A198

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name: Michael

MI:

Print Last Name: Abuladze

Owner/Operator Signature:

Date: / /

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	ARGO Development
2. Contact Person:	Michael Abuladze
3. Street Address:	95 Chestnut Ridge Rd
4. City/State/Zip:	Montvale, NJ 07645
II. Project Site Information	
5. Project/Site Name:	South Ave Multi-Family Development
6. Street Address:	South Ave
7. City/State/Zip:	Poughkeepsie, NY 12601
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	Christopher Lapine
9. Title/Position:	Regional Leader
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	City of Poughkeepsie
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	Rich DuPike
14. Street Address:	62 Civic Center Plaza
15. City/State/Zip:	Poughkeepsie, NY 12601
16. Telephone Number:	845-451-4192

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

Stormwater Pollution Prevention Plan
Contractor Certification Statement
(Responsible for overall SWPPP Compliance)

South Ave Multi-Family Development
City of Poughkeepsie, Dutchess County, New York

This is to certify that the following contracting firm will be responsible for installing, constructing, repairing, inspecting and/or maintaining the erosion and sediment control practices and post-construction stormwater management control practices required by the SWPPP.

Contracting Firm Information

Name: _____

Address: _____

Telephone & Fax: _____

Trained Contractor(s)[1] Responsible for SWPPP Implementation (Provide name, title, and date of last training)

_____

_____

Prior to commencement of construction activity, the following certification shall be issued:

I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations.

Printed Name: _____

Title/Position: _____

Signature: _____ Date: _____

Upon completion of construction activities, the following certification shall be issued, prior to issuance of the NOT:

I hereby certify that that all permanent stormwater management practices required by the SWPPP have been installed in accordance with the contract documents. I further certify that all temporary erosion and sediment control measures have been removed from the site, and that the on-site soils disturbed by construction activity have been restored in accordance with the SWPPP and the NYSDEC Division of Water's publication "Deep-Ripping and Decompaction".

Printed Name: _____

Title/Position: _____

Signature: _____ Date: _____

[1] "Trained Contractor" means an employee from a contracting (construction) company that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the "trained contractor" shall receive four (4) hours of training every three (3) years. It can also mean an employee from the contracting (construction) company that meets the "qualified inspector" qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity). The "Trained Contractor" will be responsible for the day to day implementation of the SWPPP.

[2] Signatory Requirements:

a. For a corporation, this form shall be signed by (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principle business function, or any other person who performs similar policy or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. For a partnership or sole proprietorship, this form shall be signed by a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public agency, this form shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. Regional Administrators of EPA).

Stormwater Pollution Prevention Plan
Subcontractor Certification Statement
(whose work involves soil disturbance)

South Ave Multi-Family Development
City of Poughkeepsie, Dutchess County, New York

Each Subcontractor whose work will involve soil disturbance of any kind is required to complete and sign this Certification Statement before commencing any construction activity at the site. This completed Certification Statement(s) shall be maintained at the construction site in the Site Log Book.

Subcontracting Firm Information

Name: _____

Address: _____

_____

Telephone & Fax: _____

Trained Contractor(s)[2] Responsible for SWPPP Implementation (Provide name, title, and date of last training)

_____

_____

Prior to commencement of construction activities, the following certification shall be issued:

I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations.

Printed Name: _____

Title/Position: _____

Signature: _____ Date: _____

[2] "Trained Contractor" means an employee from a contracting (construction) company that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the "trained contractor" shall receive four (4) hours of training every three (3) years. It can also mean an employee from the contracting (construction) company that meets the "qualified inspector" qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity). The "Trained Contractor" will be responsible for the day to day implementation of the SWPPP.

[2] Signatory Requirements:

a. For a corporation, this form shall be signed by (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principle business function, or any other person who performs similar policy or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. For a partnership or sole proprietorship, this form shall be signed by a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public agency, this form shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. Regional Administrators of EPA).

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name: ARGO Development

2. Street Address: 95 Chestnut Ridge Rd

3. City/State/Zip: Montvale, NJ 07645

4. Contact Person: Michael Abuladze | 4a. Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name: South Ave Multi-Family Development

6. Street Address: South Ave

7. City/Zip: Poughkeepsie, NY 12601

8. County: Dutchess

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:	
Title/Position:	
Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

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APPENDIX C:
PROJECT EVALUATION AND DESIGN CALCULATIONS

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Appendix C - Table A
Step 1 - Evaluation of Green Infrastructure Planning Measures

Group	Practice	Description	Applicable	Project Specific Evaluation
Preservation of Natural Resources	**Preservation of Undisturbed Areas**	Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.	No	The project does not propose permanent conservation of this area at this time.
	Preservation of Buffers	Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.	NA	There are no perennial streams, rivers, shorelines, or wetlands on or adjacent to the project site. As such, this green planning measure does not apply.
	Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	No	This project proposes tree clearing.
	Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	Yes	The site layout has been designed to avoid sensitive resource areas to the greatest extent practical. The site layout will avoid disturbance of steep slopes located on the project site.
	Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	No	The site layout has been designed to maximize open space to the greatest possible extent.
	Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of practices such as downspout disconnections, grass channels, filter strips, and tree clusters.	Yes	Full soil restoration is proposed for all areas of disturbance that will not become hardscape. All areas will be stabilized with seed & mulch, and landscaped areas will be provided.
Reduction of Impervious Cover	**Roadway Reduction**	Minimize roadway widths and lengths to reduce site impervious area	NA	No new roadways are proposed as part of this project.
	Sidewalk Reduction	Minimize sidewalk lengths and widths to reduce site impervious area	Yes	Sidewalk widths and lengths have been minimized to the greatest extent practical.
	Driveway Reduction	Minimize driveway lengths and widths to reduce site impervious area	Yes	Driveway widths and lengths have been minimized to the greatest extent practical.
	Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	NA	No cul-de-sacs are proposed as part of this project.
	Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	No	This project proposes a new building.
	Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimensions, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	Yes	On-site parking has been allocated to provide a sufficient number of spaces for the intended use.

Appendix K - Table B
Step 2 - Determine Water Quality Treatment Volume (WQv)

Determine Pre- and Post-Development Impervious Cover Areas				
Watershed Pre-Development Impervious Area:	1,482	sf =	0.03	ac
Watershed Post-Development Impervious Area:	66,076	sf =	1.52	ac
Total Area Within Work Limits:	122,856	sf =	2.82	ac
Existing Disturbed Impervious Area:	0	sf =	0.00	ac
Additional Runoff From Trib. Areas Not Within the Disturbed, Impervious Area:	1,482	sf =	0.03	ac
New Development Impervious Area:	64,594	sf =	**1.48**	**ac**
Redevelopment Impervious % (based on proposed treatment practice)	0	%		
Redevelopment Impervious Area:	0	sf =	**0.00**	**ac**

Determine the Initial Water Quality Volume (WQv)				
WQv(acre-feet) = [(P)(Rv)(A)] /12				
Rv = 0.05+0.009(I)				
I = Impervious Cover (%)				
P=	1.38	*inch*		
I=	53%			
Rv=	0.523			
Initial WQv=	**7,392**	cf =	**0.170**	**ac-ft**

Appendix C - Table C
Step 3 - Evaluation of Runoff Reduction Techniques and Standard SMPs with RRv Capacity

Design Variant	Practice	Description	Applicable	Project Specific Evaluation/Justification
RR-1	**Conservation of Natural Areas**	Retain the pre-development hydrologic and water quality characteristics of undisturbed natural areas, stream and wetland buffers by restoring and/or permanently conserving these areas on a site.	No	The project does not propose permanent conservation of these areas at this time.
RR-2	**Sheet flow to Riparian Buffers or Filter Strips**	Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from portions of development.	No	Riparian buffers or filter strips are not proposed.
RR-3	**Tree Planting/ Tree Pit**	Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, and conservation areas.	No	The project proposes the preservation of existing mature trees, as well as the planting of numerous trees throughout the site, in order to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. However, credit for these trees will not be taken toward an area reduction in the RRv calculations.
RR-4	**Disconnection of Rooftop Runoff**	Direct runoff from residential rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates.	No	Rooftop disconnect is not applicable, since this is a commercial building project.
RR-5	**Vegetated Swale**	The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	No	Swales are not proposed on this site.
RR-6	**Rain Garden**	Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	No	Due to the limited tributary area to rain gardens (≤ 1,000SF), a bioretention facility will be implemented instead of rain gardens.
RR-7	**Stormwater Planter**	Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters use soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.	Yes	A stormwater planter is proposed on the south side of the proposed building, and will capture a portion of the new roof area.
RR-8	**Rain Barrels/ Cisterns**	Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	No	Rain Barrels/Cisterns are not proposed on-site due to the need for active management/maintenance and initial capital cost.
RR-9	**Porous Pavement**	Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	No	Porous pavement is not proposed as part of this project due to low permeability of on-site soils, as well as concerns regarding winter maintenance.
RR-10	**Green Roof**	Capture runoff by a layer of vegetation and soil installed on top of a conventional flat or sloped roof. The rooftop vegetation allows evaporation and evapotranspiration processes to reduce volume and discharge rate of runoff entering conveyance system.	No	A green roof is not proposed on-site due to significant structural, insurance, and maintenance considerations.
	Stream Daylighting	Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.	No	No stream daylighting opportunities are present on this site.

I-1	**Infiltration Trench**	Excavated, stone-filled trenches designed to capture and temporarily store runoff in the stone reservoir to promote infiltration. Can be constructed as sheet flow to a ground surface depression or piped flow discharged directly into the trench.	No	Infiltration is not proposed due to poor draining soils.
I-2	**Infiltration Basin**	Vegetated excavations designed to capture and infiltrate the WQv. Can be designed off-line to bypass larger flows to downstream flood control facilities or as combined infiltration/flood control facilities by providing temporary detention ponding.	No	Infiltration is not proposed due to poor draining soils.
I-3	**Dry Wells**	Underground structures designed to capture, treat, and infiltrate runoff from small drainage areas (rooftop only) that have low sediment or pollutant loadings. Larger stormwater volumes can be bypassed directly to a flood control facility.	No	Infiltration is not proposed due to poor draining soils.
I-4	**Underground Infiltration Systems**	Underground, proprietary systems designed to capture and infiltrate the WQv, reduce runoff, remove fine sediment and associated pollutants, recharge groundwater, and attenuate peak flows.	No	Infiltration is not proposed due to poor draining soils.
F-5	**Bioretention**	Shallow landscaped depressions where stormwater flows into the practice, ponds at the surface, and gradually filters through the media to remove pollutants. Filtered runoff can either infiltrate into the surrounding soil, or be collected by an underdrain system and discharged to the storm sewer system or directly to receiving waters.	Yes	Bioretention has been applied to this project.
O-1	**Dry Swale**	Designed to temporarily hold the WQv in a pool or series of pools created by permanent check dams. The soil bed consists of native soils or highly permeable fill material, underlain by an underdrain system. Pollutants are removed through sedimentation, nutrient uptake, and infiltration.	No	Dry swales are not proposed because they are intended for use with roads, highways, or residential development.

Appendix C - Table D

Step 4 - Determine Minimum Runoff Reduction Volume (RRv) Required

Section 4.3 of the NYSDEC Stormwater Management Design Manual describes the equation for minimum Runoff Reduction Volume as:

$$RRv_{min} = (P \times \bar{R}v \times Aic \times S) / 12$$

where: RRv_{min} = Minimum Runoff Reduction Volume Required (acre-feet)
P = 90% Rainfall Event Number (inches) (interpolated from Design Manual Fig
$\bar{R}v$ = 0.05 + 0.009 (I), where I is 100% impervious = 0.95 constant
Aic = Total area of new impervious cover (acres)
S = Hydrologic Soil Group (HSG) Specific Reduction Factor

HSG A=	0.55	HSG C=	0.30
HSG B=	0.40	HSG D=	0.20

Enter the Soils Data for the site

Soil Group	Acres	S
A	2.71	0.55
B	0.00	0.40
C	0.00	0.30
D	0.11	0.20
Total Area	2.82	acres

Calculate the Minimum RRv

S =	**0.54**	
Impervious	1.52	*acre*
Precipitation	1.38	*in*
Rv	0.95	
Minimum RRv	**3,868**	ft^3
	0.089	af

Appendix C - Table E

Summary Table: Runoff Reduction Volume and Treated volumes

	Runoff Reduction Techiques/Standard SMPs		Total Contributing Area	Total Contributing Impervious Area	WQv Reduced (RRv)	WQv Treated
			(acres)	(acres)	cf	cf
Area/Volume Reduction	Conservation of Natural Areas	RR-1	0.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4	0.00	0.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basins	I-2	0.00	0.00	0	
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	2.42	1.26	6,299	6,299
	Bioretention	F-5	0.40	0.26	907	1,360
	Dry Swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention (P-1)	P-1	0.00	0.00		0
	Wet Pond (P-2)	P-2	0.00	0.00		0
	Wet Extended Detention (P-3)	P-3	0.00	0.00		0
	Multiple Pond System (P-4)	P-4	0.00	0.00		0
	Pocket Pond (P-5)	P-5	0.00	0.00		0
	Surface Sand Filter (F-1)	F-1	0.00	0.00		0
	Underground Sand Filter (F-2)	F-2	0.00	0.00		0
	Perimeter Sand Filter (F-3)	F-3	0.00	0.00		0
	Organic Filter (F-4)	F-4	0.00	0.00		0
	Shallow Wetland (W-1)	W-1	0.00	0.00		0
	Extended Detention Wetland (W-2)	W-2	0.00	0.00		0
	Pond/Wetland System (W-3)	W-3	0.00	0.00		0
	Pocket Wetland (W-4)	W-4	0.00	0.00		0
	Wet Swale (O-2)	O-2	0.00	0.00		0
Alternative Practices	Hydrodynamic Separator		0.00	0.00		0
	Filterra Bioretention System		0.00	0.00		0
	Wet Vault		0.00	0.00		0
	Media Filter		0.00	0.00		0
Totals by Area Reduction →			0.00	0.00	0	
Totals by Volume Reduction →			0.00	0.00	0	
Totals by Standard SMP w/RRV →			2.82	1.52	7,206	7,659
Totals by Standard SMP →			0.00	0.00		0
Totals by Alternative Practices →			0.00	0.00		0
Totals (Area + Volume + all SMPs) →			2.82	1.52	**7,206**	**7,659**

Appendix C - Table F
Practice Specific Sizing Calculation Worksheet

BIORETENTION NO. 1 (2P)

Practice Proposed?	Yes

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft^3)	Precipitation (in)	Description
PS4,5	0.10	0.09	85%	0.81	423	1.38	Bioretention
Enter Impervious Area Reduced by Disconnection of Rooftops Within this Catchment:		0.00	85%	0.81	423	<<WQv after adjusting for Disconnected Rooftops	
Reduced by Tree Planting:	0.00	0.00	85%	0.81	423	<<WQv after adjusting for Tree Planting	
Enter the portion of the WQv that is not reduced for all practices routed to this practice:					0	ft^3	

Determine Required Water Quality Volume

WQv = (P/12) * Rv * A

where: WQv = Water Quality Volume (acre-feet)
P = 1-year 24-hour design storm (inches)
Rv = 0.05 + 0.009 (I); min Rv = 0.2
I = Impervious Cover (%) within the drainage area contributing to the SWM practice
A = Drainage area (square feet) contributing to the SWM practice

WQv = 423 CF **Value taken from Appendix K - Table B*

Calculate Required Filter Bed Area

Af=(WQv)*(df)/[(k)*(hf+df)*(tf)]

where: Af = Surface area of filter bed (SF)
WQv = Required Water Quality Volume (CF)
df = Filter bed depth (ft)
k = Coefficient of permeability of filter media (ft/day)
hf = Average height of water above filter bed (ft)
tf = Design filter bed drain time (days)

SMP ID	WQv (cubic feet)	df (feet)	k (ft/day)	hf (feet)	tf (days)	Minimum Af (sq-ft)	Provided Af (sq-ft)
BIO-1	423	2.5	0.5	0.5	2.0	352	515

Calculate Provided Water Quality Volume

WQv Provided Within Practice = Total volumes of soil media, mulch, and ponding

$WQv = V_{SM} + V_M + Vpond$

$V_{SM} = Af * df * P_{SM}$ = 258 cf.
$V_M = Af * dm * P_M$ = 52 cf.
$V_{POND} = (Af * hf * 2) + (2 * S * hf^2 * Pf)$ = 638 cf.

where:

P_{SM} =	Porosity of soil media - 0.20	0.20	
P_M =	Porosity of mulch - 0.40	0.40	
S =	Bioretention Side Slopes	3.00	:1
Pf =	Bioretention Perimeter	82	LF

WQv = 947 CF

Calculate Provided Runoff Reduction Volume

Using Underdrains? Yes
RRv = 379 CF
RRv Applied = 379 CF *This is 40% of the storage provided or WQv, whichever is less.*

BIORETENTION NO. 2 (6P)

Practice Proposed?	Yes

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft^3)	Precipitation (in)	Description
PS6A	0.29	0.17	59%	0.58	857	1.38	Bioretention
Enter Impervious Area Reduced by Disconnection of Rooftops Within this Catchment:		0.00	59%	0.58	857	<<WQv after adjusting for Disconnected Rooftops	
Reduced by Tree Planting:	0.00	0.00	59%	0.58	857	<<WQv after adjusting for Tree Planting	
Enter the portion of the WQv that is not reduced for all practices routed to this practice:					0	ft^3	

Determine Required Water Quality Volume

WQv = (P/12) * Rv * A

where: WQv = Water Quality Volume (acre-feet)
P = 1-year 24-hour design storm (inches)
Rv = 0.05 + 0.009 (I); min Rv = 0.2
I = Impervious Cover (%) within the drainage area contributing to the SWM practice
A = Drainage area (square feet) contributing to the SWM practice

WQv =	857	CF

**Value taken from Appendix K - Table B*

Calculate Required Filter Bed Area

Af=(WQv)*(df)/[(k)*(hf+df)*(tf)]

where: Af = Surface area of filter bed (SF)
WQv = Required Water Quality Volume (CF)
df = Filter bed depth (ft)
k = Coefficient of permeability of filter media (ft/day)
hf = Average height of water above filter bed (ft)
tf = Design filter bed drain time (days)

SMP ID	WQv (cubic feet)	df (feet)	k (ft/day)	hf (feet)	tf (days)	Minimum Af (sq-ft)	Provided Af (sq-ft)
BIO-1	857	2.5	0.5	0.5	2.0	715	720

Calculate Provided Water Quality Volume

WQv Provided Within Practice = Total volumes of soil media, mulch, and ponding

$WQv = V_{SM} + V_M + Vpond$

V_{SM} =	$Af * df * P_{SM}$	=	360	cf.
V_M =	$Af * dm * P_M$	=	72	cf.
V_{POND} =	$(Af * hf * 2) + (2 * S * hf^2 * Pf)$	=	888	cf.

where:

P_{SM} =	Porosity of soil media - 0.20	0.20	
P_M =	Porosity of mulch - 0.40	0.40	
S =	Bioretention Side Slopes	3.00	:1
Pf =	Bioretention Perimeter	112	LF

WQv =	1,320	CF

Calculate Provided Runoff Reduction Volume

Using Underdrains? Yes

RRv =	528	CF
RRv Applied =	**528**	**CF**

This is 40% of the storage provided or WQv, whichever is less.

Appendix C - Table G
Practice Specific Sizing Calculation Worksheet

INFILTRATION CHAMBER NO. 1 (8P)

Practice Proposed?	Yes

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Precipitation *(in)*	
PS1,2,3,6B,7	2.42	1.26	52%	0.52	6,265	1.38	
Enter Impervious Area Reduced by Disconnection of Rooftops Within this Catchment:		0.00	52%	0.52	6,265	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice:					0	*ft^3*	

Determine Pretreatment Volume

Infiltration Rate:	0.5	in/hour	
Pretreatment Sizing:	25	% WQv	25% minimum; 50% if > 2 in/hr; 100% if > 5 in/hr
Pretreatment Required Volume:	1,566	ft^3	
Pretreatment Provided:	1,566	ft^3	
Pretreatment Techniques Utilized:	Hydro		

Size Infiltration Basin

Design Volume	6,265	ft^3	WQv
Volume Provided	6,299	ft^3	Per HydroCAD model at specified elevation below overflow pipe

Calculate Provided Runoff Reduction Volume

RRv Applied =	6,299	CF

Appendix K - Table H
Practice Specific Sizing Calculation Worksheet

HYDRODYNAMIC SEPARATOR NO. 1 (3P)

Practice Proposed?	Yes
Treatment (Redevelopment)?	No

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious %	Rv	WQv *(ft^3)*	Precipitation *(in)*	Description
PS1,2,3,6C	1.44	1.06	74%	0.72	5,159	1.38	Hydrodynamic Separator

Compute Peak Water Quality Discharge

Qp = qu * A * WQv

where: qu = the unit peak discharge, in cfs/mi^2/inch
A = Drainage area (square miles) contributing to the SMP
WQv = Water Quality Volume (inches)

The unit peak discharge qu is obtained from TR-55 Exhibits 4-I through 4-III, depending on the NRCS rainfall distribution type. It is based on the time of concentration (Tc) in hours, the initial abstraction (Ia) in inches, and the precipitation (P) in inches. The initial abstraction (Ia) is obtained from TR-55 Table 4-1, and is based on the equivalent Curve Number for the water quality volume.

The equivalent Curve Number is calculated using the following equation:

CN = 1000 / [10 + 5P + 10Q - 10 * (Q^2 + 1.25QP)^0.5]

where: CN = Equivalent Curve Number
P = 90% Rainfall Event Number (inches) = 1.38 in
Q = Water Quality Volume (inches)

The following table presents the Water Quality Peak Flow calculations for each of the proposed stormwater management practices (SMPs):

SMP ID	A (ac)	WQv (cf)	Q (inches)	Tc (hours)	CN	Ia (inches)	Ia/P	qu (cfs/sq.mi.-inch)	Qp (cfs)
PS1,2,3,6C	1.44	5,159	0.99	0.10	96.1	0.081	0.059	700	**1.60**

Size Flow Diversion Structure

Orifice Equation: $Qp = CA(2gh)^{0.5}$

where: C = Orifice coefficient
A = Area of WQv orifice (sf)
g = acceleration due to gravity (feet/$second^2$)
h = depth of water to center of orifice (ft)
d = minimum diameter of WQv orifice
y = distance of overflow bipass above invert of water quality pipe (ft)

The following table presents the minimum diameter of the WQv orifice and distance of the overflow bipass above the invert of the

SMP ID	C	A (ft^2)	g (ft/sec^2)	h (ft)	d (ft)	d (in)	y (ft)
PS1,2,3,6C	0.60		32.2				

WQv Overflow Calc

Practice Proposed?	No
Treatment (Redevelopment)?	No

Hide worksheet and do not provide in SWPPP Calculations

Enter Site Data For Drainage Area to be Treated by Practice

Catchment	Total Area	Impervious Area	Percent	Rv	WQv	Precipitation	Description
PS1	0.54	0.40	74%	0.72	1,931	1.38	

Compute Peak Water Quality Discharge

Qp = qu * A * WQv

where: qu = the unit peak discharge, in cfs/mi^2/inch
A = Drainage area (square miles) contributing to the SMP
WQv = Water Quality Volume (inches)

The unit peak discharge qu is obtained from TR-55 Exhibits 4-I through 4-III, depending on the NRCS rainfall distribution type. It is
The equivalent Curve Number is calculated using the following equation:

CN = 1000 / [10 + 5P + 10Q - 10 * (Q^2 + 1.25QP)^0.5]

where: CN = Equivalent Curve Number
P = 90% Rainfall Event Number (inches) = 0.00 in
Q = Water Quality Volume (inches)

The following table presents the Water Quality Peak Flow calculations for each of the proposed stormwater management practices

SMP ID	A	WQv	Q	Tc	CN	Ia	Ia/P	qu	Qp
	(ac)	(cf)	(inches)	(hours)		(inches)		(cfs/sq.mi.-inch)	(cfs)
PS1	0.54	1,931	0.99	0.10	96.1	0.081	0.059	700	**0.60**

Size Flow Diversion Structure

Orifice Equation: Qp = CA(2gh)$^{0.5}$

where: C = Orifice coefficient
A = Area of WQv orifice (sf)
g = acceleration due to gravity (feet/second^2)
h = depth of water to center of orifice (ft)
d = minimum diameter of WQv orifice
y = distance of overflow bipass above invert of water quality pipe (ft)

The following table presents the minimum diameter of the WQv orifice and distance of the overflow bipass above the invert of the

SMP ID	C	A	g	h	d	d	y
		(ft^2)	(ft/sec^2)	(ft)	(ft)	(in)	(ft)
PS1	0.60	0.2	32.2	0.55	0.46	6	0.80

WQv Overflow Calc

Practice Proposed?	No
Treatment (Redevelopment)?	No

Hide worksheet and do not provide in SWPPP Calculations

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Precipitation *(in)*	Description
PS2, 3, 6C	0.90	0.67	74%	0.71	3,230	1.38	

Compute Peak Water Quality Discharge

Qp = qu * A * WQv

where: qu = the unit peak discharge, in cfs/mi^2/inch
A = Drainage area (square miles) contributing to the SMP
WQv = Water Quality Volume (inches)

The unit peak discharge qu is obtained from TR-55 Exhibits 4-I through 4-III, depending on the NRCS rainfall distribution type. It is
The equivalent Curve Number is calculated using the following equation:

CN = 1000 / [10 + 5P + 10Q - 10 * (Q^2 + 1.25QP)^0.5]

where: CN = Equivalent Curve Number
P = 90% Rainfall Event Number (inches) = 0.00 in
Q = Water Quality Volume (inches)

The following table presents the Water Quality Peak Flow calculations for each of the proposed stormwater management practices

SMP ID	A	WQv	Q	Tc	CN	Ia	Ia/P	qu	Qp
	(ac)	(cf)	(inches)	(hours)		(inches)		(cfs/sq.mi.-inch)	(cfs)
PS2, 3, 6C	0.90	3,230	0.98	0.10	96.0	0.083	0.060	700	**1.00**

Size Flow Diversion Structure

Orifice Equation: $Qp = CA(2gh)^{0.5}$

where:
C = Orifice coefficient
A = Area of WQv orifice (sf)
g = acceleration due to gravity (feet/$second^2$)
h = depth of water to center of orifice (ft)
d = minimum diameter of WQv orifice
y = distance of overflow bipass above invert of water quality pipe (ft)

The following table presents the minimum diameter of the WQv orifice and distance of the overflow bipass above the invert of the

SMP ID	C	A	g	h	d	d	y
		(ft^2)	(ft/sec^2)	(ft)	(ft)	(in)	(ft)
PS2, 3, 6C	0.60	0.3	32.2	0.55	0.60	8	0.88

APPENDIX D:
PRE-DEVELOPMENT STORMWATER MODELING

LaBella
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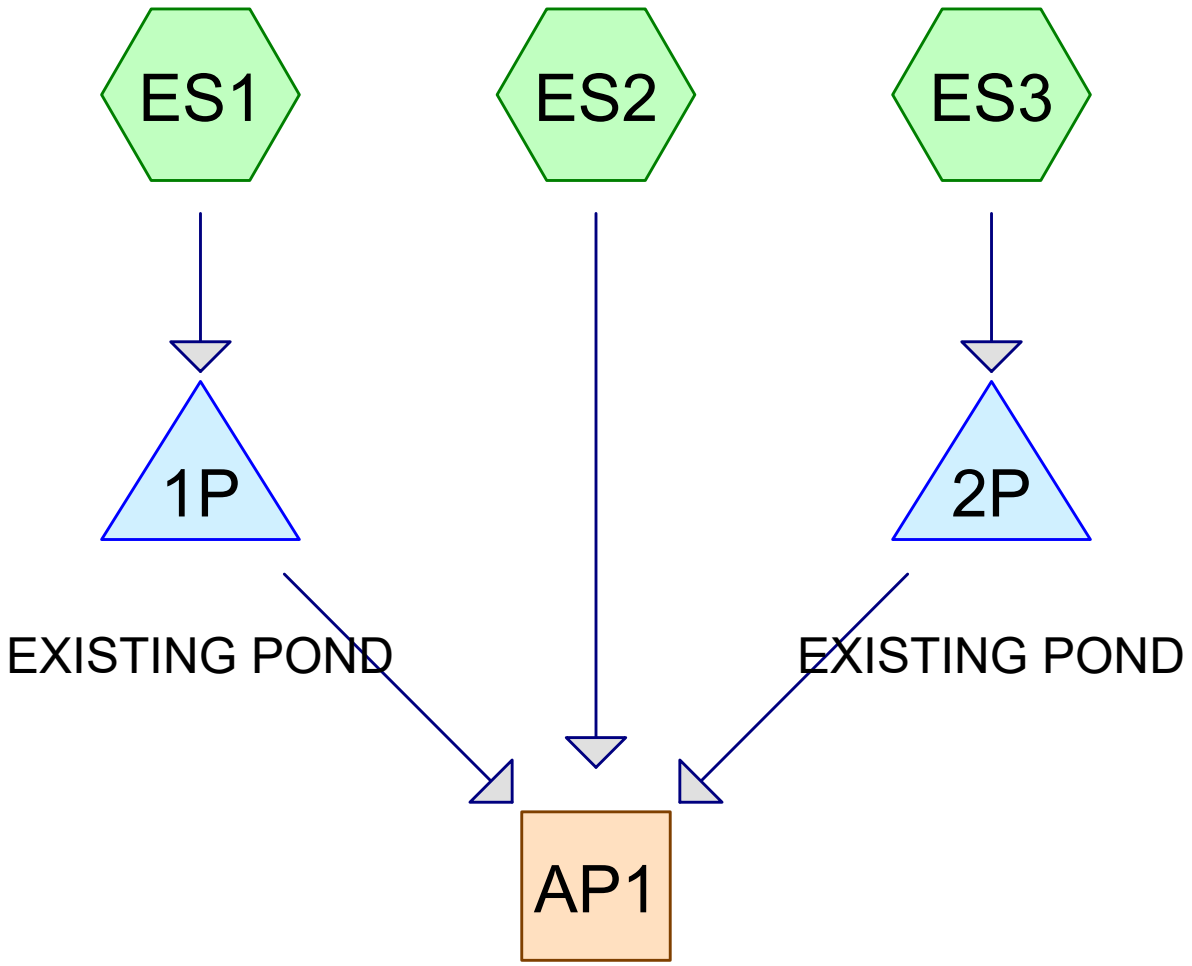

Subcat Reach Pond Link

Routing Diagram for HydroCAD_PreDev_2222201
Prepared by The Chazen Companies, Printed 11/29/2022
HydroCAD® 10.00-21 s/n 00927 © 2018 HydroCAD Software Solutions LLC

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Summary for Subcatchment ES1:

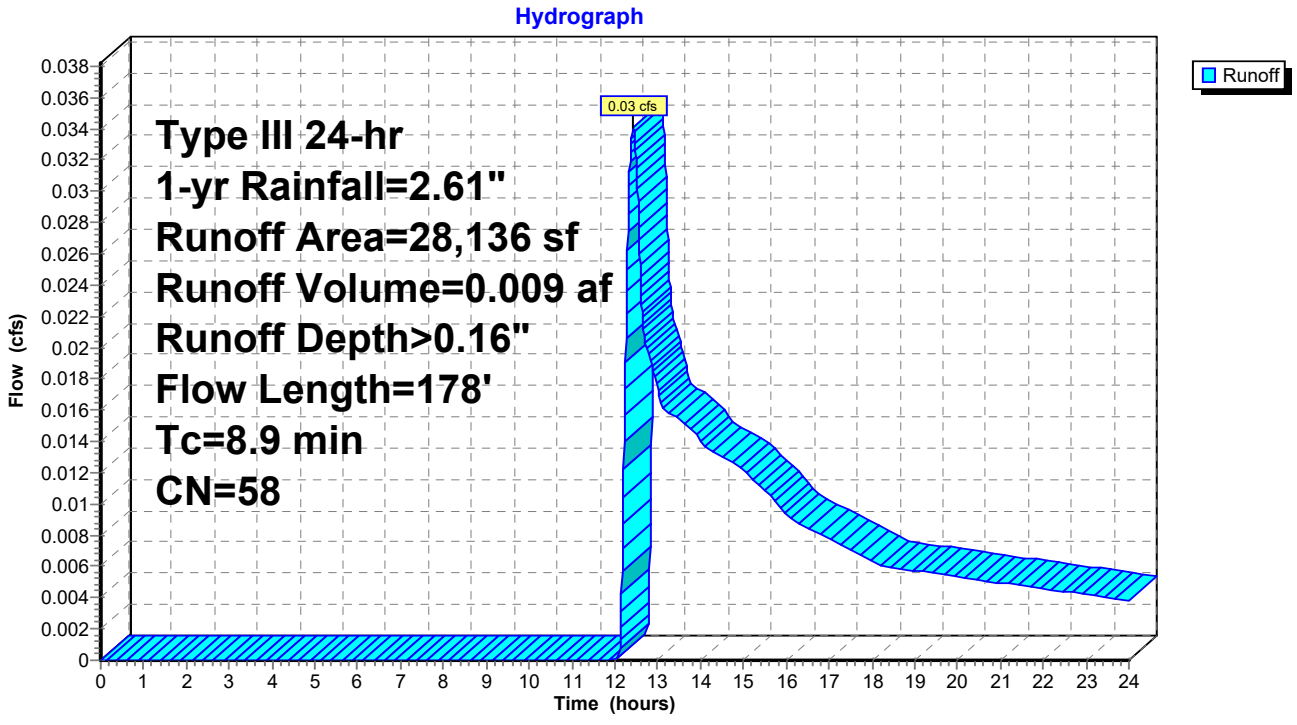
Runoff = 0.03 cfs @ 12.43 hrs, Volume= 0.009 af, Depth> 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
24,695	57	Woods/grass comb., Poor, HSG A
3,441	68	<50% Grass cover, Poor, HSG A
28,136	58	Weighted Average
28,136		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.1000	0.19		**Sheet Flow, 50' sheet flow grass** Grass: Dense n= 0.240 P2= 3.17"
3.1	28	0.2000	0.15		**Sheet Flow, 28' sheet flow woods** Woods: Light underbrush n= 0.400 P2= 3.17"
1.5	100	0.0488	1.10		**Shallow Concentrated Flow, 100' shallow concentrated woods** Woodland Kv= 5.0 fps
8.9	178	Total			

Subcatchment ES1:



Summary for Subcatchment ES2:

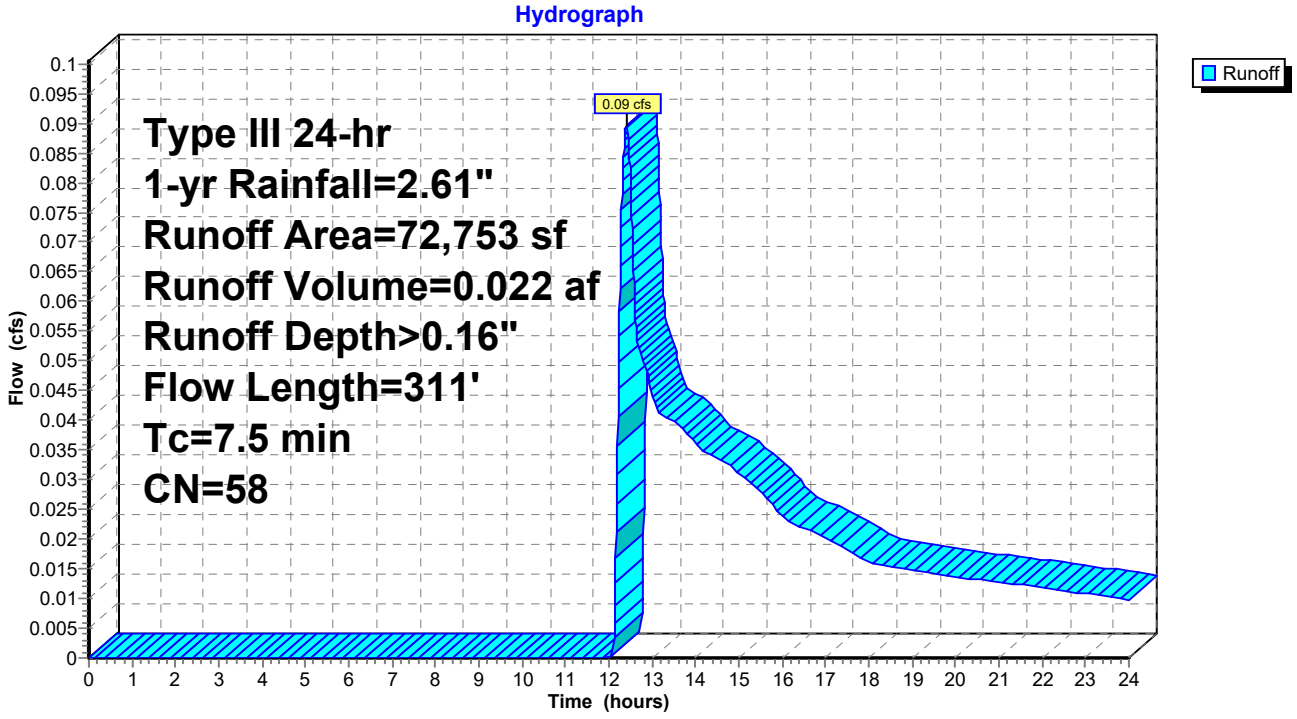
Runoff = 0.09 cfs @ 12.41 hrs, Volume= 0.022 af, Depth> 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
67,702	57	Woods/grass comb., Poor, HSG A
0	86	Woods/grass comb., Poor, HSG D
3,703	68	<50% Grass cover, Poor, HSG A
985	89	<50% Grass cover, Poor, HSG D
363	98	Paved parking, HSG D
72,753	58	Weighted Average
72,390		99.50% Pervious Area
363		0.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	21	0.2100	0.14		**Sheet Flow, 21' sheet woods** Woods: Light underbrush n= 0.400 P2= 3.17"
5.1	290	0.0360	0.95		**Shallow Concentrated Flow, 290' of shallow concentrated** Woodland Kv= 5.0 fps
7.5	311	Total			

Subcatchment ES2:



Summary for Subcatchment ES3:

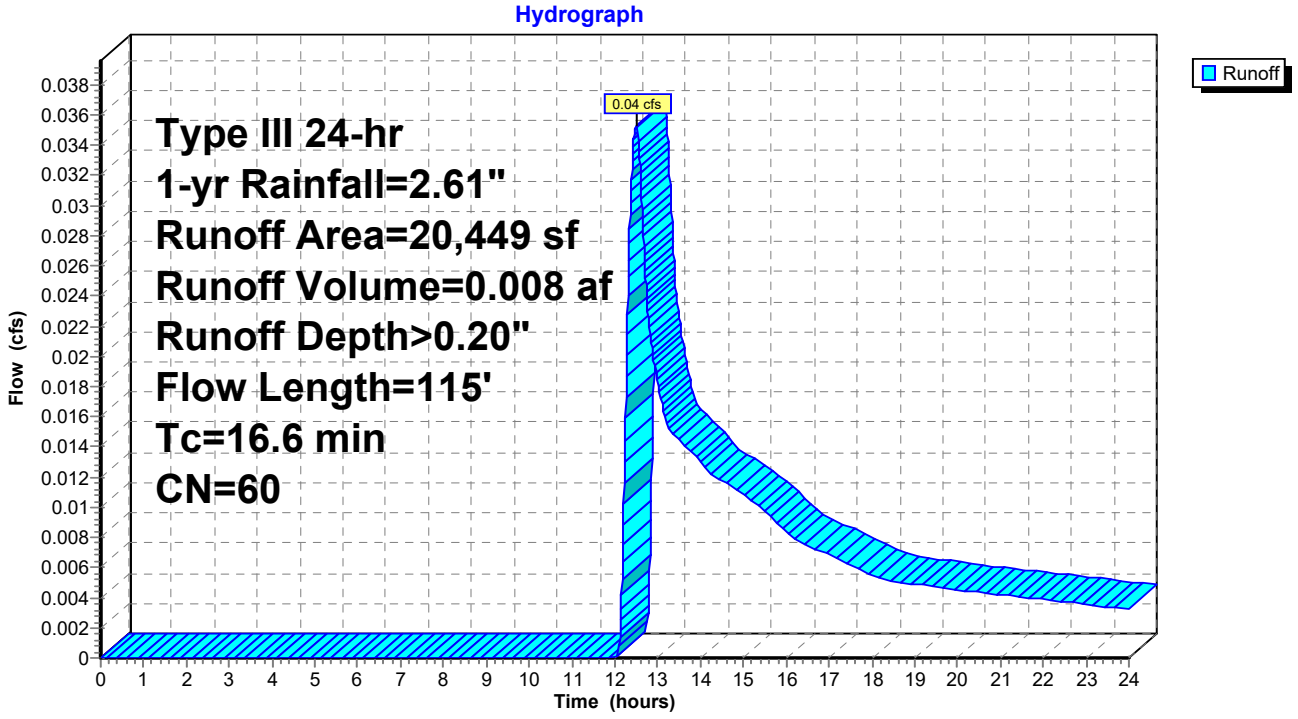
Runoff = 0.04 cfs @ 12.49 hrs, Volume= 0.008 af, Depth> 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
18,346	57	Woods/grass comb., Poor, HSG A
1,098	86	Woods/grass comb., Poor, HSG D
0	68	<50% Grass cover, Poor, HSG A
1,005	89	<50% Grass cover, Poor, HSG D
20,449	60	Weighted Average
20,449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	40	0.0350	0.12		**Sheet Flow, 40' sheet flow grass** Grass: Dense n= 0.240 P2= 3.17"
11.0	60	0.0390	0.09		**Sheet Flow, 60' sheet flow woods** Woods: Light underbrush n= 0.400 P2= 3.17"
0.1	15	0.1333	1.83		**Shallow Concentrated Flow, 15' shallow concentrated woods** Woodland Kv= 5.0 fps
16.6	115	Total			

Subcatchment ES3:

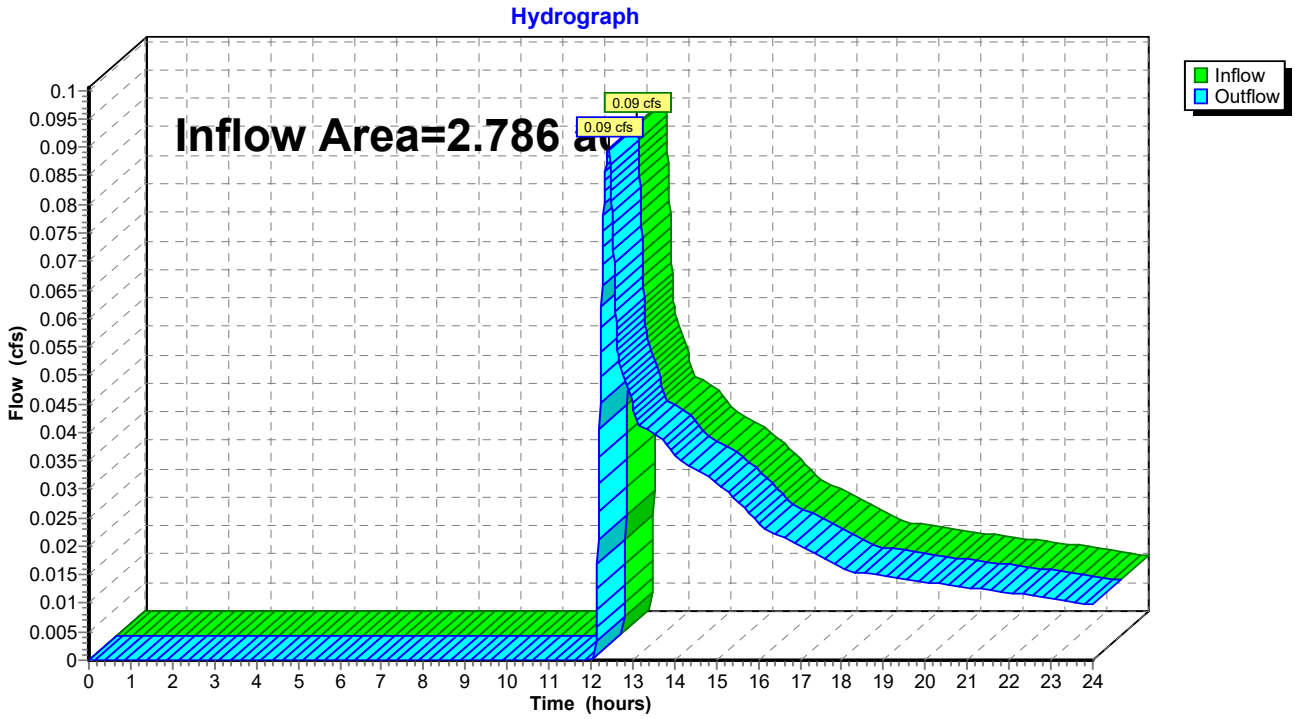


Summary for Reach AP1:

Inflow Area = 2.786 ac, 0.30% Impervious, Inflow Depth > 0.10" for 1-yr event
Inflow = 0.09 cfs @ 12.41 hrs, Volume= 0.022 af
Outflow = 0.09 cfs @ 12.41 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach AP1:



Summary for Pond 1P: EXISTING POND

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth > 0.16" for 1-yr event
Inflow = 0.03 cfs @ 12.43 hrs, Volume= 0.009 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 78.47' @ 24.00 hrs Surf.Area= 1,054 sf Storage= 375 cf
Flood Elev= 79.00' Surf.Area= 1,630 sf Storage= 1,090 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

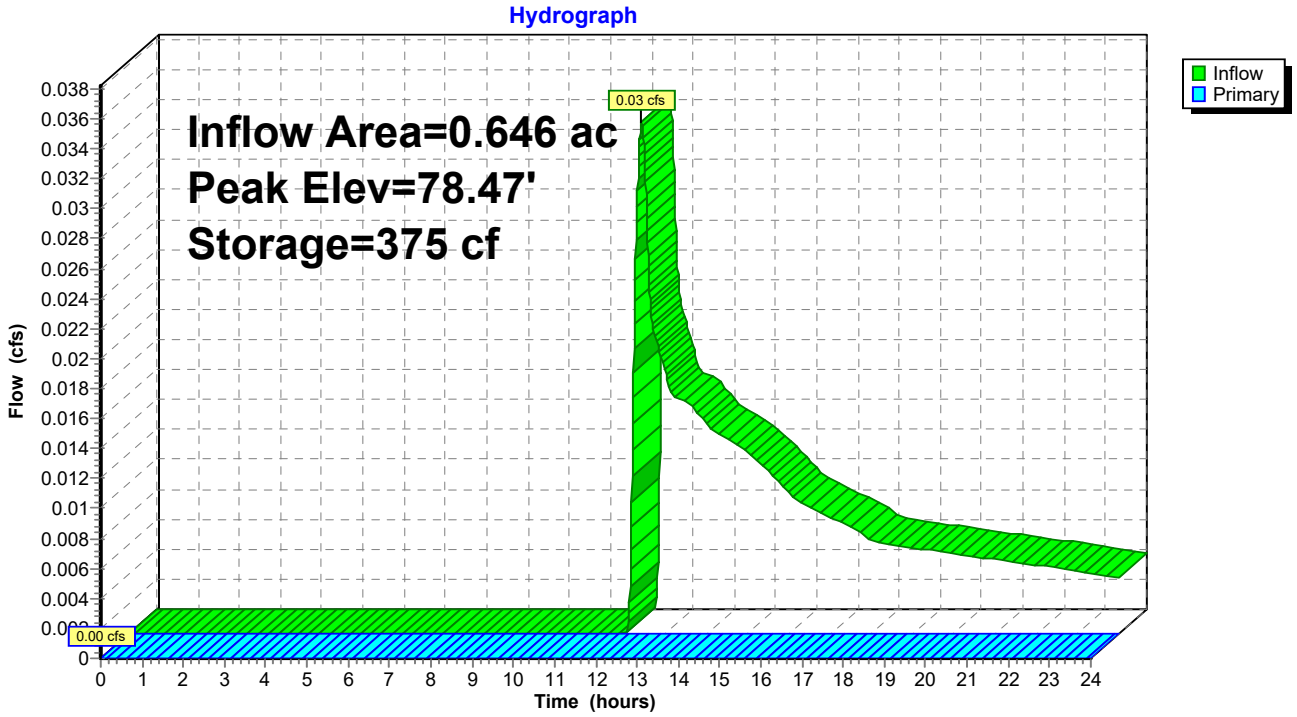
Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	1,090 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	550	0	0
79.00	1,630	1,090	1,090

Device	Routing	Invert	Outlet Devices
#1	Primary	78.50'	**35.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: EXISTING POND



Summary for Pond 2P: EXISTING POND

Inflow Area = 0.469 ac, 0.00% Impervious, Inflow Depth > 0.20" for 1-yr event
Inflow = 0.04 cfs @ 12.49 hrs, Volume= 0.008 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 78.66' @ 24.00 hrs Surf.Area= 764 sf Storage= 347 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

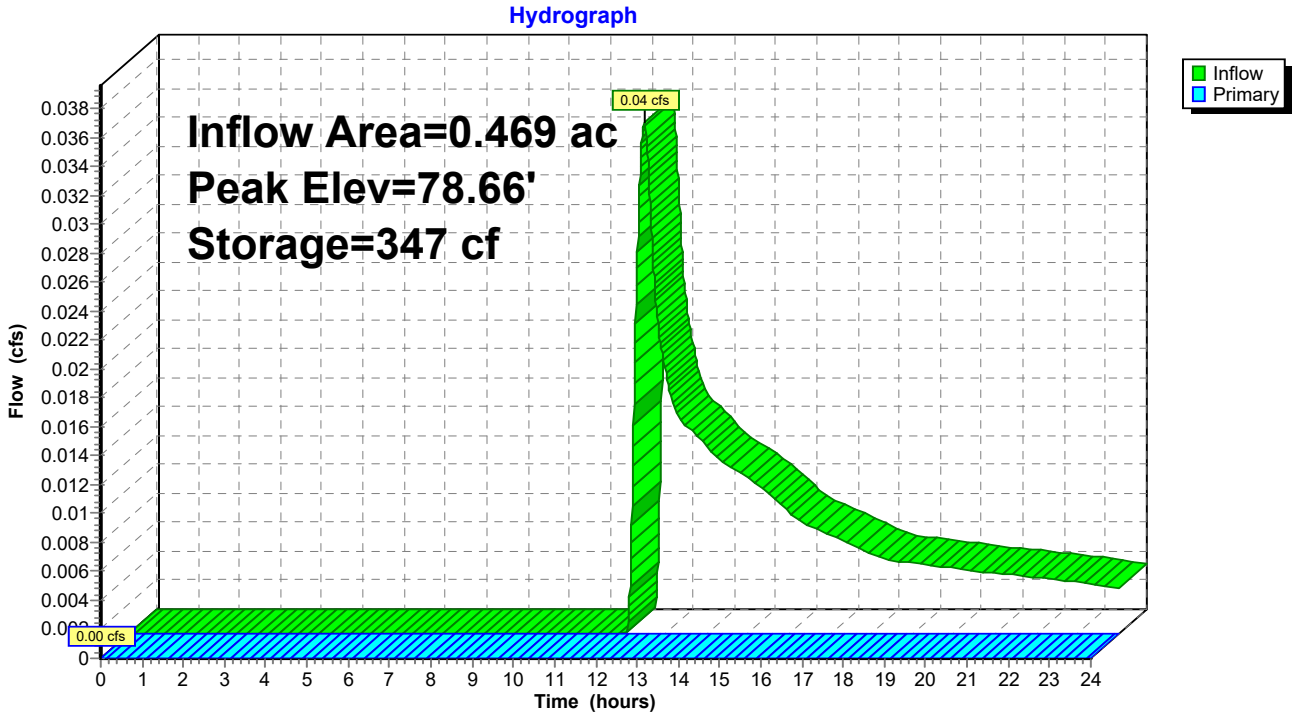
Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	5,855 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	288	0	0
79.00	1,010	649	649
80.00	2,071	1,541	2,190
81.00	5,260	3,666	5,855

Device	Routing	Invert	Outlet Devices
#1	Primary	80.90'	**40.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: EXISTING POND



Summary for Subcatchment ES1:

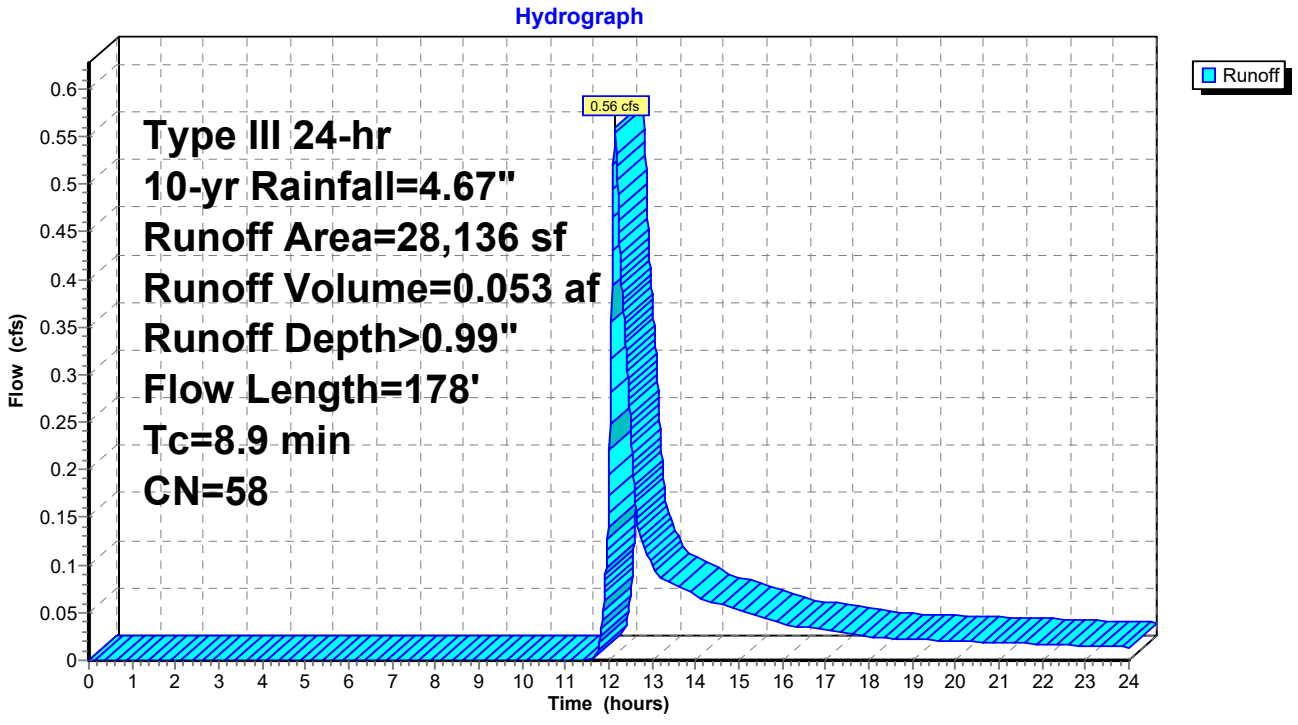
Runoff = 0.56 cfs @ 12.15 hrs, Volume= 0.053 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
24,695	57	Woods/grass comb., Poor, HSG A
3,441	68	<50% Grass cover, Poor, HSG A
28,136	58	Weighted Average
28,136		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.1000	0.19		**Sheet Flow, 50' sheet flow grass** Grass: Dense n= 0.240 P2= 3.17"
3.1	28	0.2000	0.15		**Sheet Flow, 28' sheet flow woods** Woods: Light underbrush n= 0.400 P2= 3.17"
1.5	100	0.0488	1.10		**Shallow Concentrated Flow, 100' shallow concentrated woods** Woodland Kv= 5.0 fps
8.9	178	Total			

Subcatchment ES1:



Summary for Subcatchment ES2:

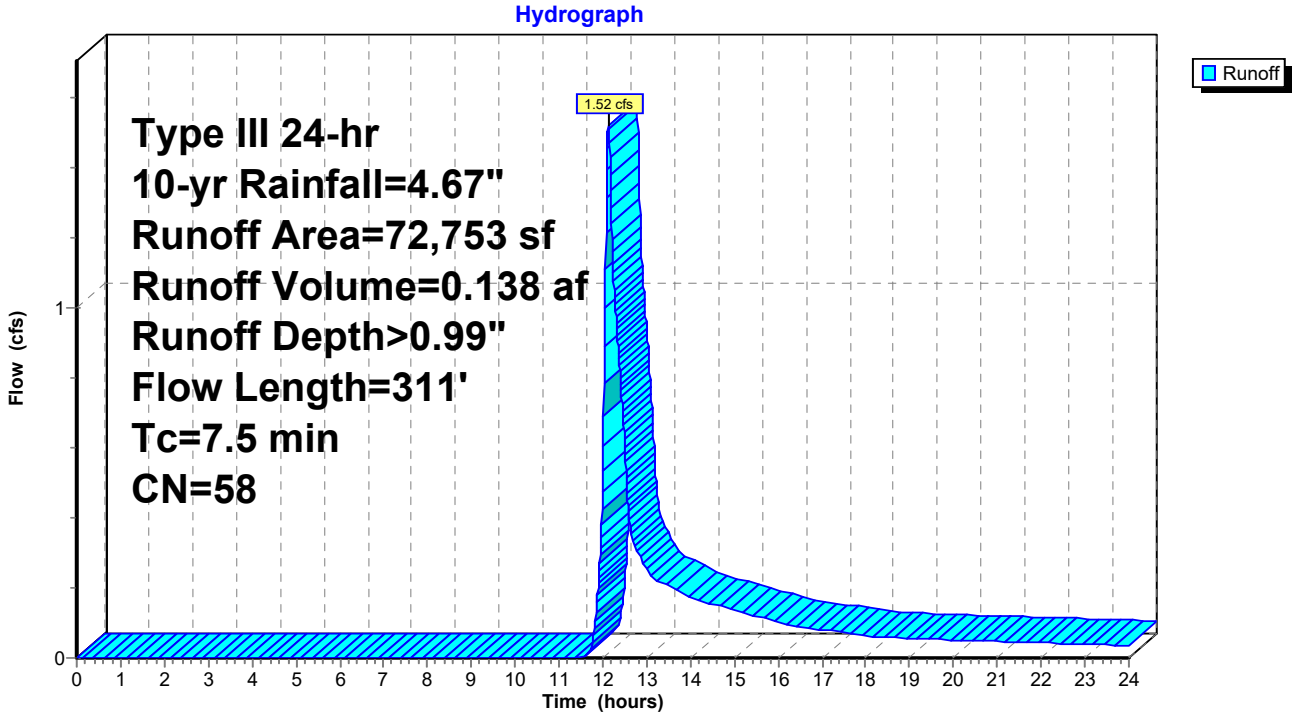
Runoff = 1.52 cfs @ 12.13 hrs, Volume= 0.138 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
67,702	57	Woods/grass comb., Poor, HSG A
0	86	Woods/grass comb., Poor, HSG D
3,703	68	<50% Grass cover, Poor, HSG A
985	89	<50% Grass cover, Poor, HSG D
363	98	Paved parking, HSG D
72,753	58	Weighted Average
72,390		99.50% Pervious Area
363		0.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	21	0.2100	0.14		**Sheet Flow, 21' sheet woods** Woods: Light underbrush n= 0.400 P2= 3.17"
5.1	290	0.0360	0.95		**Shallow Concentrated Flow, 290' of shallow concentrated** Woodland Kv= 5.0 fps
7.5	311	Total			

Subcatchment ES2:



Summary for Subcatchment ES3:

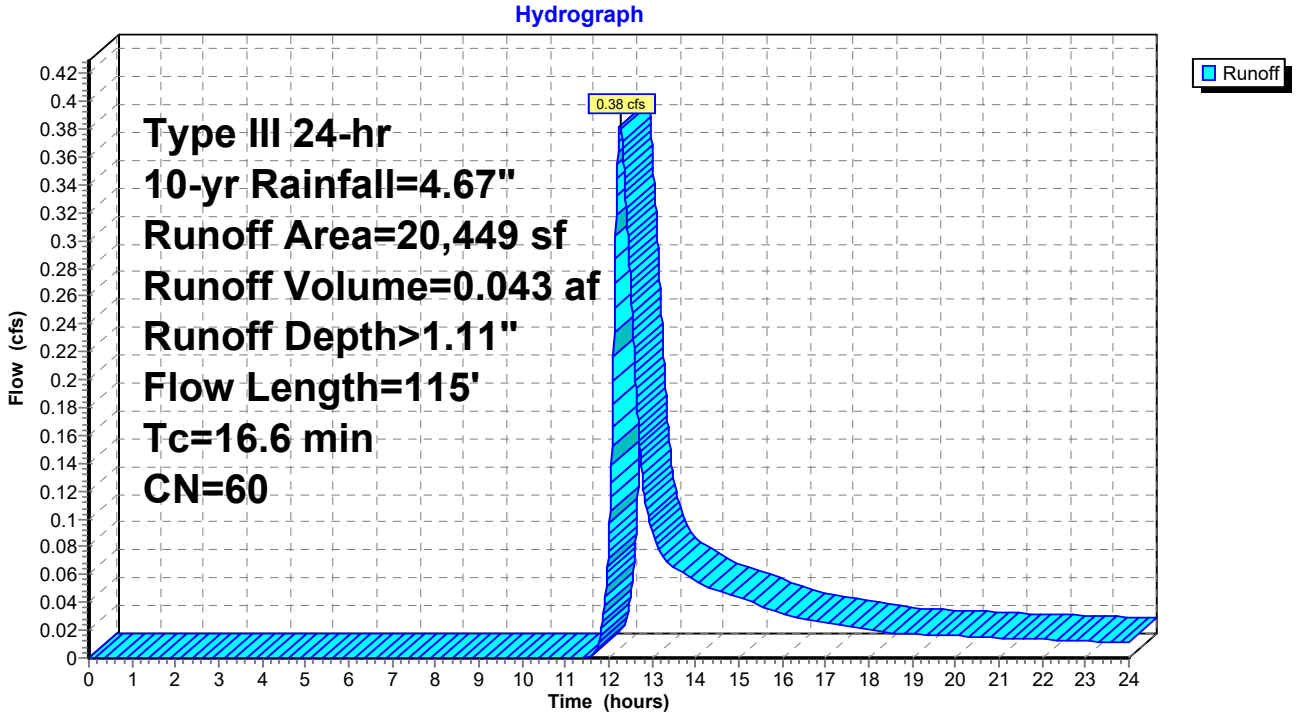
Runoff = 0.38 cfs @ 12.26 hrs, Volume= 0.043 af, Depth> 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
18,346	57	Woods/grass comb., Poor, HSG A
1,098	86	Woods/grass comb., Poor, HSG D
0	68	<50% Grass cover, Poor, HSG A
1,005	89	<50% Grass cover, Poor, HSG D
20,449	60	Weighted Average
20,449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	40	0.0350	0.12		**Sheet Flow, 40' sheet flow grass** Grass: Dense n= 0.240 P2= 3.17"
11.0	60	0.0390	0.09		**Sheet Flow, 60' sheet flow woods** Woods: Light underbrush n= 0.400 P2= 3.17"
0.1	15	0.1333	1.83		**Shallow Concentrated Flow, 15' shallow concentrated woods** Woodland Kv= 5.0 fps
16.6	115	Total			

Subcatchment ES3:

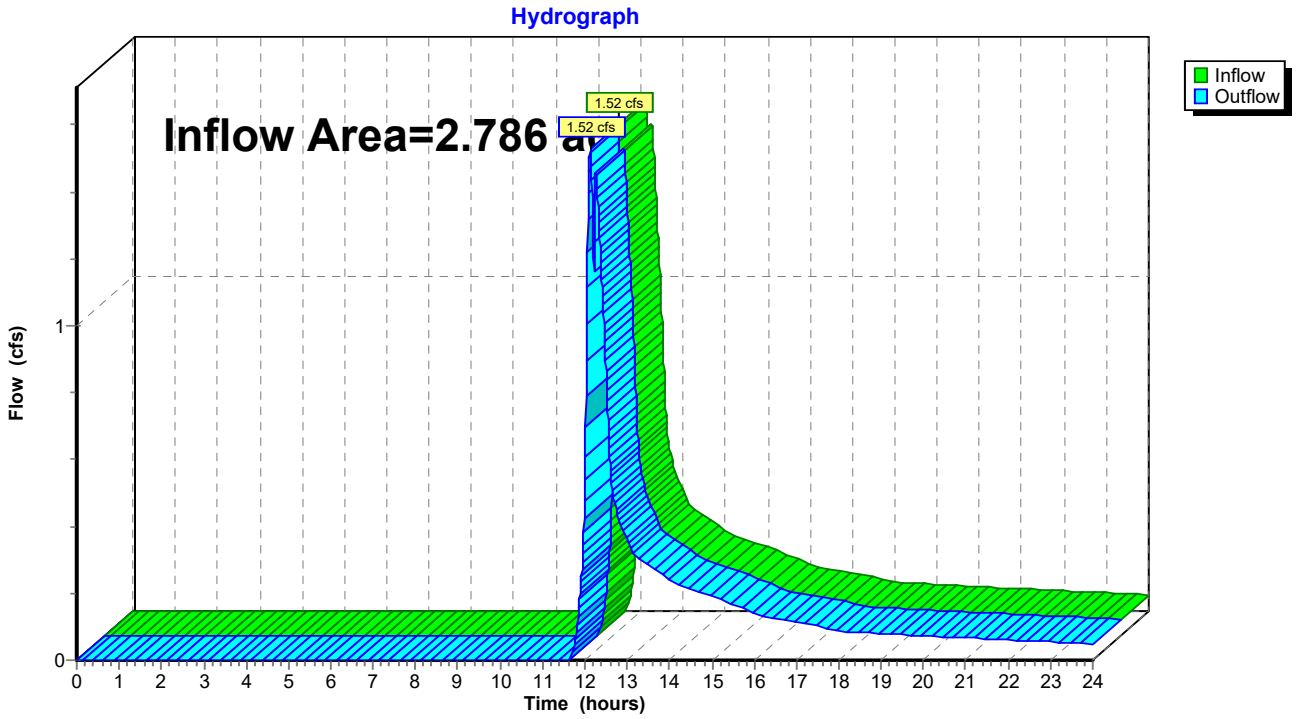


Summary for Reach AP1:

Inflow Area = 2.786 ac, 0.30% Impervious, Inflow Depth > 0.78" for 10-yr event
Inflow = 1.52 cfs @ 12.13 hrs, Volume= 0.182 af
Outflow = 1.52 cfs @ 12.13 hrs, Volume= 0.182 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach AP1:



Summary for Pond 1P: EXISTING POND

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth > 0.99" for 10-yr event
Inflow = 0.56 cfs @ 12.15 hrs, Volume= 0.053 af
Outflow = 0.42 cfs @ 12.27 hrs, Volume= 0.044 af, Atten= 25%, Lag= 7.6 min
Primary = 0.42 cfs @ 12.27 hrs, Volume= 0.044 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 78.52' @ 12.27 hrs Surf.Area= 1,116 sf Storage= 436 cf
Flood Elev= 79.00' Surf.Area= 1,630 sf Storage= 1,090 cf

Plug-Flow detention time= 112.2 min calculated for 0.044 af (82% of inflow)
Center-of-Mass det. time= 36.3 min (925.1 - 888.8)

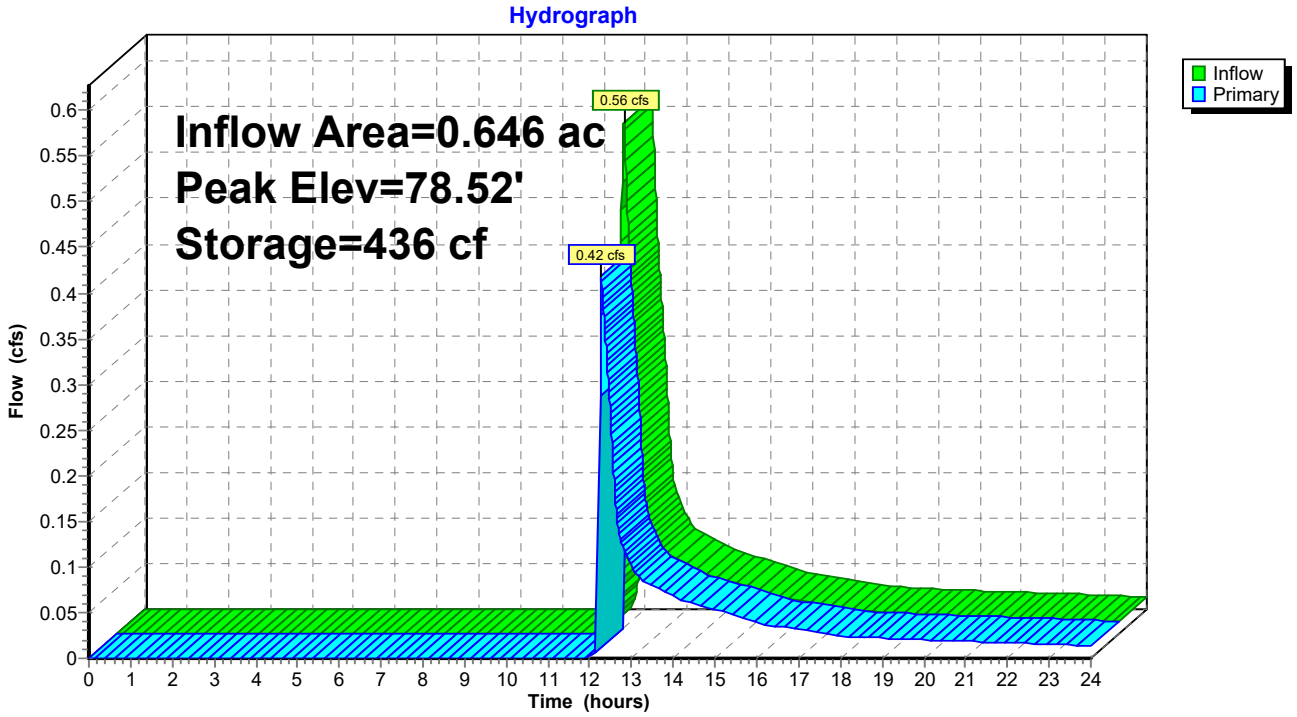
Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	1,090 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	550	0	0
79.00	1,630	1,090	1,090

Device	Routing	Invert	Outlet Devices
#1	Primary	78.50'	**35.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.42 cfs @ 12.27 hrs HW=78.52' TW=0.00' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.42 cfs @ 0.50 fps)

Pond 1P: EXISTING POND



Summary for Pond 2P: EXISTING POND

Inflow Area = 0.469 ac, 0.00% Impervious, Inflow Depth > 1.11" for 10-yr event
Inflow = 0.38 cfs @ 12.26 hrs, Volume= 0.043 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 79.85' @ 24.00 hrs Surf.Area= 1,910 sf Storage= 1,887 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

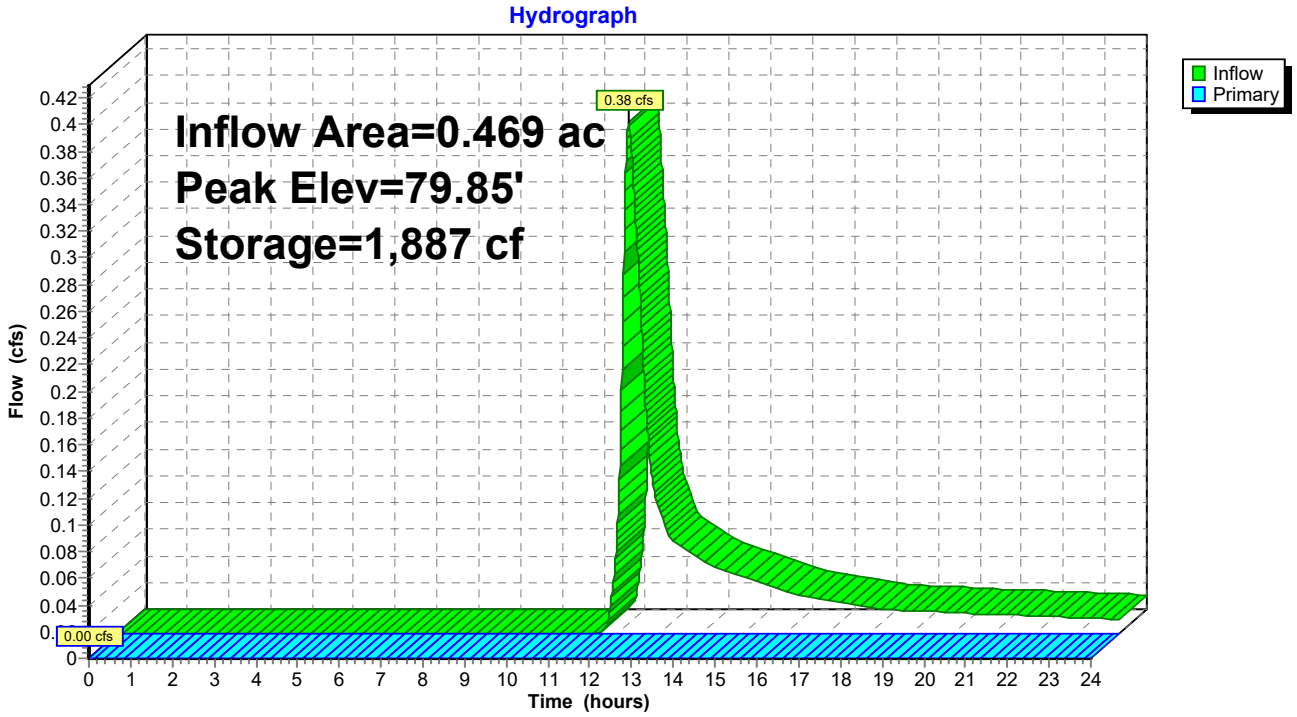
Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	5,855 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	288	0	0
79.00	1,010	649	649
80.00	2,071	1,541	2,190
81.00	5,260	3,666	5,855

Device	Routing	Invert	Outlet Devices
#1	Primary	80.90'	**40.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' TW=0.00' (Dynamic Tailwater)
1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 2P: EXISTING POND



Summary for Subcatchment ES1:

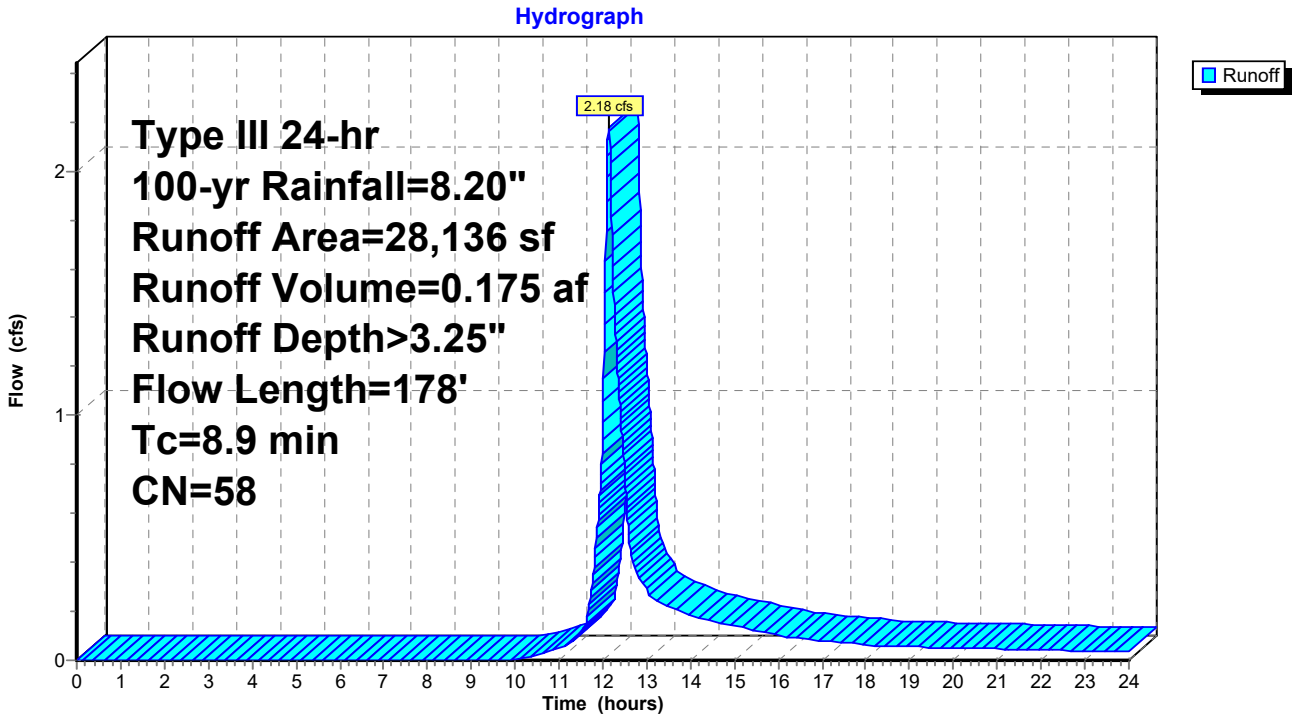
Runoff = 2.18 cfs @ 12.13 hrs, Volume= 0.175 af, Depth> 3.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
24,695	57	Woods/grass comb., Poor, HSG A
3,441	68	<50% Grass cover, Poor, HSG A
28,136	58	Weighted Average
28,136		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.1000	0.19		**Sheet Flow, 50' sheet flow grass** Grass: Dense n= 0.240 P2= 3.17"
3.1	28	0.2000	0.15		**Sheet Flow, 28' sheet flow woods** Woods: Light underbrush n= 0.400 P2= 3.17"
1.5	100	0.0488	1.10		**Shallow Concentrated Flow, 100' shallow concentrated woods** Woodland Kv= 5.0 fps
8.9	178	Total			

Subcatchment ES1:



Summary for Subcatchment ES2:

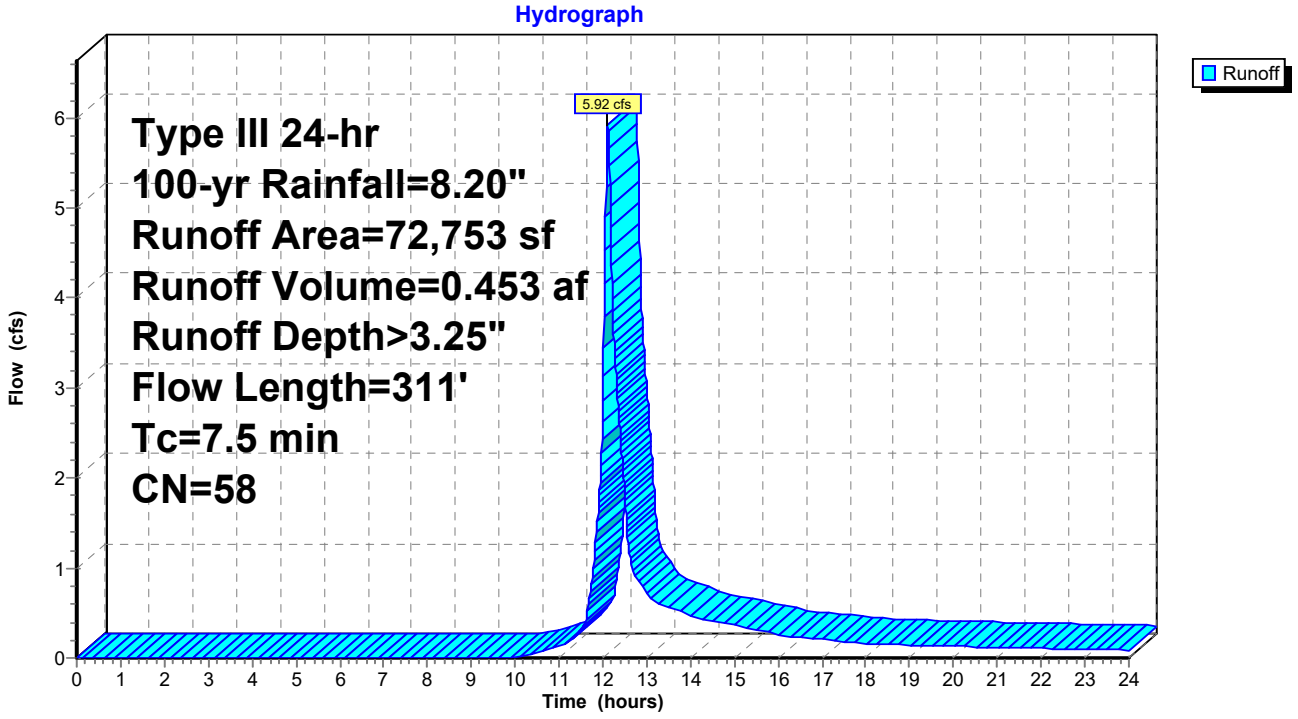
Runoff = 5.92 cfs @ 12.11 hrs, Volume= 0.453 af, Depth> 3.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
67,702	57	Woods/grass comb., Poor, HSG A
0	86	Woods/grass comb., Poor, HSG D
3,703	68	<50% Grass cover, Poor, HSG A
985	89	<50% Grass cover, Poor, HSG D
363	98	Paved parking, HSG D
72,753	58	Weighted Average
72,390		99.50% Pervious Area
363		0.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	21	0.2100	0.14		**Sheet Flow, 21' sheet woods** Woods: Light underbrush n= 0.400 P2= 3.17"
5.1	290	0.0360	0.95		**Shallow Concentrated Flow, 290' of shallow concentrated** Woodland Kv= 5.0 fps
7.5	311	Total			

Subcatchment ES2:



Summary for Subcatchment ES3:

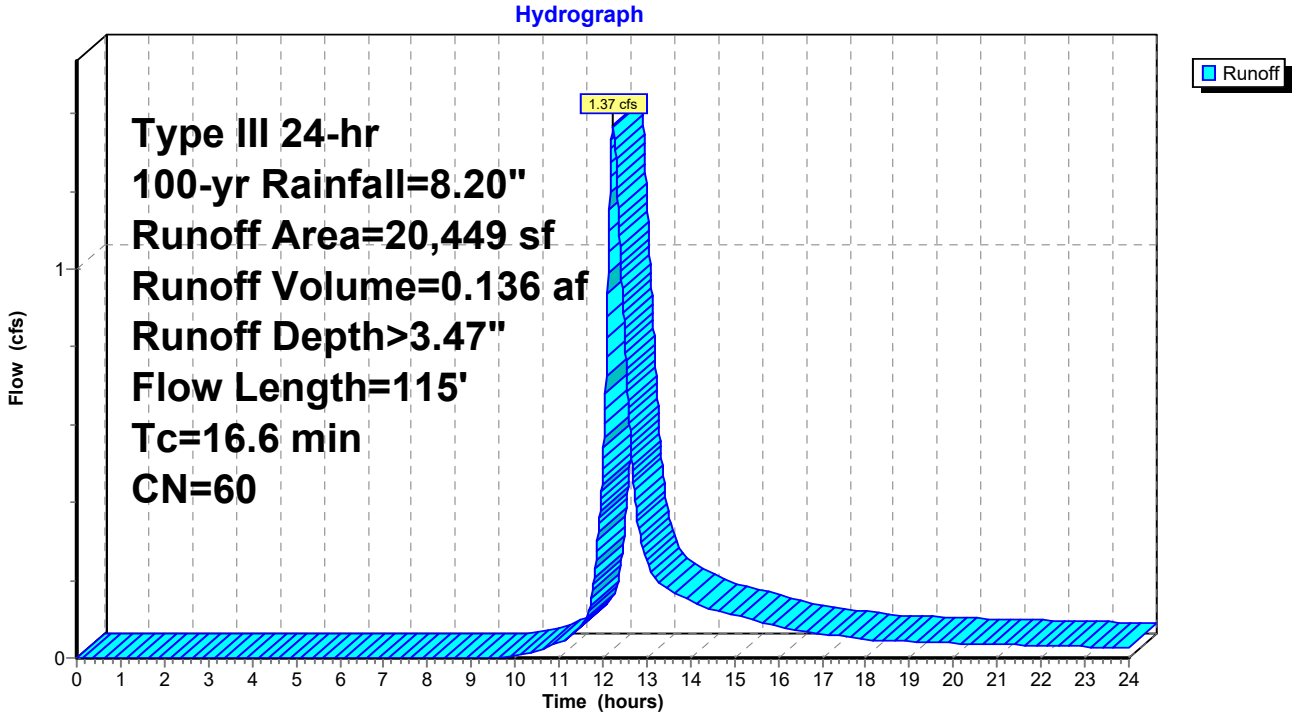
Runoff = 1.37 cfs @ 12.23 hrs, Volume= 0.136 af, Depth> 3.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
18,346	57	Woods/grass comb., Poor, HSG A
1,098	86	Woods/grass comb., Poor, HSG D
0	68	<50% Grass cover, Poor, HSG A
1,005	89	<50% Grass cover, Poor, HSG D
20,449	60	Weighted Average
20,449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	40	0.0350	0.12		**Sheet Flow, 40' sheet flow grass** Grass: Dense n= 0.240 P2= 3.17"
11.0	60	0.0390	0.09		**Sheet Flow, 60' sheet flow woods** Woods: Light underbrush n= 0.400 P2= 3.17"
0.1	15	0.1333	1.83		**Shallow Concentrated Flow, 15' shallow concentrated woods** Woodland Kv= 5.0 fps
16.6	115	Total			

Subcatchment ES3:

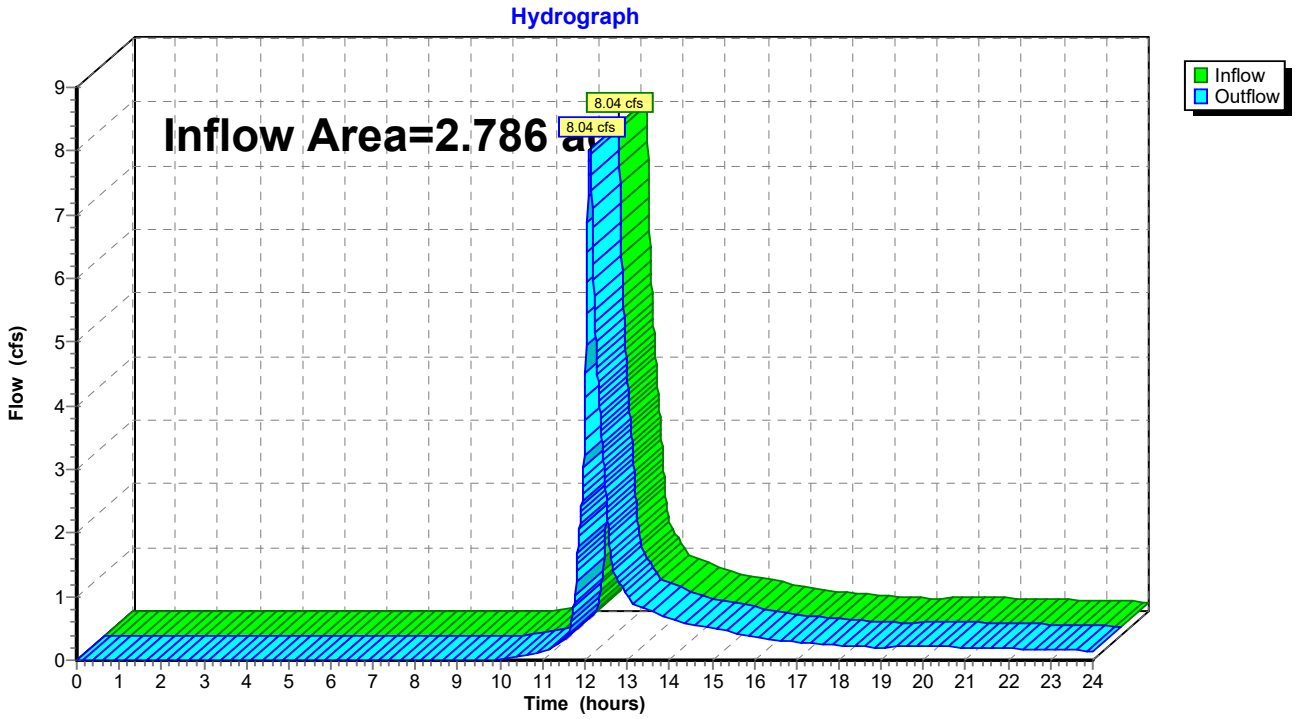


Summary for Reach AP1:

Inflow Area = 2.786 ac, 0.30% Impervious, Inflow Depth > 2.72" for 100-yr event
Inflow = 8.04 cfs @ 12.12 hrs, Volume= 0.631 af
Outflow = 8.04 cfs @ 12.12 hrs, Volume= 0.631 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach AP1:



Summary for Pond 1P: EXISTING POND

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth > 3.25" for 100-yr event
Inflow = 2.18 cfs @ 12.13 hrs, Volume= 0.175 af
Outflow = 2.18 cfs @ 12.14 hrs, Volume= 0.165 af, Atten= 0%, Lag= 0.4 min
Primary = 2.18 cfs @ 12.14 hrs, Volume= 0.165 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 78.57' @ 12.14 hrs Surf.Area= 1,167 sf Storage= 490 cf
Flood Elev= 79.00' Surf.Area= 1,630 sf Storage= 1,090 cf

Plug-Flow detention time= 39.1 min calculated for 0.165 af (95% of inflow)
Center-of-Mass det. time= 10.5 min (861.2 - 850.7)

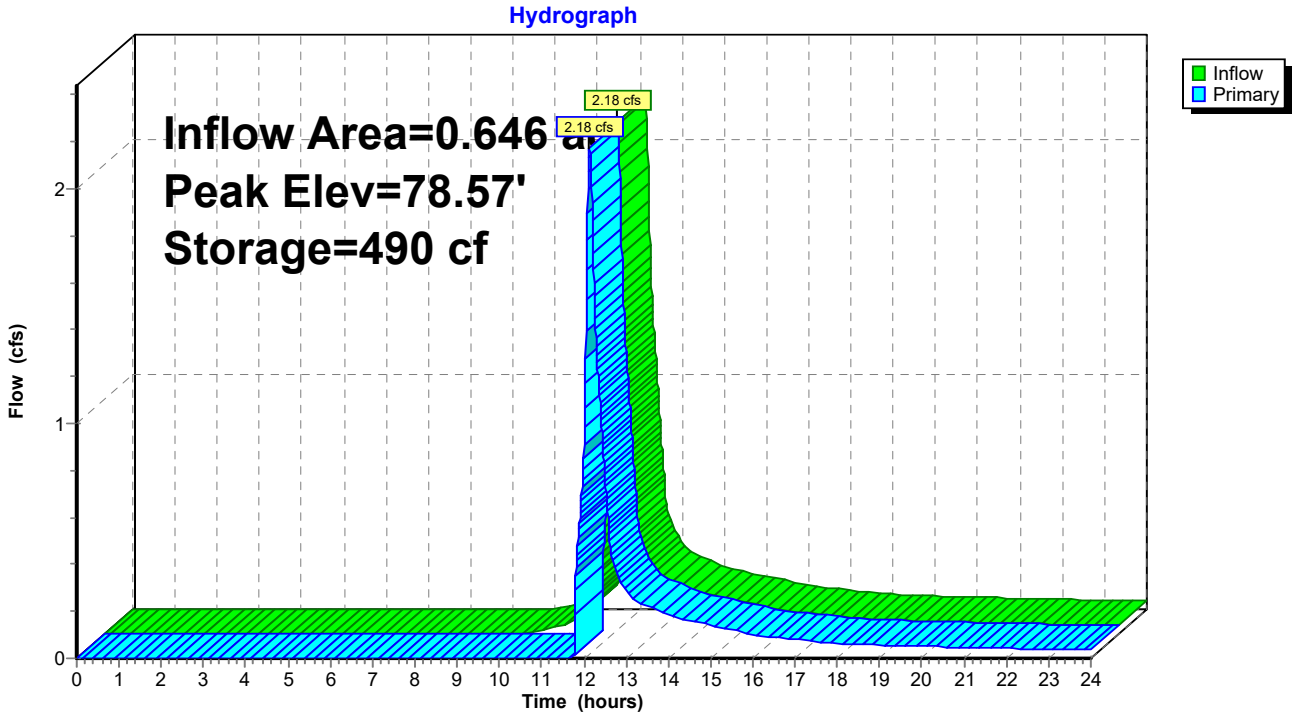
Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	1,090 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	550	0	0
79.00	1,630	1,090	1,090

Device	Routing	Invert	Outlet Devices
#1	Primary	78.50'	**35.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=2.17 cfs @ 12.14 hrs HW=78.57' TW=0.00' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** (Weir Controls 2.17 cfs @ 0.87 fps)

Pond 1P: EXISTING POND



Summary for Pond 2P: EXISTING POND

Inflow Area = 0.469 ac, 0.00% Impervious, Inflow Depth > 3.47" for 100-yr event
Inflow = 1.37 cfs @ 12.23 hrs, Volume= 0.136 af
Outflow = 0.04 cfs @ 19.81 hrs, Volume= 0.013 af, Atten= 97%, Lag= 454.9 min
Primary = 0.04 cfs @ 19.81 hrs, Volume= 0.013 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 80.90' @ 19.81 hrs Surf.Area= 4,955 sf Storage= 5,367 cf

Plug-Flow detention time= 599.2 min calculated for 0.013 af (9% of inflow)
Center-of-Mass det. time= 440.2 min (1,292.6 - 852.3)

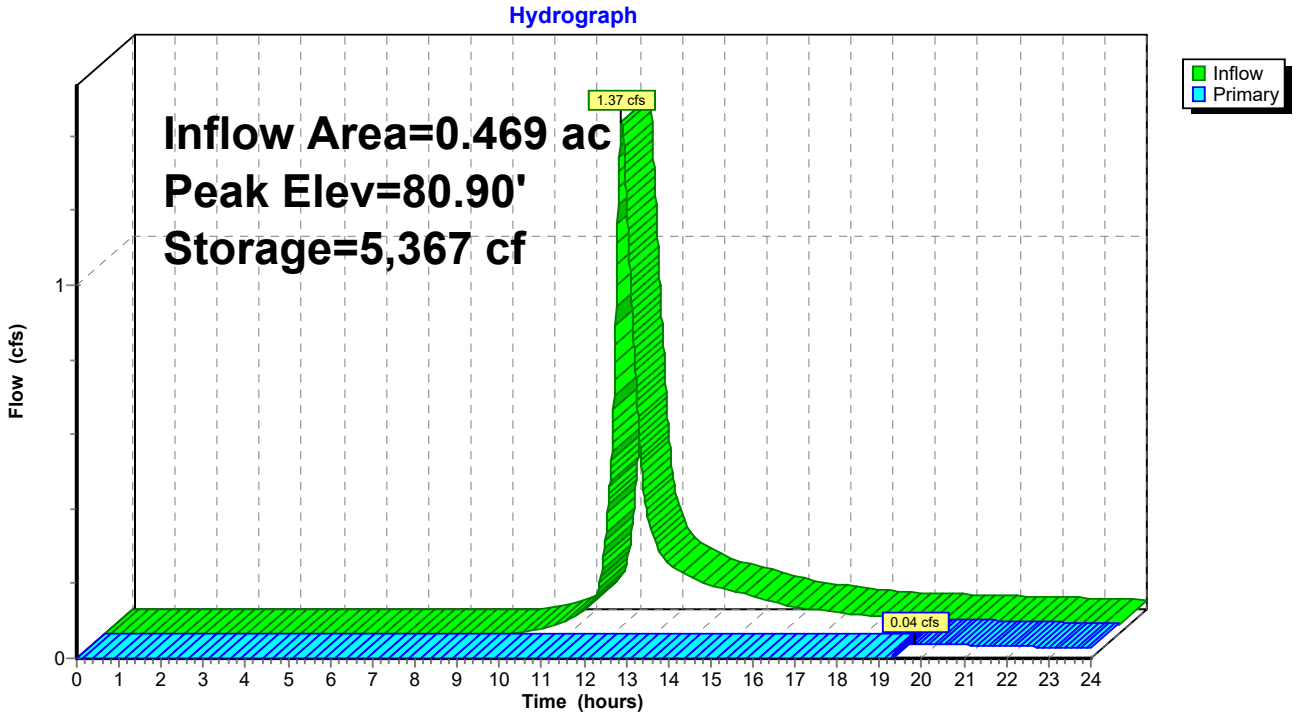
Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	5,855 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	288	0	0
79.00	1,010	649	649
80.00	2,071	1,541	2,190
81.00	5,260	3,666	5,855

Device	Routing	Invert	Outlet Devices
#1	Primary	80.90'	**40.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.04 cfs @ 19.81 hrs HW=80.90' TW=0.00' (Dynamic Tailwater)
1=Sharp-Crested Rectangular Weir (Weir Controls 0.04 cfs @ 0.22 fps)

Pond 2P: EXISTING POND



APPENDIX E:
POST DEVELOPMENT STORMWATER MODELING

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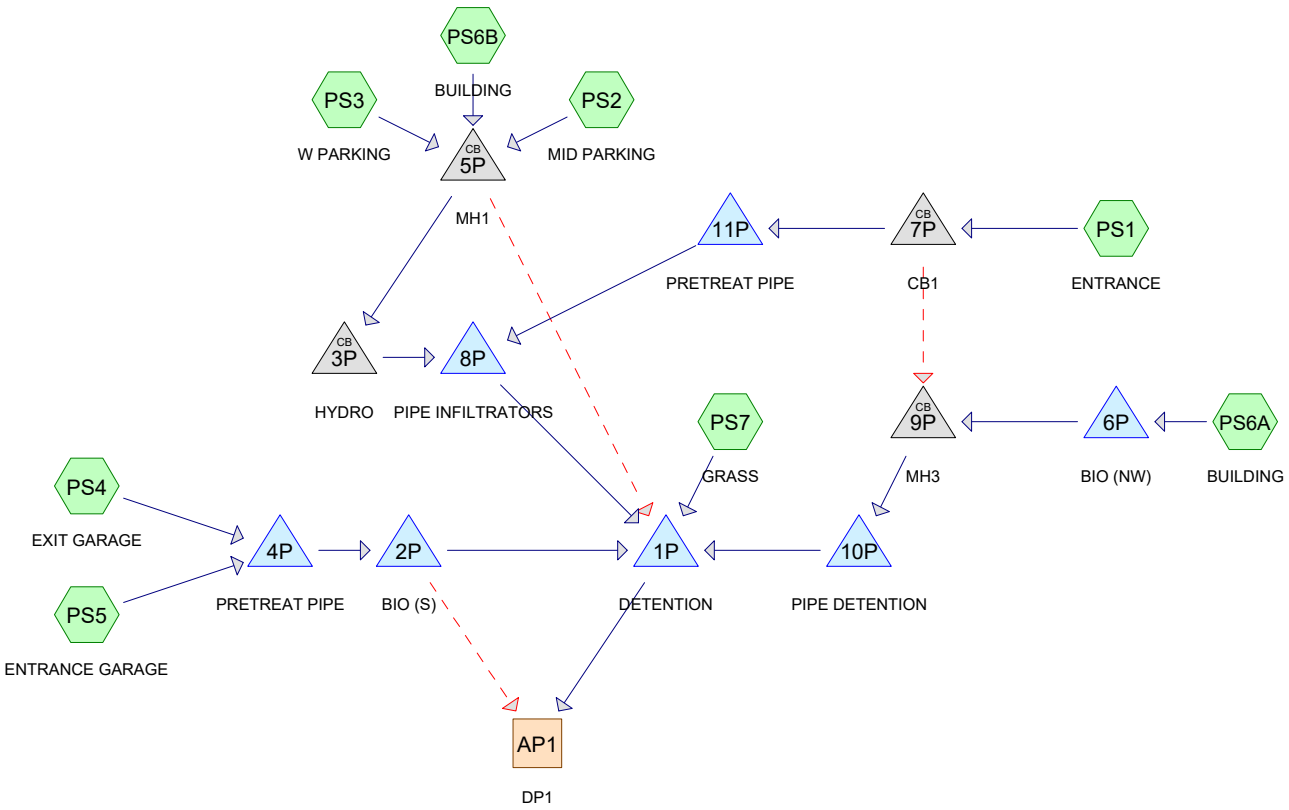


Subcat Reach Pond Link

Routing Diagram for HydroCAD_PostDev_2222201
Prepared by The Chazen Companies, Printed 11/29/2022
HydroCAD® 10.00-21 s/n 00927 © 2018 HydroCAD Software Solutions LLC

Summary for Subcatchment PS1: ENTRANCE

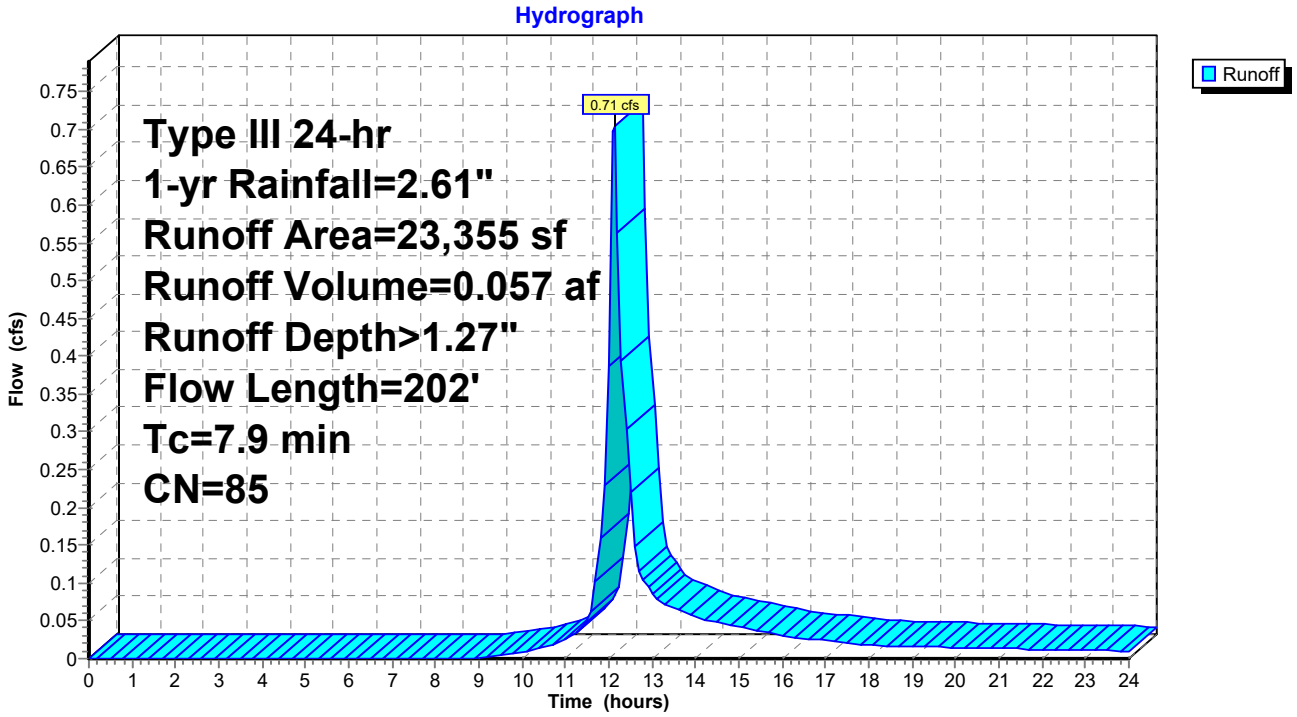
Runoff = 0.71 cfs @ 12.12 hrs, Volume= 0.057 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
17,360	98	Paved parking, HSG A
5,995	49	50-75% Grass cover, Fair, HSG A
23,355	85	Weighted Average
5,995		25.67% Pervious Area
17,360		74.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.0400	0.22		**Sheet Flow, 100' sheet flow grass** Grass: Short n= 0.150 P2= 3.17"
0.4	102	0.0350	3.80		**Shallow Concentrated Flow, 102' Shallow concentrated paveme** Paved Kv= 20.3 fps
7.9	202	Total			

Subcatchment PS1: ENTRANCE



Summary for Subcatchment PS2: MID PARKING

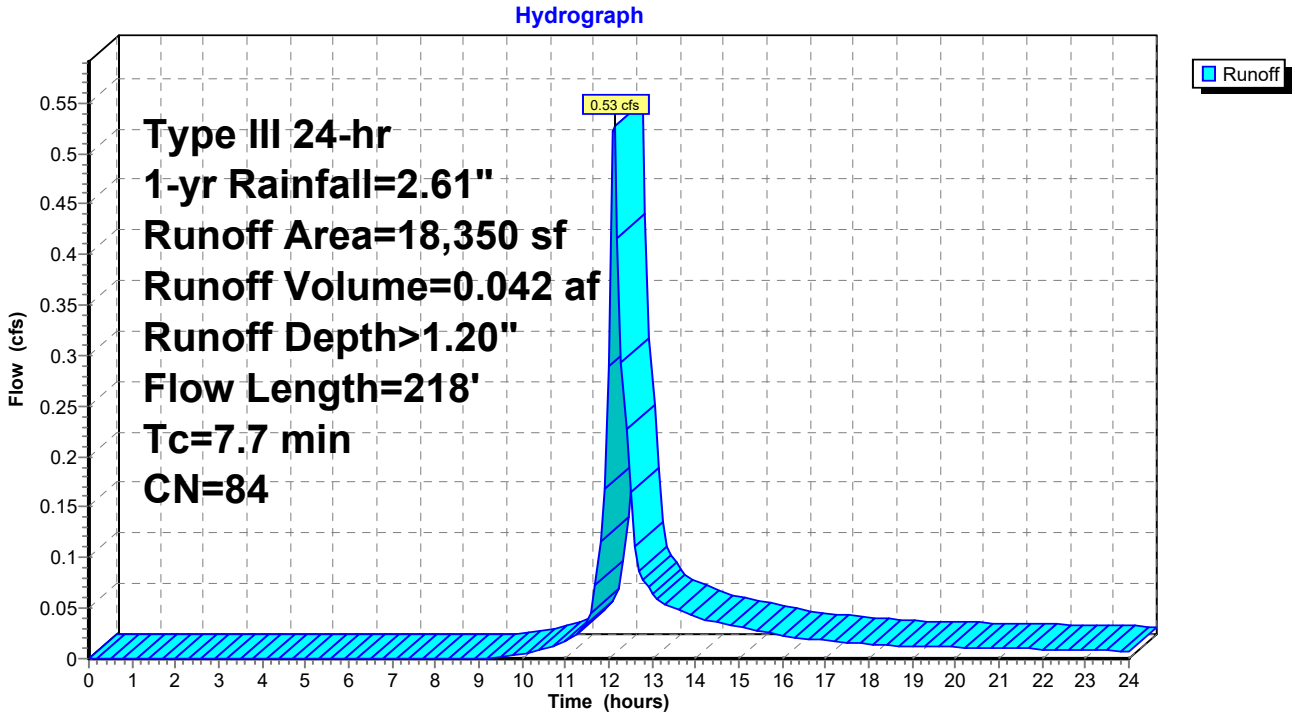
Runoff = 0.53 cfs @ 12.12 hrs, Volume= 0.042 af, Depth> 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
12,975	98	Paved parking, HSG A
5,375	49	50-75% Grass cover, Fair, HSG A
18,350	84	Weighted Average
5,375		29.29% Pervious Area
12,975		70.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.0450	0.23		**Sheet Flow, 100' sheet flow grass** Grass: Short n= 0.150 P2= 3.17"
0.6	118	0.0260	3.27		**Shallow Concentrated Flow, 118' paved shallow concentration** Paved Kv= 20.3 fps
7.7	218	Total			

Subcatchment PS2: MID PARKING



Summary for Subcatchment PS3: W PARKING

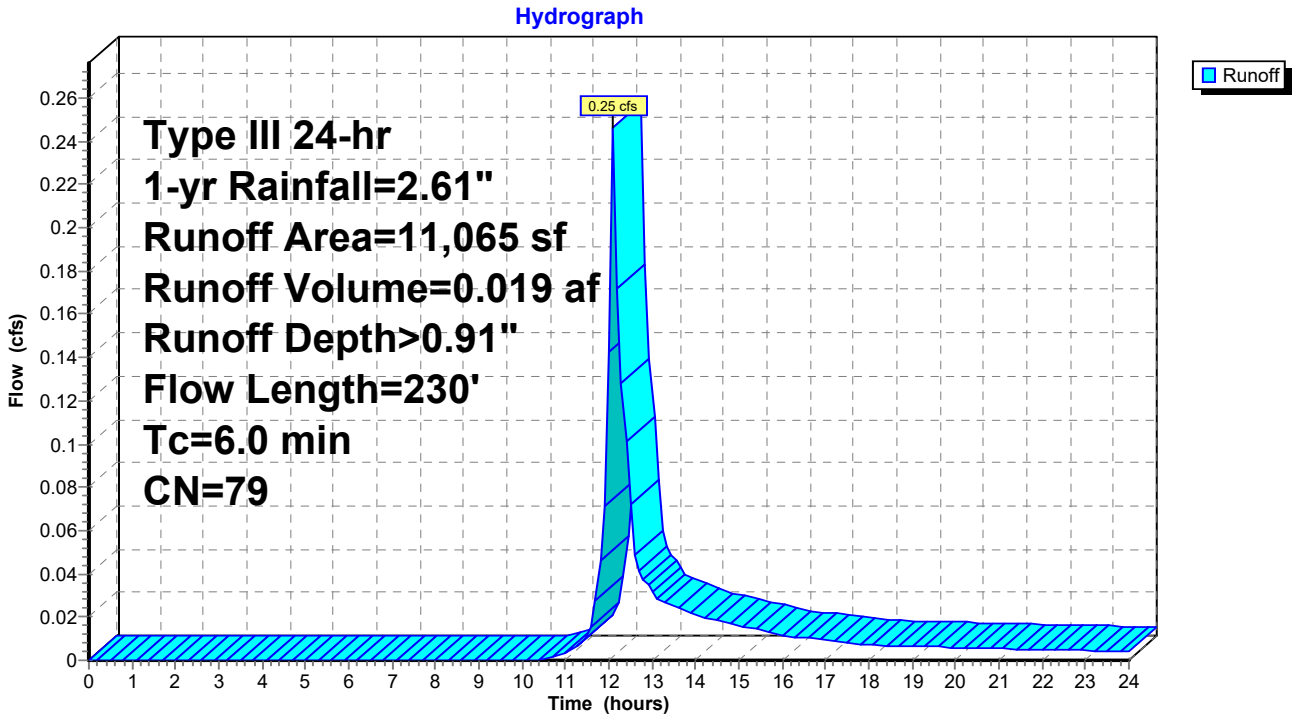
Runoff = 0.25 cfs @ 12.11 hrs, Volume= 0.019 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
6,240	98	Paved parking, HSG A
1,755	49	50-75% Grass cover, Fair, HSG A
3,070	57	Woods/grass comb., Poor, HSG A
11,065	79	Weighted Average
4,825		43.61% Pervious Area
6,240		56.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	63	0.1349	0.33		**Sheet Flow, 63' grass sheet flow** Grass: Short n= 0.150 P2= 3.17"
0.9	167	0.0239	3.14		**Shallow Concentrated Flow, 167' paved** Paved Kv= 20.3 fps
4.1	230	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PS3: W PARKING



Summary for Subcatchment PS4: EXIT GARAGE

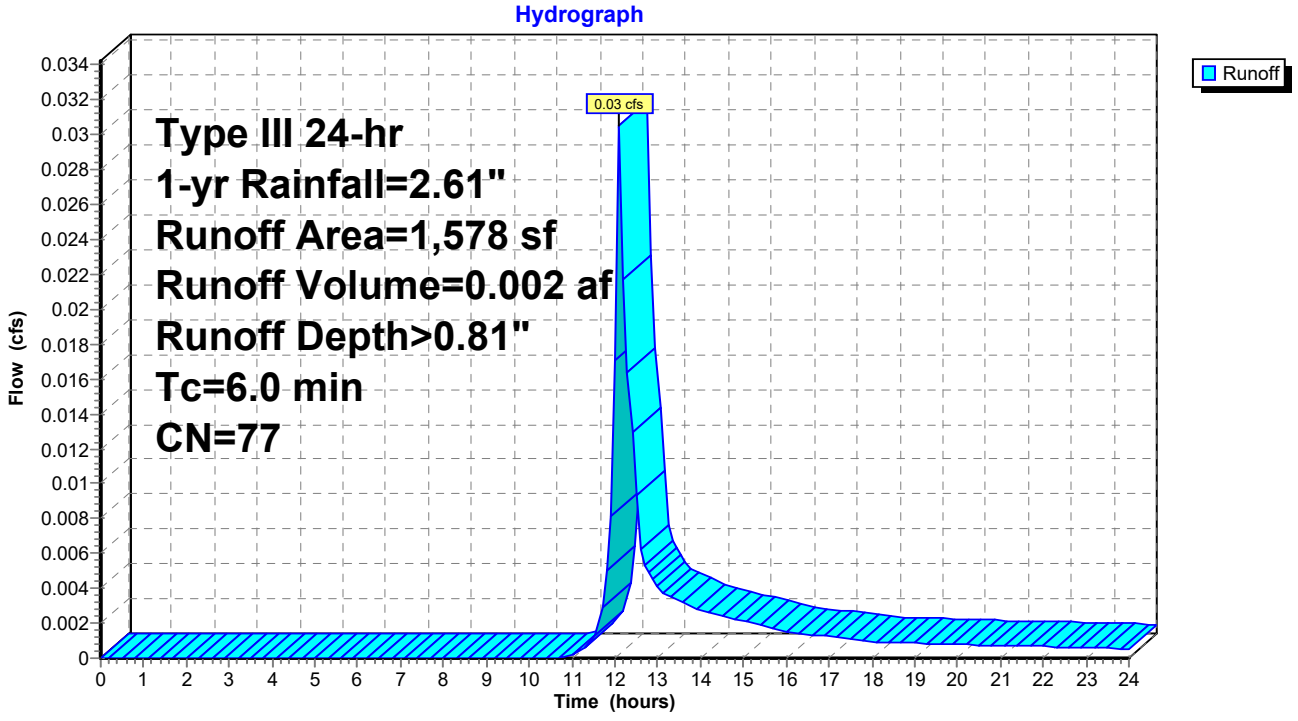
Runoff = 0.03 cfs @ 12.11 hrs, Volume= 0.002 af, Depth> 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
892	98	Paved parking, HSG A
686	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
1,578	77	Weighted Average
686		43.47% Pervious Area
892		56.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Subcatchment PS4: EXIT GARAGE



Summary for Subcatchment PS5: ENTRANCE GARAGE

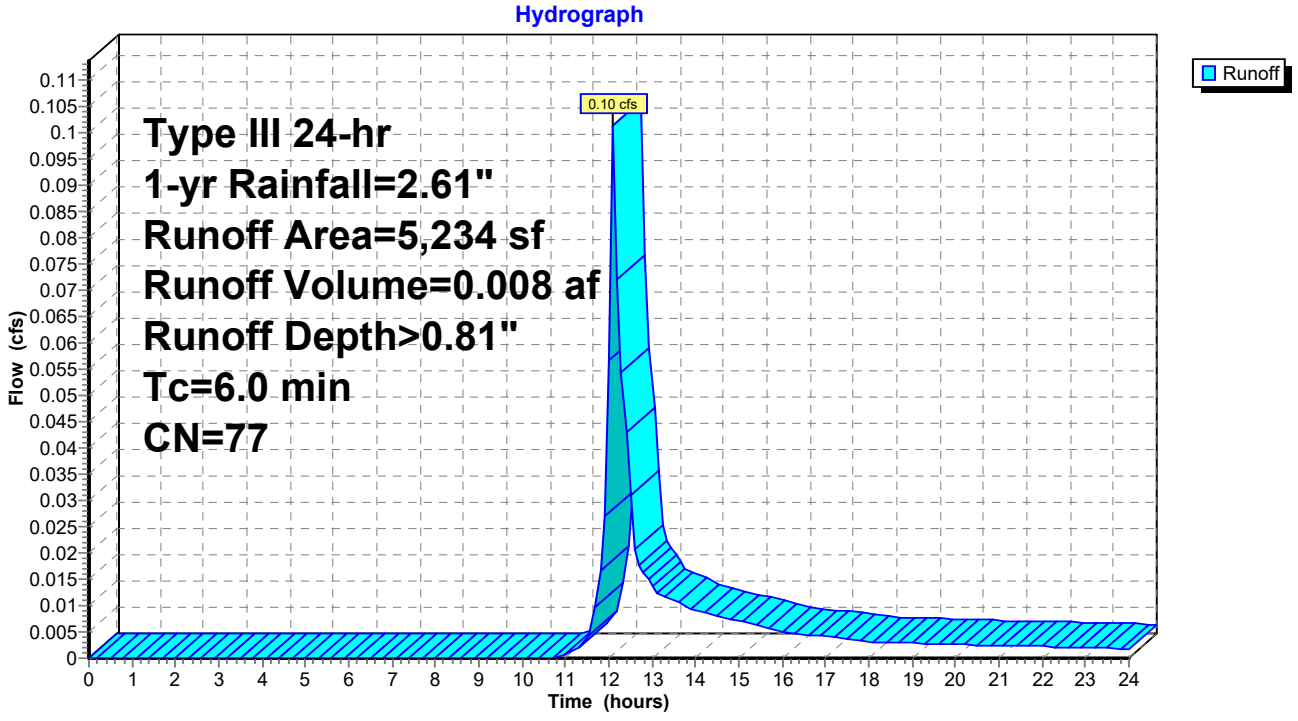
Runoff = 0.10 cfs @ 12.11 hrs, Volume= 0.008 af, Depth> 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
2,942	98	Paved parking, HSG A
2,292	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
5,234	77	Weighted Average
2,292		43.79% Pervious Area
2,942		56.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment PS5: ENTRANCE GARAGE



Summary for Subcatchment PS6A: BUILDING

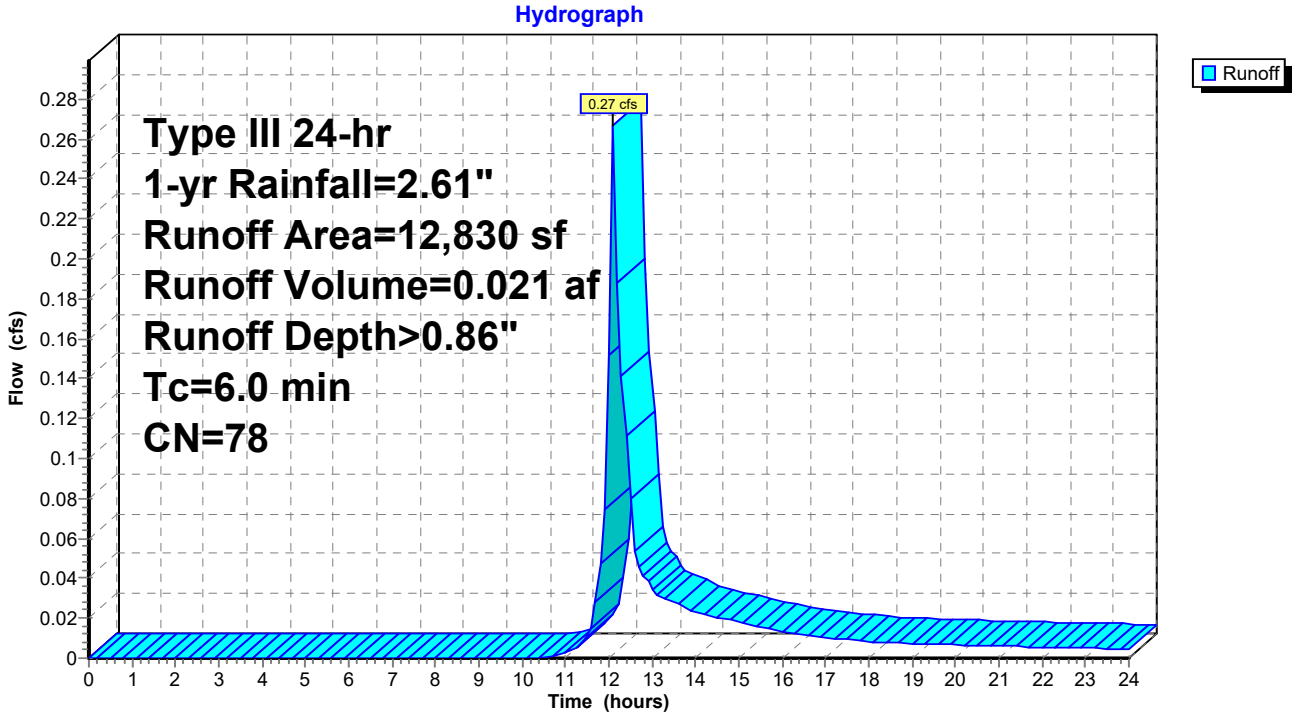
Runoff = 0.27 cfs @ 12.11 hrs, Volume= 0.021 af, Depth> 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
7,572	98	Paved parking, HSG A
5,258	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
12,830	78	Weighted Average
5,258		40.98% Pervious Area
7,572		59.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, roof**

Subcatchment PS6A: BUILDING



Summary for Subcatchment PS6B: BUILDING

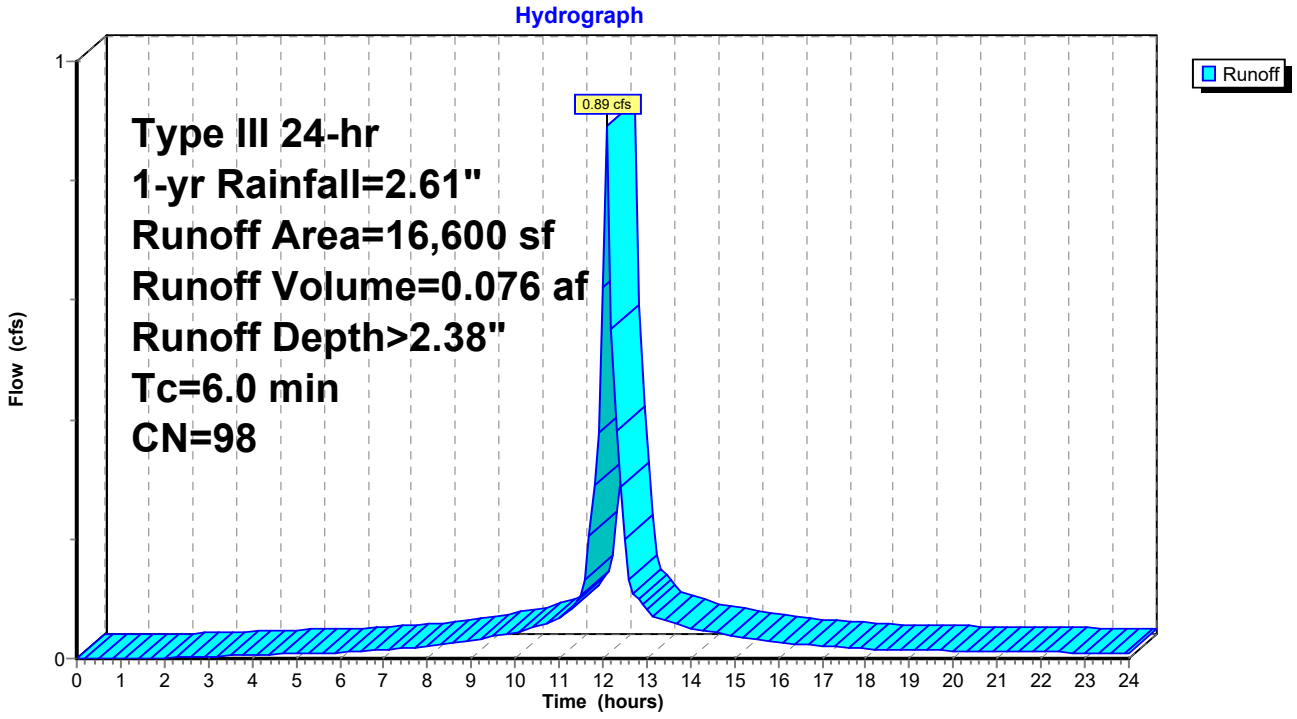
Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.076 af, Depth> 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
16,600	98	Paved parking, HSG A
0	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
16,600	98	Weighted Average
16,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, roof**

Subcatchment PS6B: BUILDING



Summary for Subcatchment PS7: GRASS

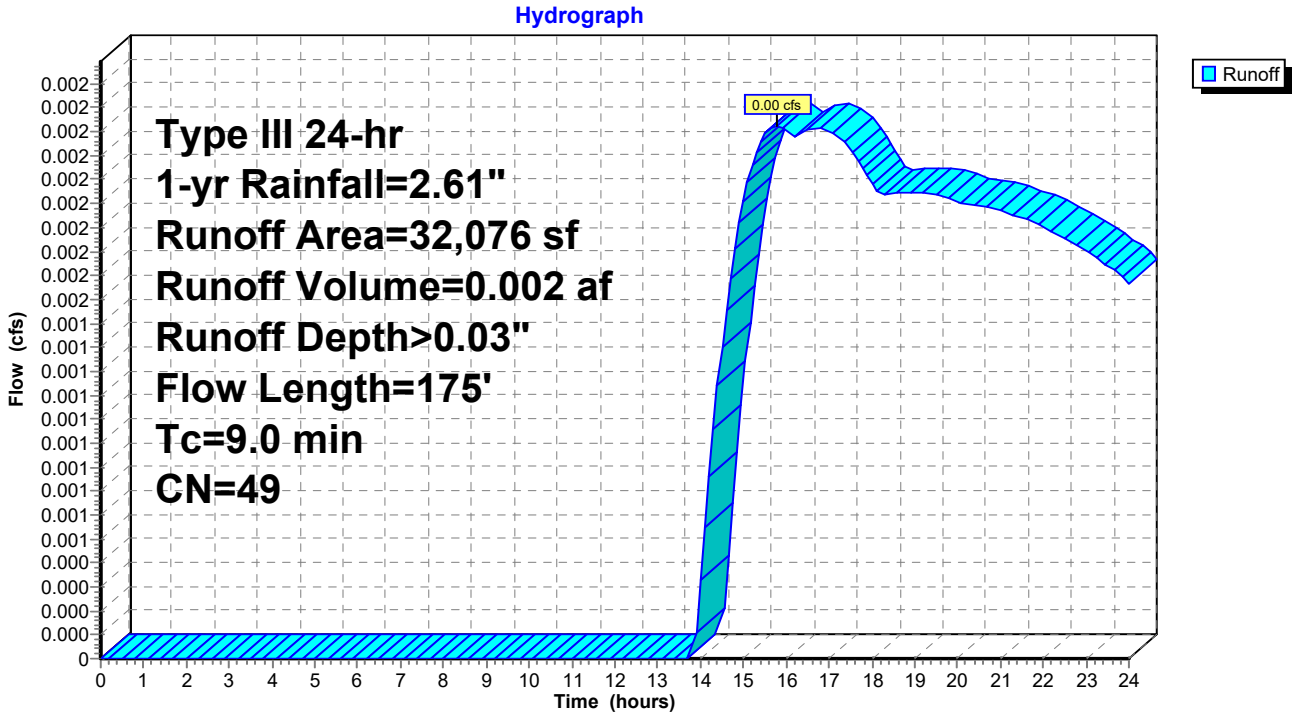
Runoff = 0.00 cfs @ 15.76 hrs, Volume= 0.002 af, Depth> 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 1-yr Rainfall=2.61"

Area (sf)	CN	Description
0	98	Paved parking, HSG A
32,076	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
32,076	49	Weighted Average
32,076		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	100	0.0350	0.21		**Sheet Flow, 100' grass sheet flow** Grass: Short n= 0.150 P2= 3.17"
1.1	75	0.0286	1.18		**Shallow Concentrated Flow, 75' grass** Short Grass Pasture Kv= 7.0 fps
9.0	175	Total			

Subcatchment PS7: GRASS

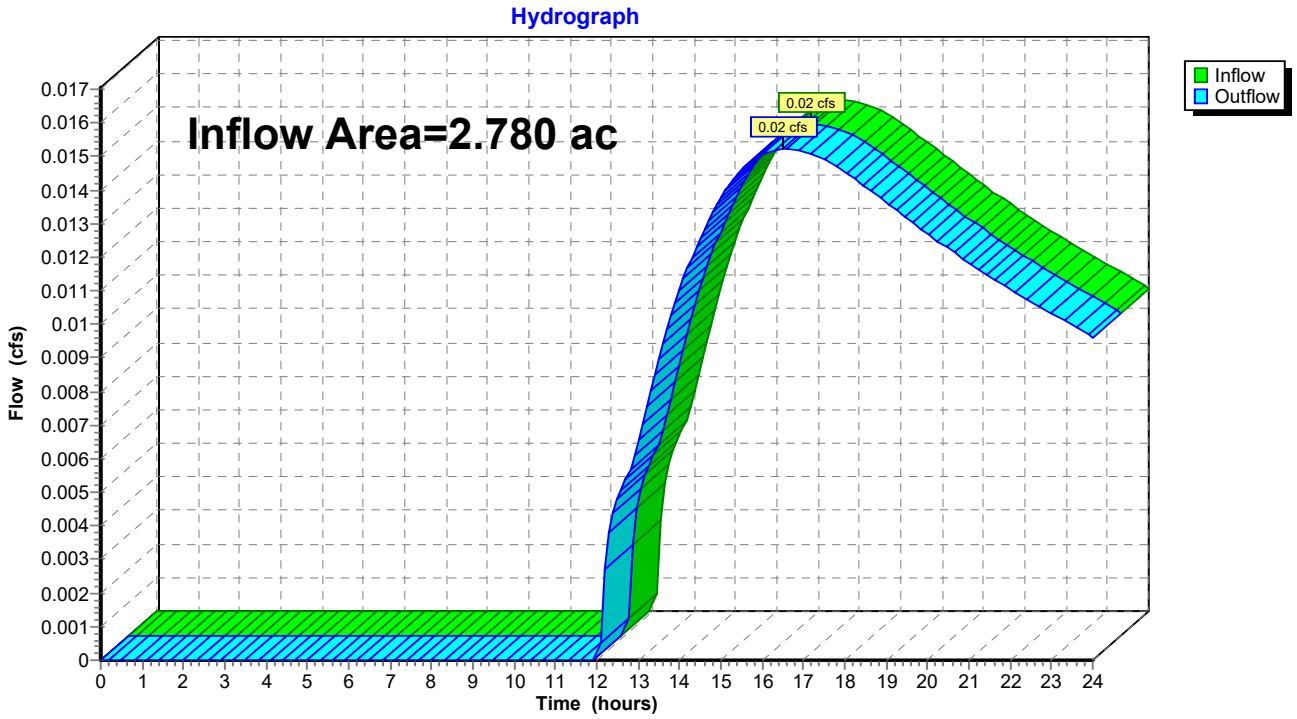


Summary for Reach AP1: DP1

Inflow Area = 2.780 ac, 53.33% Impervious, Inflow Depth > 0.05" for 1-yr event
Inflow = 0.02 cfs @ 16.52 hrs, Volume= 0.012 af
Outflow = 0.02 cfs @ 16.52 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3

Reach AP1: DP1



Summary for Pond 1P: DETENTION

Inflow Area = 2.780 ac, 53.33% Impervious, Inflow Depth > 0.08" for 1-yr event
Inflow = 0.40 cfs @ 12.11 hrs, Volume= 0.019 af
Outflow = 0.02 cfs @ 16.52 hrs, Volume= 0.012 af, Atten= 96%, Lag= 264.8 min
Primary = 0.02 cfs @ 16.52 hrs, Volume= 0.012 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 71.08' @ 16.52 hrs Surf.Area= 5,172 sf Storage= 405 cf
Flood Elev= 74.00' Surf.Area= 9,613 sf Storage= 21,879 cf

Plug-Flow detention time= 304.7 min calculated for 0.012 af (61% of inflow)
Center-of-Mass det. time= 170.8 min (1,092.9 - 922.1)

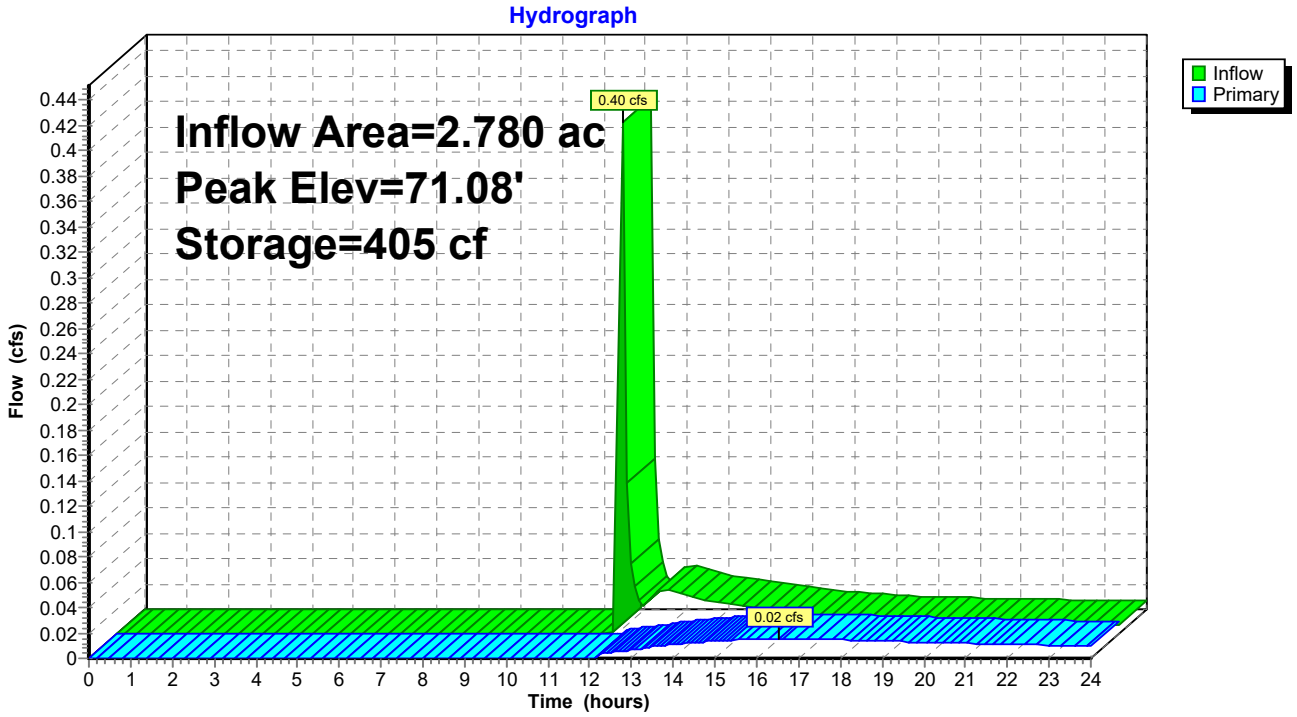
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	21,879 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	5,057	0	0
72.00	6,512	5,785	5,785
73.00	8,032	7,272	13,057
74.00	9,613	8,823	21,879

Device	Routing	Invert	Outlet Devices
#1	Primary	67.00'	**6.0" Round Culvert** L= 26.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 67.00' / 66.60' S= 0.0154 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	73.55'	**12.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	71.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.02 cfs @ 16.52 hrs HW=71.08' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.02 cfs of 1.67 cfs potential flow)
  ├─**2=Orifice/Grate** (Controls 0.00 cfs)
  └─**3=Orifice/Grate** (Orifice Controls 0.02 cfs @ 0.96 fps)

Pond 1P: DETENTION



Summary for Pond 2P: BIO (S)

Inflow Area = 0.156 ac, 56.28% Impervious, Inflow Depth > 0.33" for 1-yr event
Inflow = 0.02 cfs @ 13.70 hrs, Volume= 0.004 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 73.34' @ 24.00 hrs Surf.Area= 607 sf Storage= 190 cf
Flood Elev= 74.00' Surf.Area= 788 sf Storage= 651 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	73.00'	651 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

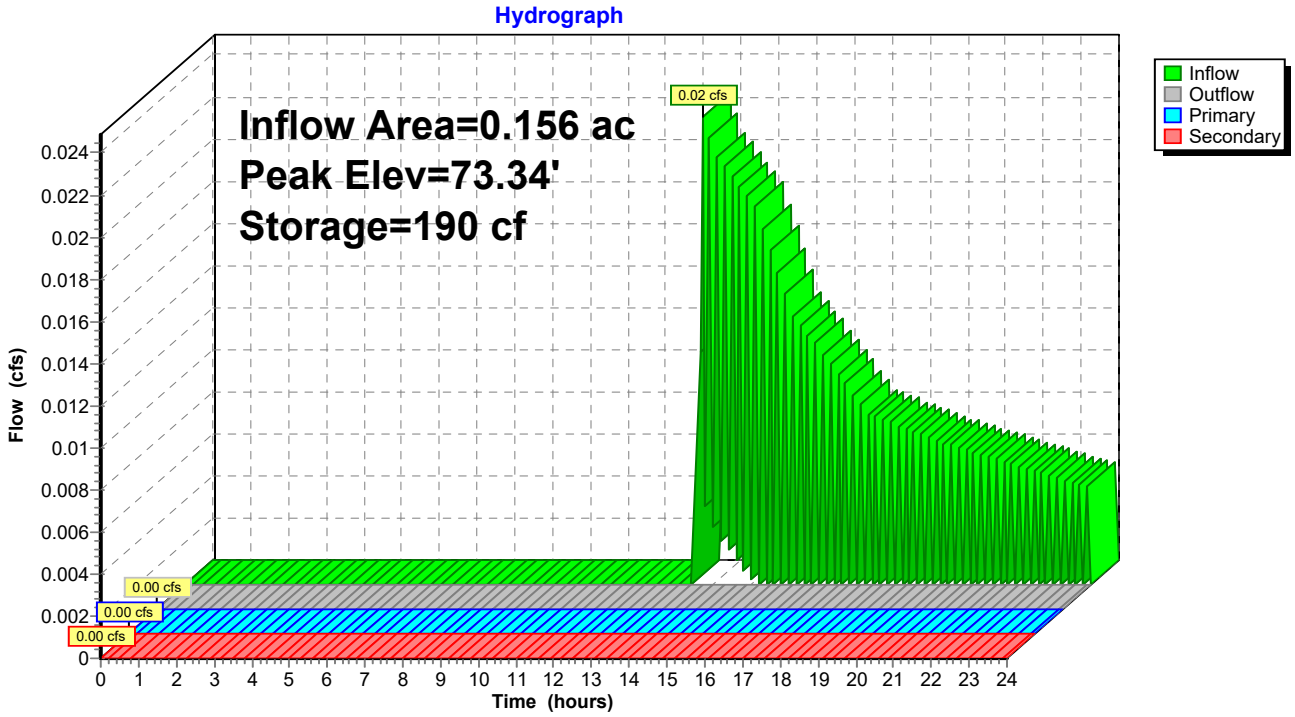
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.00	514	0	0
74.00	788	651	651

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Secondary	68.45'	**6.0" Round Culvert** L= 42.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.45' / 67.00' S= 0.0345 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	73.90'	**12.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=71.00' (Dynamic Tailwater)
└─**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 0.00 cfs of 1.68 cfs potential flow)
└─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: BIO (S)


Hydrograph
Inflow Area=0.156 ac
Peak Elev=73.34'
Storage=190 cf
0.02 cfs
0.00 cfs
0.00 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0.024
0.022
0.02
0.018
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

Summary for Pond 3P: HYDRO

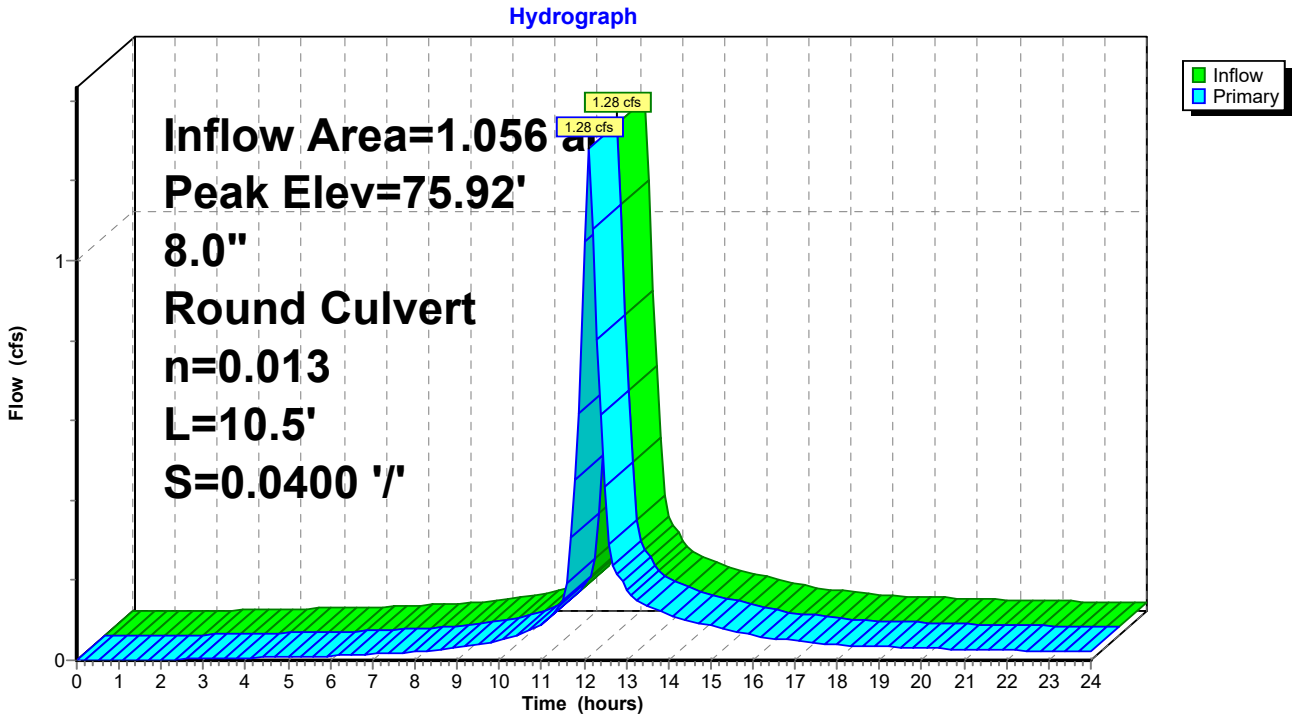
Inflow Area = 1.056 ac, 77.83% Impervious, Inflow Depth > 1.51" for 1-yr event
Inflow = 1.28 cfs @ 12.10 hrs, Volume= 0.133 af
Outflow = 1.28 cfs @ 12.10 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min
Primary = 1.28 cfs @ 12.10 hrs, Volume= 0.133 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 75.92' @ 12.10 hrs
Flood Elev= 79.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.00'	**8.0" Round Culvert** L= 10.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.00' / 74.58' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.28 cfs @ 12.10 hrs HW=75.91' TW=72.30' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.28 cfs @ 3.66 fps)

Pond 3P: HYDRO



Summary for Pond 4P: PRETREAT PIPE

Inflow Area = 0.156 ac, 56.28% Impervious, Inflow Depth > 0.81" for 1-yr event
Inflow = 0.13 cfs @ 12.11 hrs, Volume= 0.011 af
Outflow = 0.02 cfs @ 13.70 hrs, Volume= 0.004 af, Atten= 83%, Lag= 95.4 min
Primary = 0.02 cfs @ 13.70 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 75.02' @ 13.70 hrs Surf.Area= 0 sf Storage= 269 cf
Flood Elev= 75.62' Surf.Area= 0 sf Storage= 269 cf

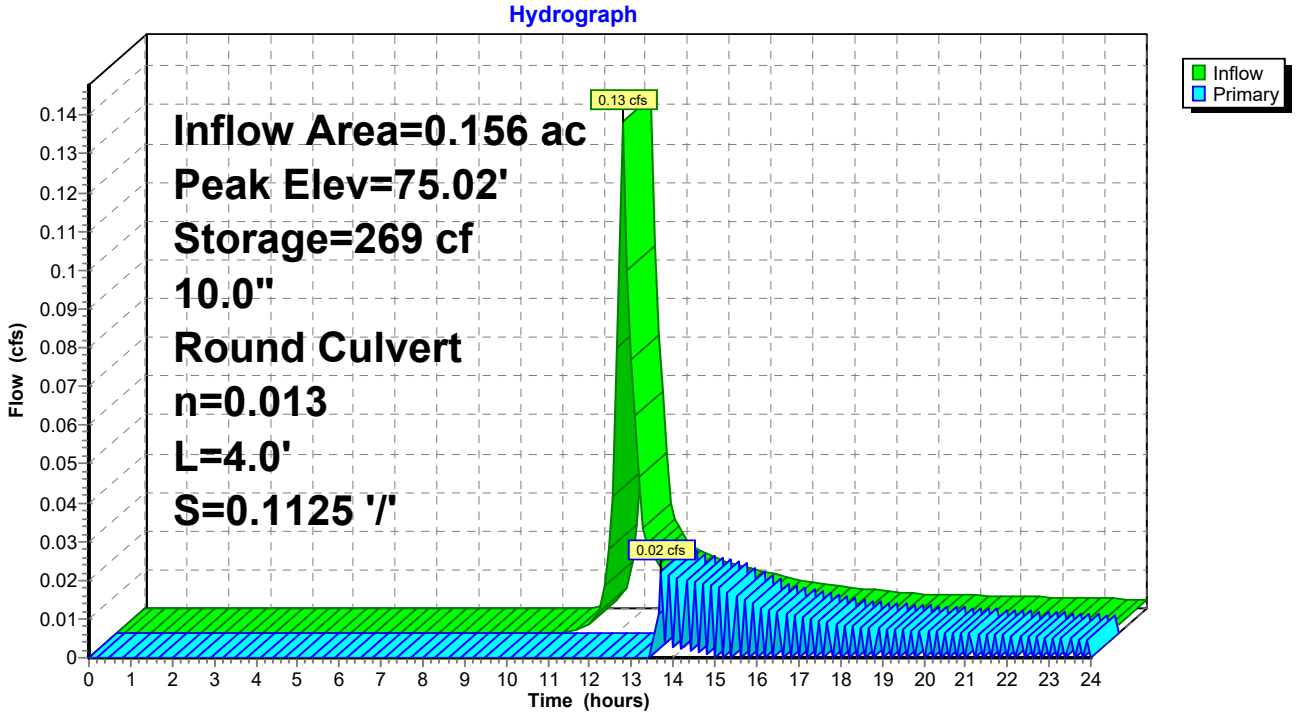
Plug-Flow detention time= 309.0 min calculated for 0.004 af (41% of inflow)
Center-of-Mass det. time= 173.1 min (1,037.4 - 864.3)

Volume	Invert	Avail.Storage	Storage Description
#1	71.12'	269 cf	**42.0" Round Pipe Storage** L= 28.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	74.95'	**10.0" Round Culvert** L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.95' / 74.50' S= 0.1125 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.02 cfs @ 13.70 hrs HW=75.02' TW=73.01' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.02 cfs @ 0.93 fps)

Pond 4P: PRETREAT PIPE



Summary for Pond 5P: MH1

Inflow Area = 1.056 ac, 77.83% Impervious, Inflow Depth > 1.56" for 1-yr event
Inflow = 1.66 cfs @ 12.10 hrs, Volume= 0.137 af
Outflow = 1.66 cfs @ 12.10 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min
Primary = 1.28 cfs @ 12.10 hrs, Volume= 0.133 af
Secondary = 0.38 cfs @ 12.10 hrs, Volume= 0.004 af

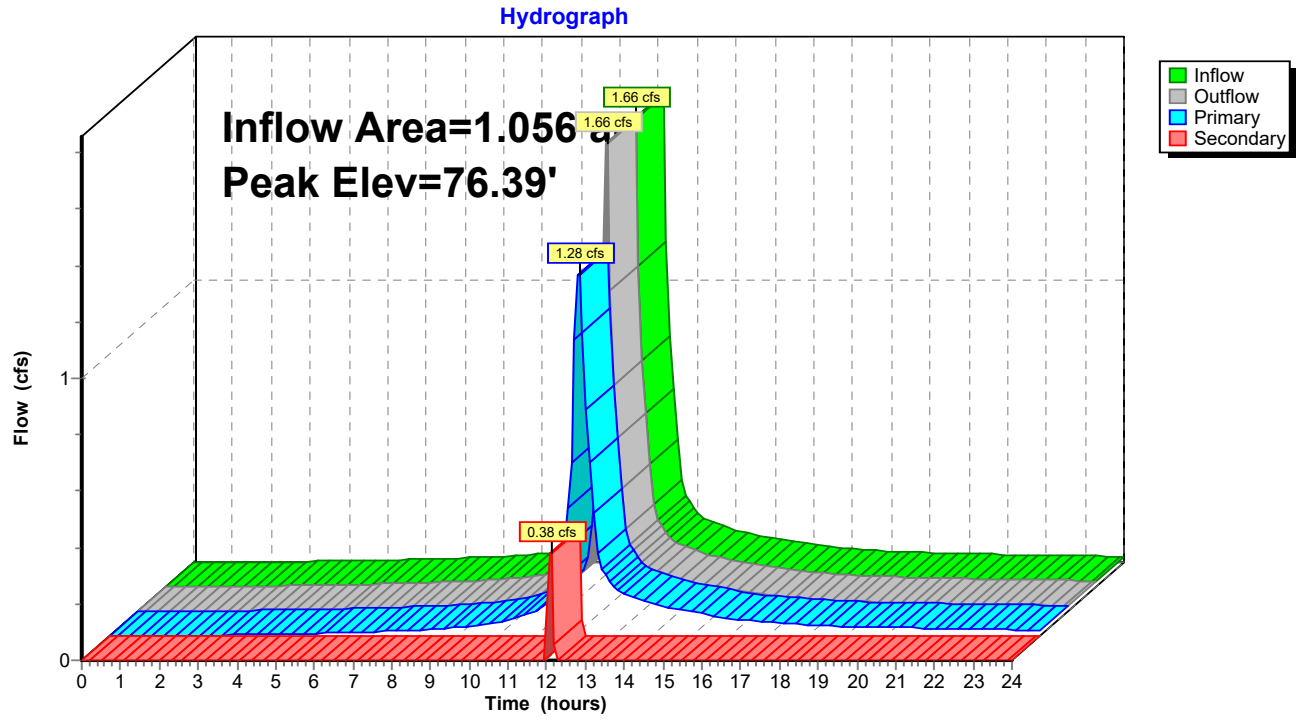
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 76.39' @ 12.11 hrs
Flood Elev= 80.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.20'	**8.0" Round Culvert** L= 9.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.20' / 75.03' S= 0.0189 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Secondary	76.08'	**12.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.08' / 74.90' S= 0.0562 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.15 cfs @ 12.10 hrs HW=76.38' TW=75.91' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.15 cfs @ 3.29 fps)

Secondary OutFlow Max=0.36 cfs @ 12.10 hrs HW=76.38' TW=71.02' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 0.36 cfs @ 1.85 fps)

Pond 5P: MH1



Summary for Pond 6P: BIO (NW)

Inflow Area = 0.295 ac, 59.02% Impervious, Inflow Depth > 0.86" for 1-yr event
Inflow = 0.27 cfs @ 12.11 hrs, Volume= 0.021 af
Outflow = 0.04 cfs @ 12.81 hrs, Volume= 0.012 af, Atten= 84%, Lag= 42.3 min
Primary = 0.04 cfs @ 12.81 hrs, Volume= 0.012 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 80.52' @ 12.81 hrs Surf.Area= 910 sf Storage= 425 cf
Flood Elev= 81.00' Surf.Area= 1,085 sf Storage= 903 cf

Plug-Flow detention time= 236.3 min calculated for 0.012 af (55% of inflow)
Center-of-Mass det. time= 113.0 min (973.7 - 860.6)

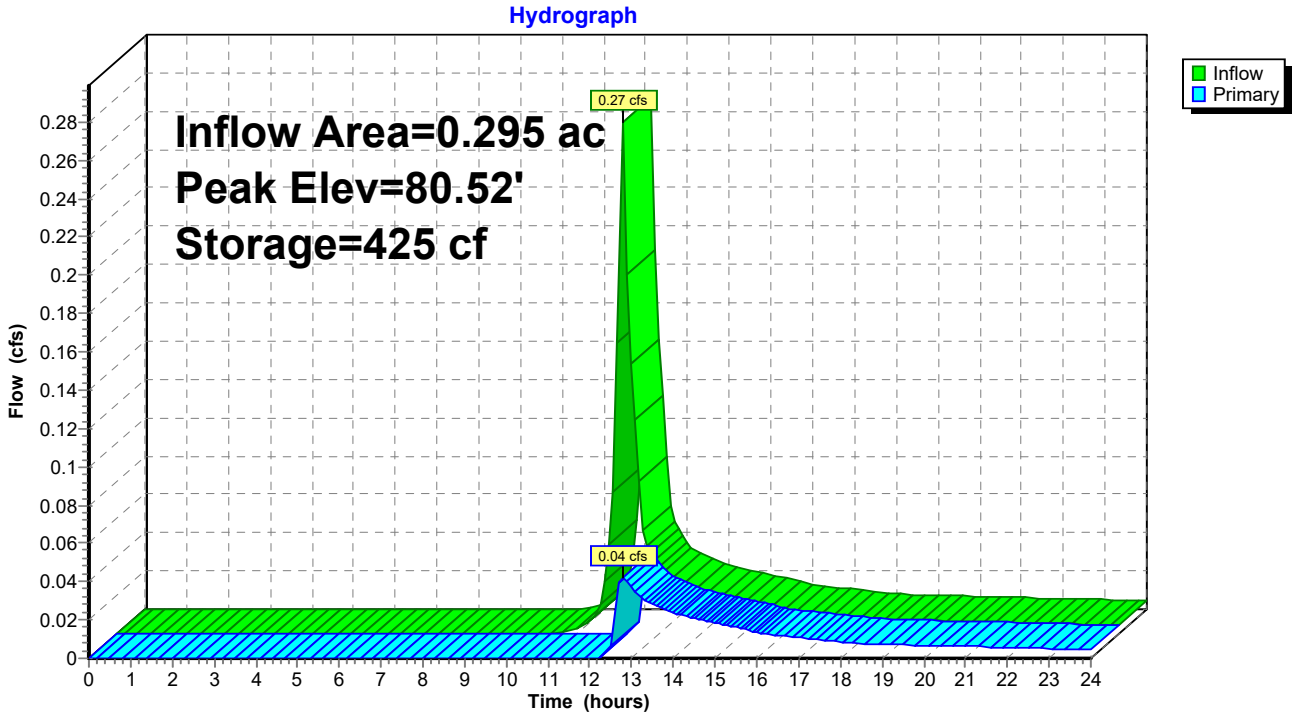
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	903 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
80.00	720	0	0
81.00	1,085	903	903

Device	Routing	Invert	Outlet Devices
#1	Primary	76.50'	**6.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.50' / 76.25' S= 0.0179 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	80.50'	**12.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 12.81 hrs HW=80.52' TW=75.36' (Dynamic Tailwater)
↑**1=Culvert** (Passes 0.04 cfs of 1.84 cfs potential flow)
↑**2=Orifice/Grate** (Weir Controls 0.04 cfs @ 0.48 fps)

Pond 6P: BIO (NW)



Summary for Pond 7P: CB1

Inflow Area = 0.536 ac, 74.33% Impervious, Inflow Depth > 1.27" for 1-yr event
Inflow = 0.71 cfs @ 12.12 hrs, Volume= 0.057 af
Outflow = 0.71 cfs @ 12.12 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 12.14 hrs, Volume= 0.054 af
Secondary = 0.21 cfs @ 12.11 hrs, Volume= 0.002 af

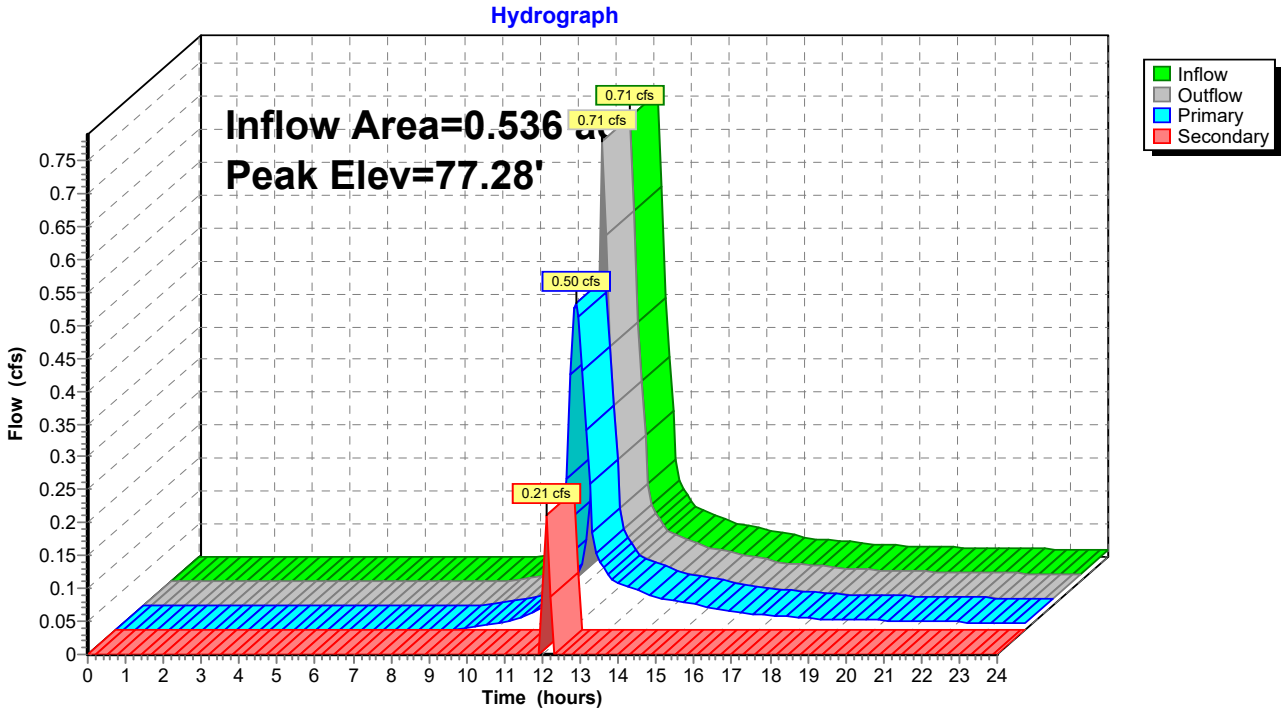
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 77.28' @ 12.13 hrs
Flood Elev= 80.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	76.50'	**6.0" Round Culvert** L= 187.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.50' / 75.20' S= 0.0069 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	77.05'	**15.0" Round Culvert** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 77.05' / 76.55' S= 0.0077 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.48 cfs @ 12.14 hrs HW=77.24' TW=75.63' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.48 cfs @ 2.46 fps)

Secondary OutFlow Max=0.19 cfs @ 12.11 hrs HW=77.26' TW=75.48' (Dynamic Tailwater)
└─**2=Culvert** (Barrel Controls 0.19 cfs @ 2.16 fps)

Pond 7P: CB1



Summary for Pond 8P: PIPE INFILTRATORS

Inflow Area = 1.593 ac, 76.65% Impervious, Inflow Depth > 1.35" for 1-yr event
Inflow = 1.93 cfs @ 12.11 hrs, Volume= 0.179 af
Outflow = 0.11 cfs @ 19.69 hrs, Volume= 0.121 af, Atten= 95%, Lag= 454.7 min
Discarded = 0.11 cfs @ 19.69 hrs, Volume= 0.121 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 73.50' @ 15.66 hrs Surf.Area= 2,254 sf Storage= 4,142 cf
Flood Elev= 75.25' Surf.Area= 0 sf Storage= 7,138 cf

Plug-Flow detention time= 297.4 min calculated for 0.121 af (67% of inflow)
Center-of-Mass det. time= 190.6 min (1,009.5 - 818.9)

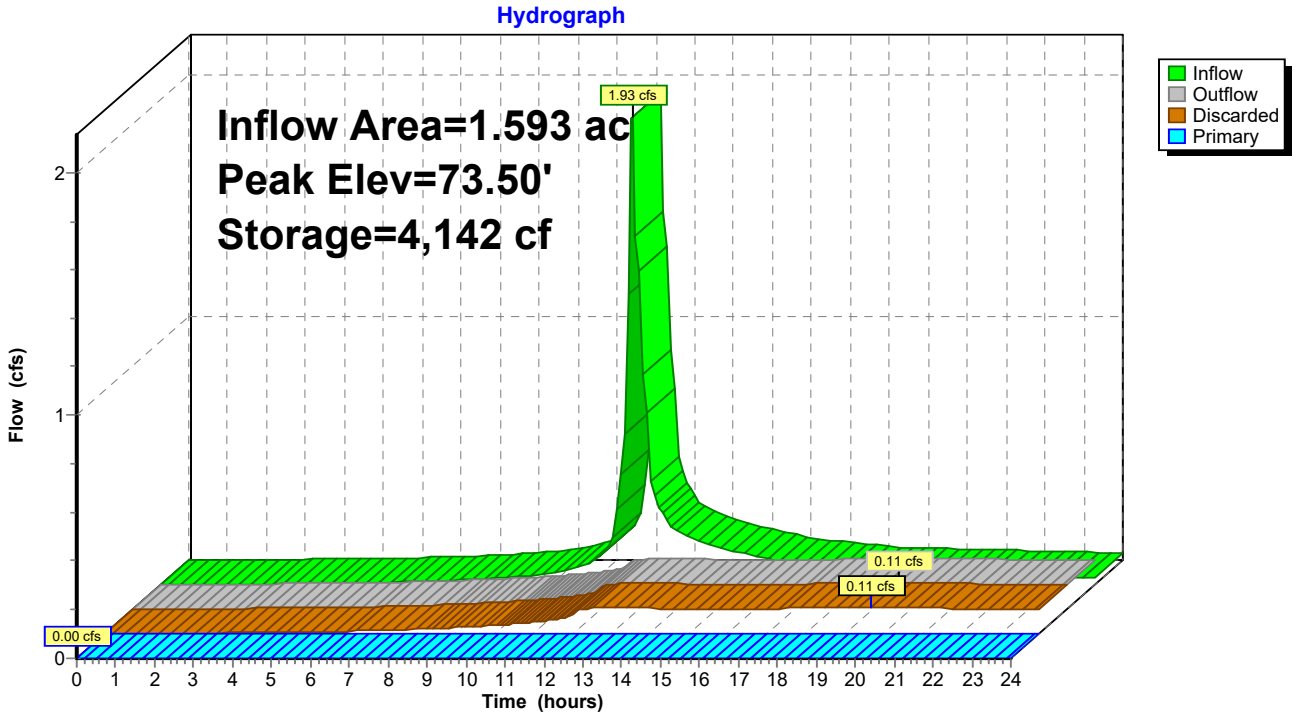
Volume	Invert	Avail.Storage	Storage Description
#1	71.25'	7,138 cf	**48.0" Round Pipe Storage** x 4 L= 142.0'

Device	Routing	Invert	Outlet Devices
#1	Discarded	71.25'	**2.000 in/hr Exfiltration over Surface area**
#2	Primary	74.25'	**12.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.25' / 73.00' S= 0.0357 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.11 cfs @ 19.69 hrs HW=73.25' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=71.25' TW=71.00' (Dynamic Tailwater)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond 8P: PIPE INFILTRATORS



Summary for Pond 9P: MH3

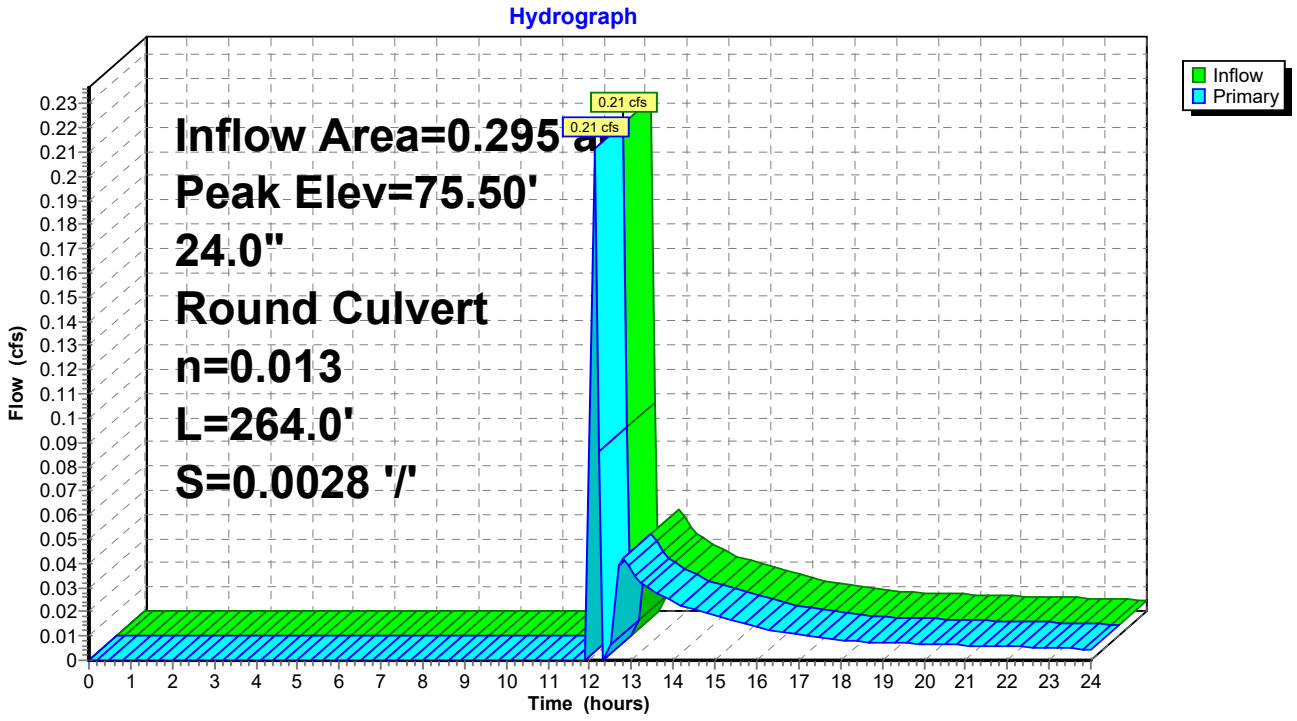
Inflow Area = 0.295 ac, 59.02% Impervious, Inflow Depth > 0.58" for 1-yr event
Inflow = 0.21 cfs @ 12.11 hrs, Volume= 0.014 af
Outflow = 0.21 cfs @ 12.11 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.21 cfs @ 12.11 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 75.50' @ 12.12 hrs
Flood Elev= 83.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.25'	**24.0" Round Culvert** L= 264.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.25' / 74.50' S= 0.0028 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.19 cfs @ 12.11 hrs HW=75.48' TW=73.17' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.19 cfs @ 1.42 fps)

Pond 9P: MH3



Summary for Pond 10P: PIPE DETENTION

Inflow Area = 0.295 ac, 59.02% Impervious, Inflow Depth > 0.58" for 1-yr event
Inflow = 0.21 cfs @ 12.11 hrs, Volume= 0.014 af
Outflow = 0.06 cfs @ 12.24 hrs, Volume= 0.014 af, Atten= 70%, Lag= 7.4 min
Primary = 0.06 cfs @ 12.24 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 73.24' @ 12.24 hrs Surf.Area= 592 sf Storage= 75 cf
Flood Elev= 76.55' Surf.Area= 0 sf Storage= 3,608 cf

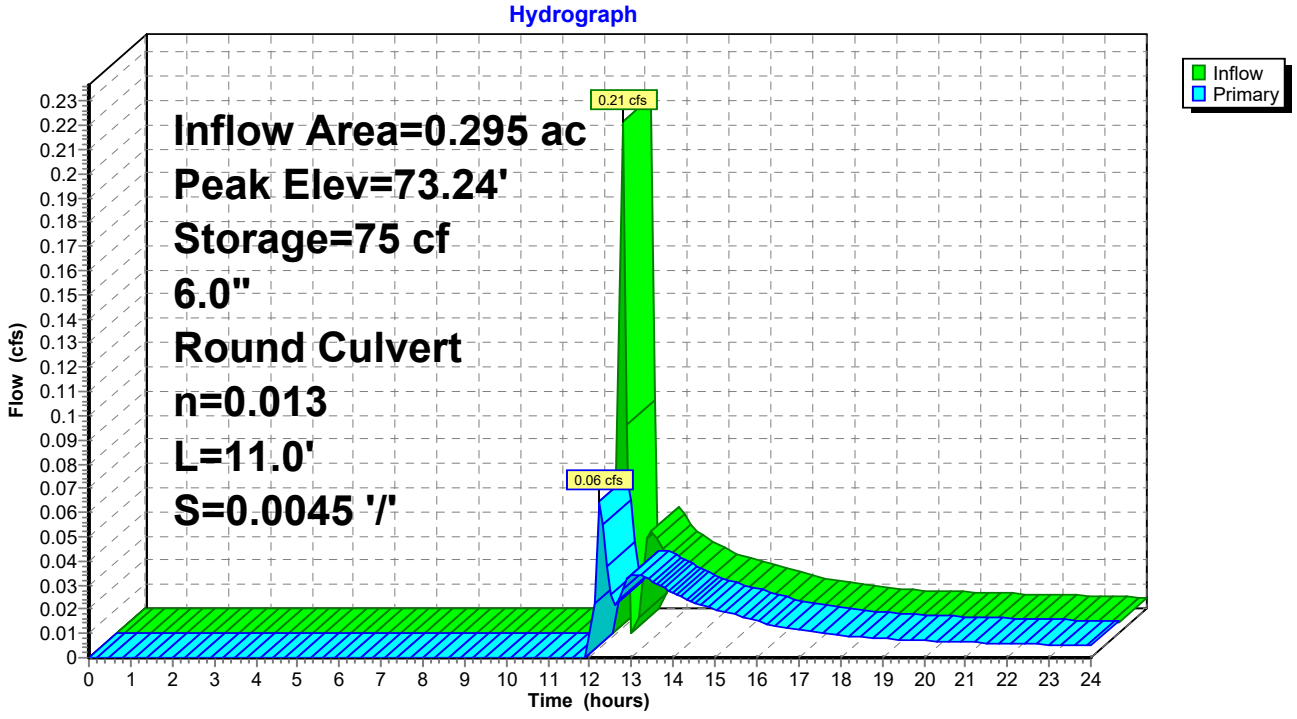
Plug-Flow detention time= 26.9 min calculated for 0.014 af (98% of inflow)
Center-of-Mass det. time= 17.9 min (949.2 - 931.3)

Volume	Invert	Avail.Storage	Storage Description
#1	73.05'	3,608 cf	**42.0" Round Pipe Storage** x 3 L= 125.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	73.05'	**6.0" Round Culvert** L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.05' / 73.00' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.06 cfs @ 12.24 hrs HW=73.23' TW=71.03' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.06 cfs @ 1.39 fps)

Pond 10P: PIPE DETENTION



Summary for Pond 11P: PRETREAT PIPE

Inflow Area = 0.536 ac, 74.33% Impervious, Inflow Depth > 1.21" for 1-yr event
Inflow = 0.50 cfs @ 12.14 hrs, Volume= 0.054 af
Outflow = 0.65 cfs @ 12.11 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary = 0.65 cfs @ 12.11 hrs, Volume= 0.046 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 75.69' @ 12.12 hrs Surf.Area= 18 sf Storage= 404 cf
Flood Elev= 75.70' Surf.Area= 0 sf Storage= 404 cf

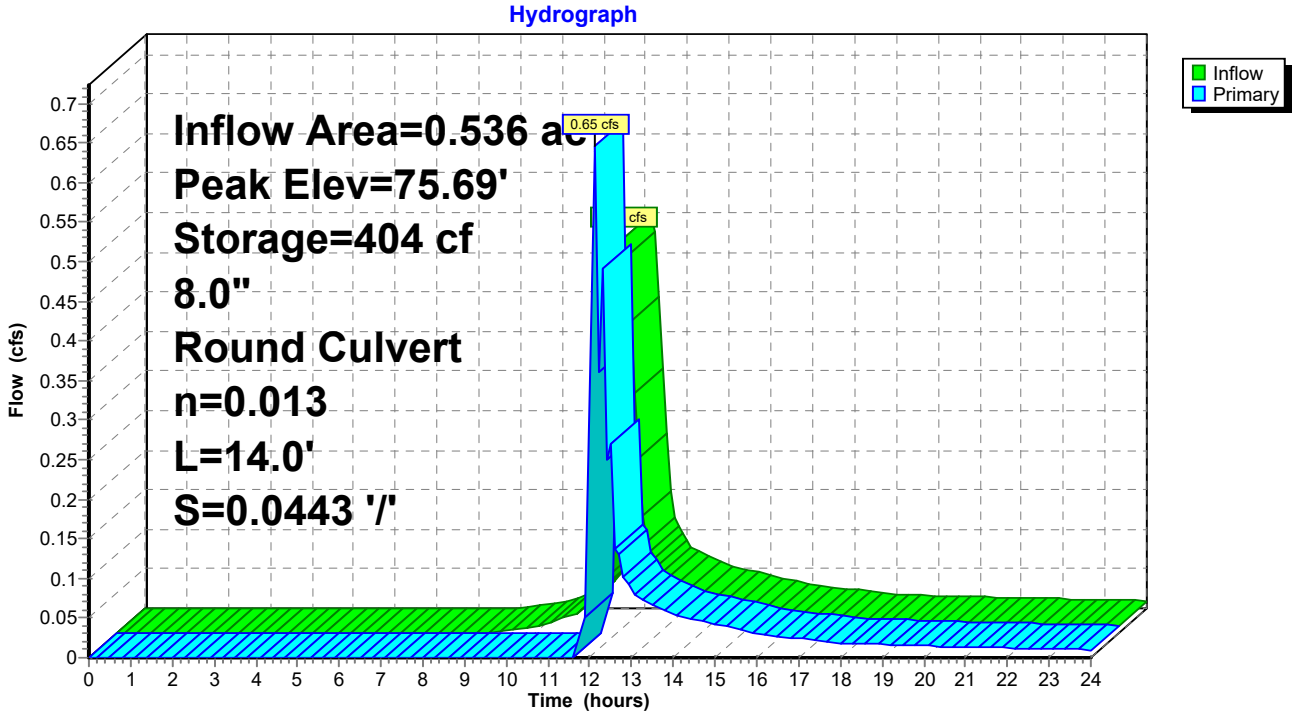
Plug-Flow detention time= 98.7 min calculated for 0.046 af (84% of inflow)
Center-of-Mass det. time= 30.8 min (872.4 - 841.6)

Volume	Invert	Avail.Storage	Storage Description
#1	72.20'	404 cf	**42.0" Round Pipe Storage** L= 42.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.20'	**8.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.20' / 74.58' S= 0.0443 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.60 cfs @ 12.11 hrs HW=75.66' TW=72.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.60 cfs @ 2.32 fps)

Pond 11P: PRETREAT PIPE



Summary for Subcatchment PS1: ENTRANCE

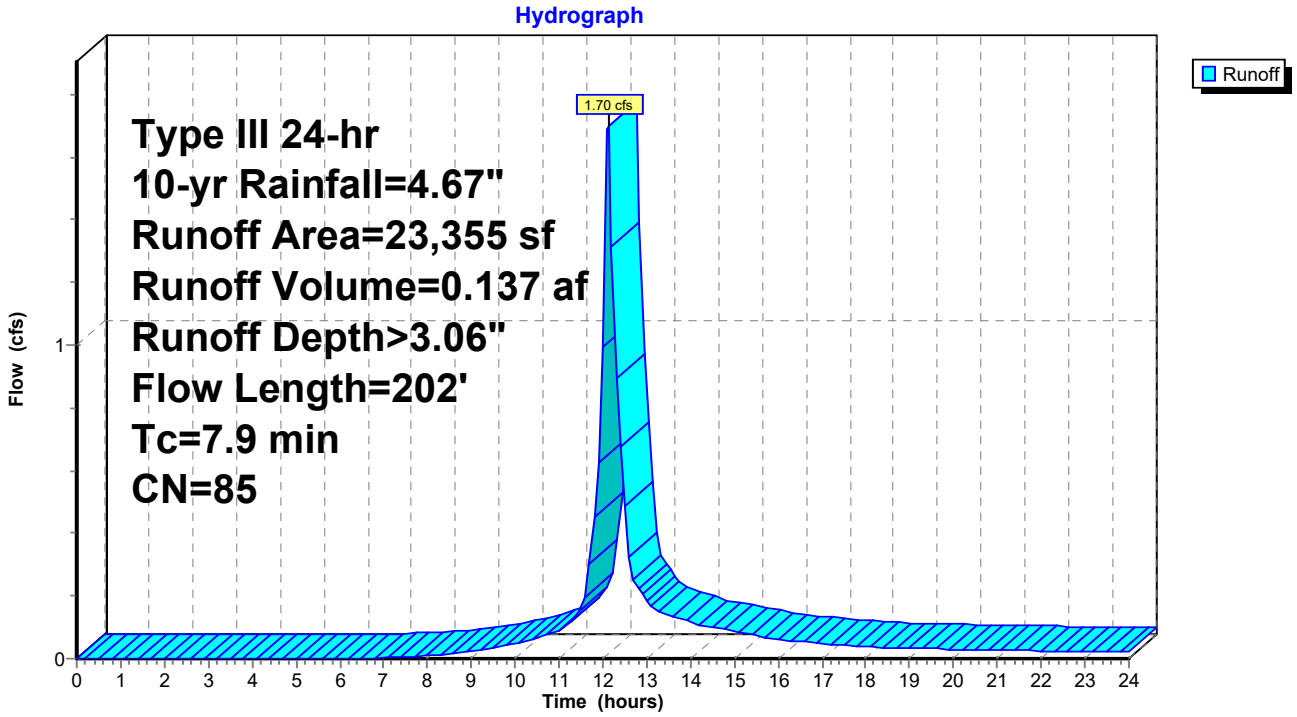
Runoff = 1.70 cfs @ 12.11 hrs, Volume= 0.137 af, Depth> 3.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
17,360	98	Paved parking, HSG A
5,995	49	50-75% Grass cover, Fair, HSG A
23,355	85	Weighted Average
5,995		25.67% Pervious Area
17,360		74.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.0400	0.22		**Sheet Flow, 100' sheet flow grass** Grass: Short n= 0.150 P2= 3.17"
0.4	102	0.0350	3.80		**Shallow Concentrated Flow, 102' Shallow concentrated paveme** Paved Kv= 20.3 fps
7.9	202	Total			

Subcatchment PS1: ENTRANCE



Summary for Subcatchment PS2: MID PARKING

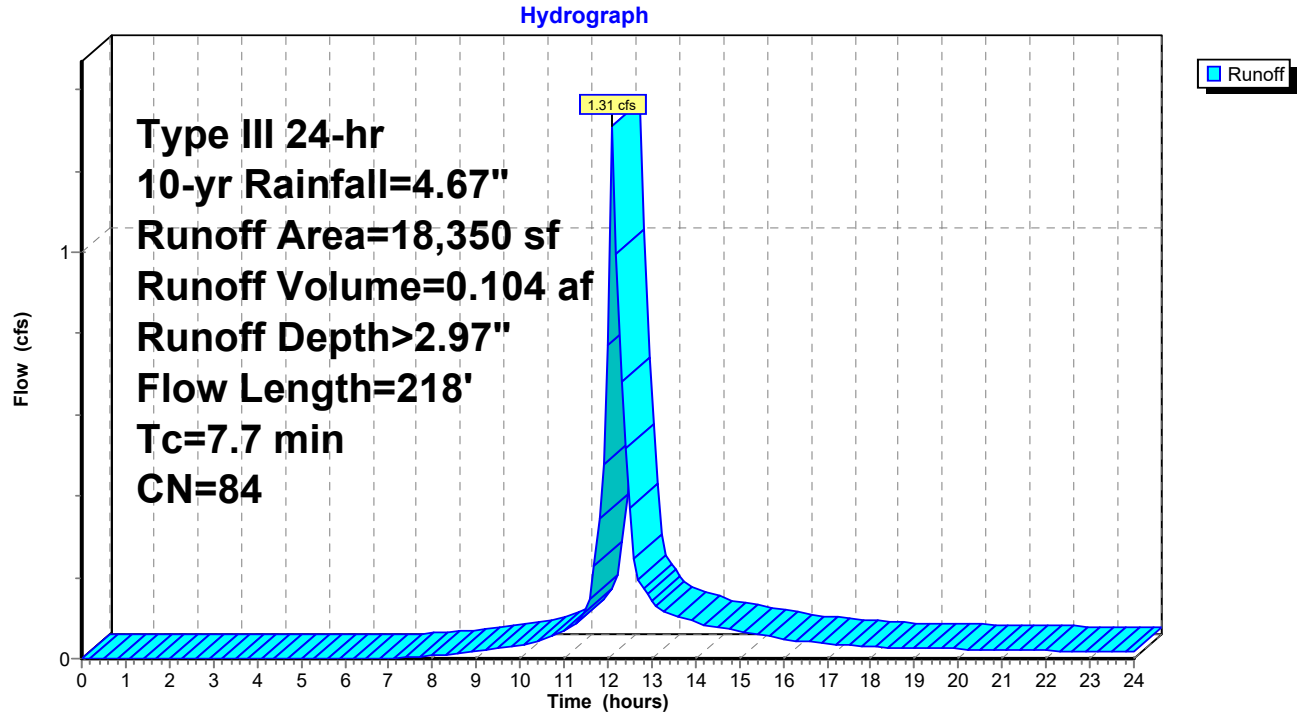
Runoff = 1.31 cfs @ 12.11 hrs, Volume= 0.104 af, Depth> 2.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
12,975	98	Paved parking, HSG A
5,375	49	50-75% Grass cover, Fair, HSG A
18,350	84	Weighted Average
5,375		29.29% Pervious Area
12,975		70.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.0450	0.23		**Sheet Flow, 100' sheet flow grass** Grass: Short n= 0.150 P2= 3.17"
0.6	118	0.0260	3.27		**Shallow Concentrated Flow, 118' paved shallow concentration** Paved Kv= 20.3 fps
7.7	218	Total			

Subcatchment PS2: MID PARKING



Summary for Subcatchment PS3: W PARKING

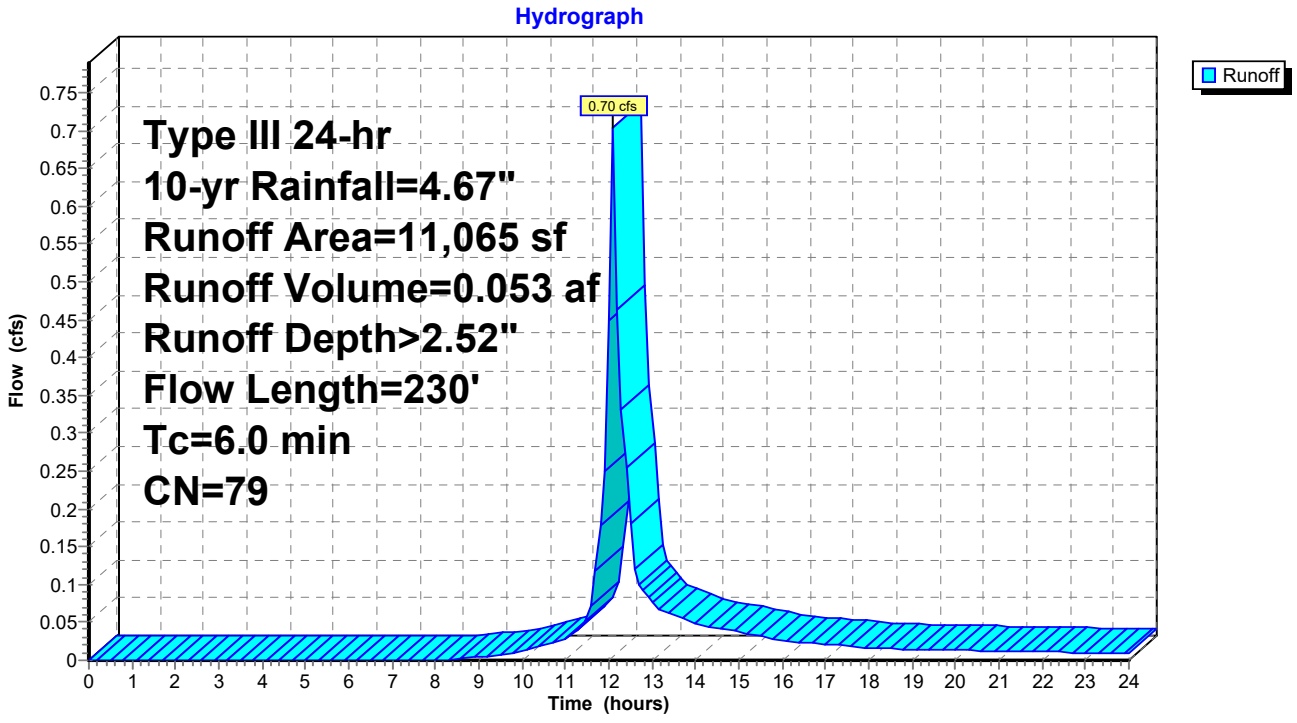
Runoff = 0.70 cfs @ 12.10 hrs, Volume= 0.053 af, Depth> 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
6,240	98	Paved parking, HSG A
1,755	49	50-75% Grass cover, Fair, HSG A
3,070	57	Woods/grass comb., Poor, HSG A
11,065	79	Weighted Average
4,825		43.61% Pervious Area
6,240		56.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	63	0.1349	0.33		**Sheet Flow, 63' grass sheet flow** Grass: Short n= 0.150 P2= 3.17"
0.9	167	0.0239	3.14		**Shallow Concentrated Flow, 167' paved** Paved Kv= 20.3 fps
4.1	230	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PS3: W PARKING



Summary for Subcatchment PS4: EXIT GARAGE

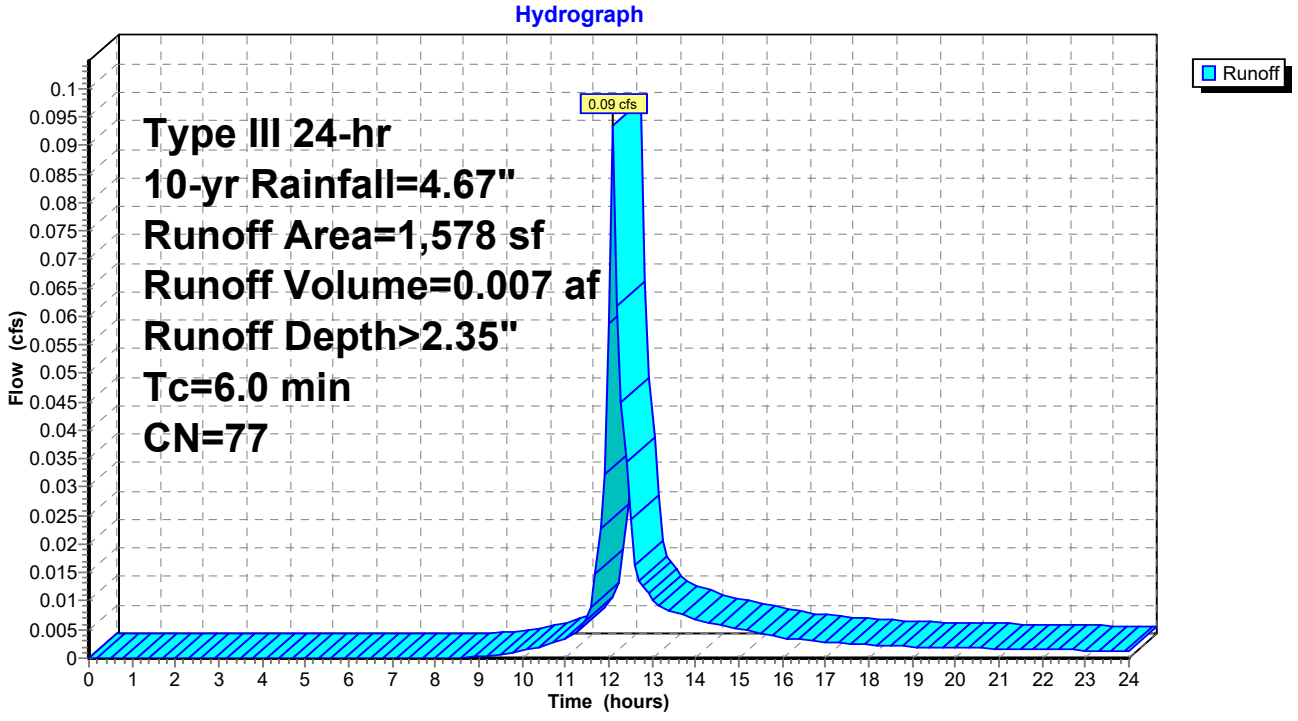
Runoff = 0.09 cfs @ 12.10 hrs, Volume= 0.007 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
892	98	Paved parking, HSG A
686	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
1,578	77	Weighted Average
686		43.47% Pervious Area
892		56.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Subcatchment PS4: EXIT GARAGE



Summary for Subcatchment PS5: ENTRANCE GARAGE

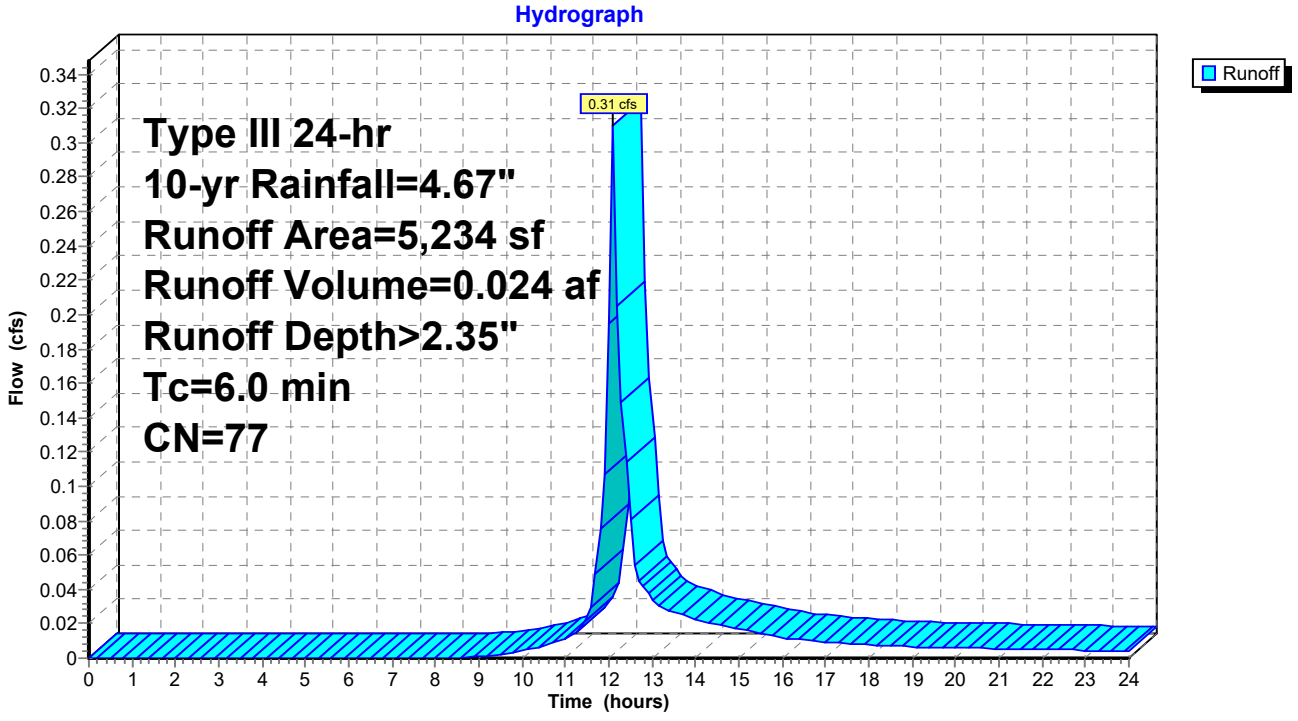
Runoff = 0.31 cfs @ 12.10 hrs, Volume= 0.024 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
2,942	98	Paved parking, HSG A
2,292	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
5,234	77	Weighted Average
2,292		43.79% Pervious Area
2,942		56.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment PS5: ENTRANCE GARAGE



Summary for Subcatchment PS6A: BUILDING

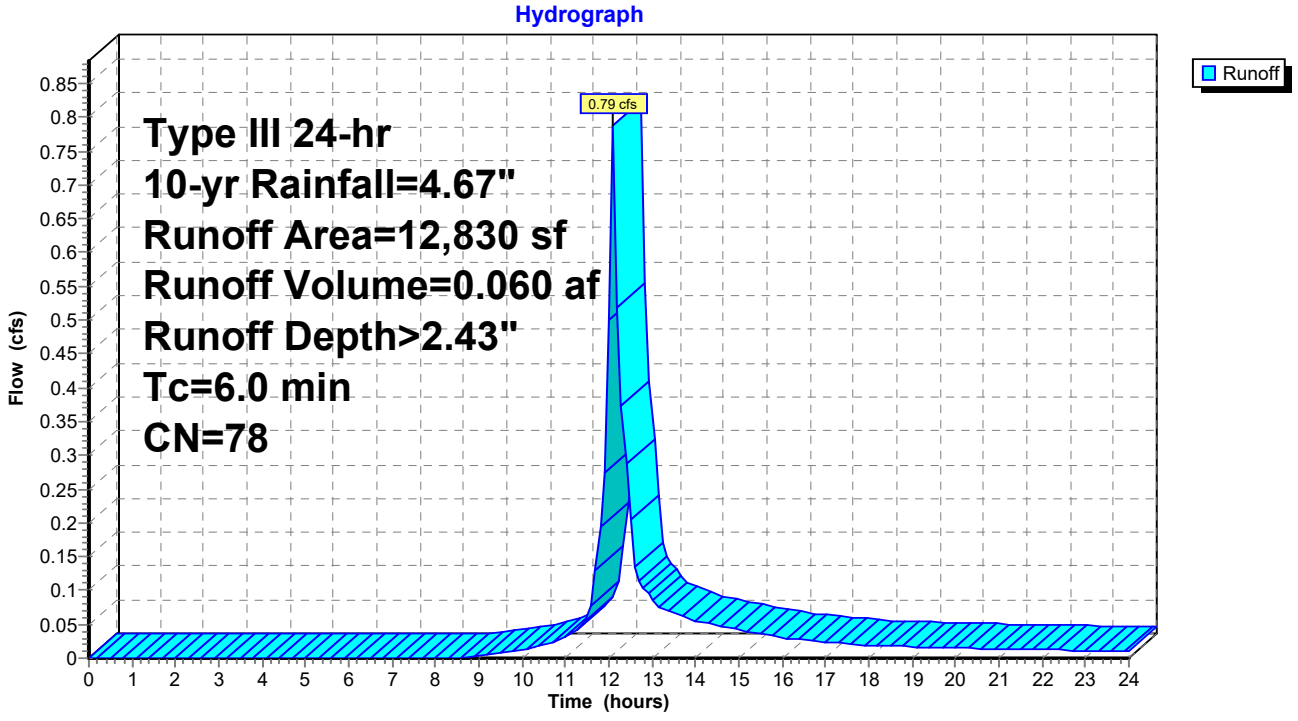
Runoff = 0.79 cfs @ 12.10 hrs, Volume= 0.060 af, Depth> 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
7,572	98	Paved parking, HSG A
5,258	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
12,830	78	Weighted Average
5,258		40.98% Pervious Area
7,572		59.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, roof**

Subcatchment PS6A: BUILDING



Summary for Subcatchment PS6B: BUILDING

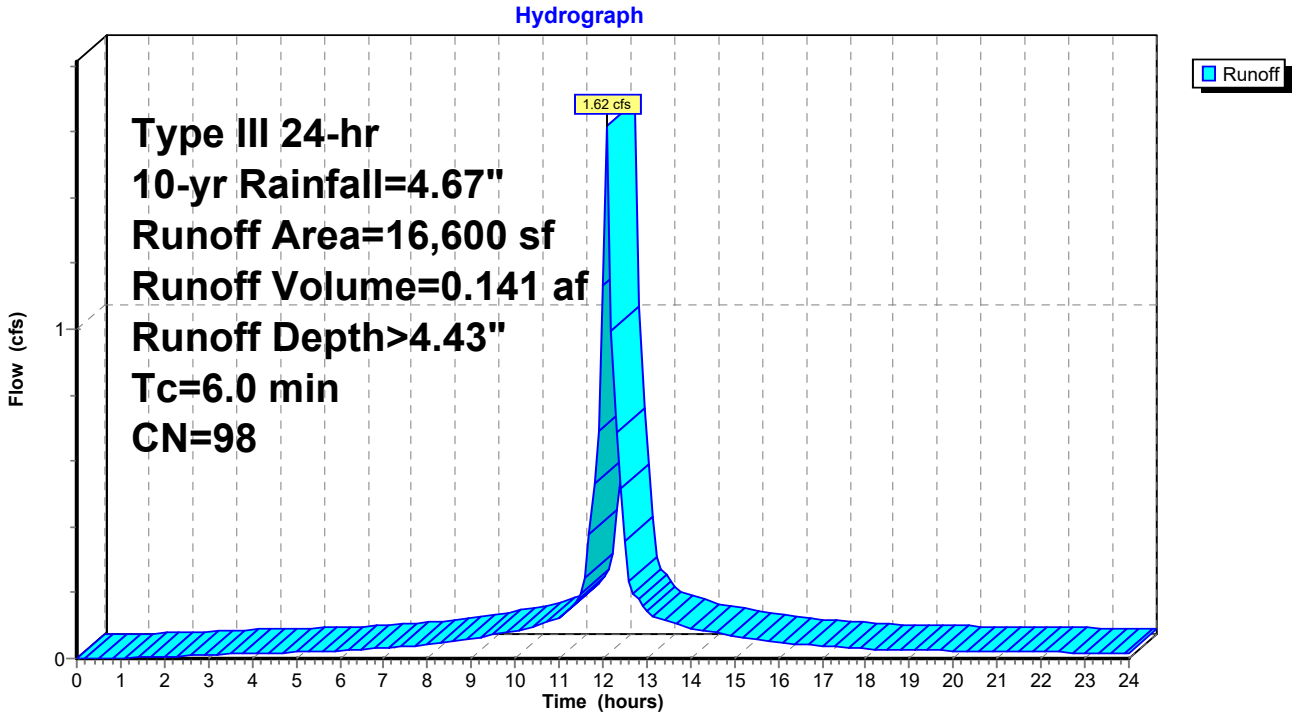
Runoff = 1.62 cfs @ 12.09 hrs, Volume= 0.141 af, Depth> 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
16,600	98	Paved parking, HSG A
0	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
16,600	98	Weighted Average
16,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, roof**

Subcatchment PS6B: BUILDING



Summary for Subcatchment PS7: GRASS

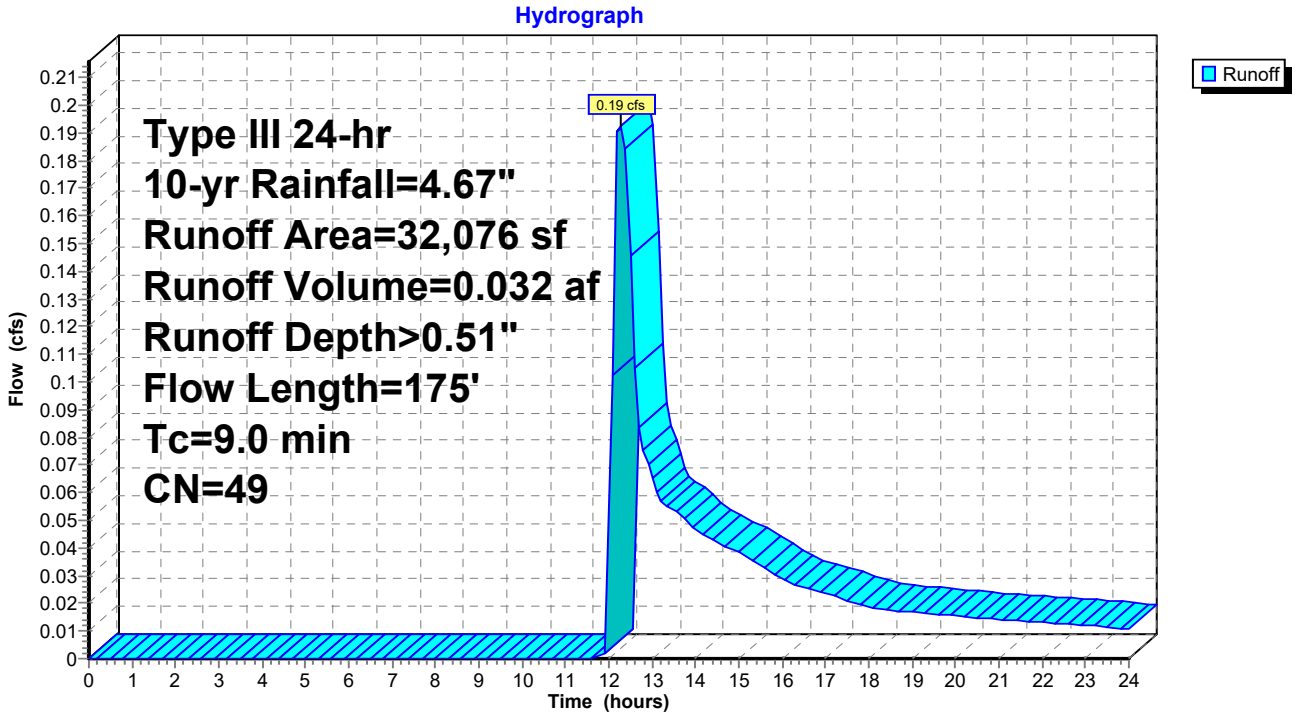
Runoff = 0.19 cfs @ 12.26 hrs, Volume= 0.032 af, Depth> 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-yr Rainfall=4.67"

Area (sf)	CN	Description
0	98	Paved parking, HSG A
32,076	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
32,076	49	Weighted Average
32,076		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	100	0.0350	0.21		**Sheet Flow, 100' grass sheet flow** Grass: Short n= 0.150 P2= 3.17"
1.1	75	0.0286	1.18		**Shallow Concentrated Flow, 75' grass** Short Grass Pasture Kv= 7.0 fps
9.0	175	Total			

Subcatchment PS7: GRASS

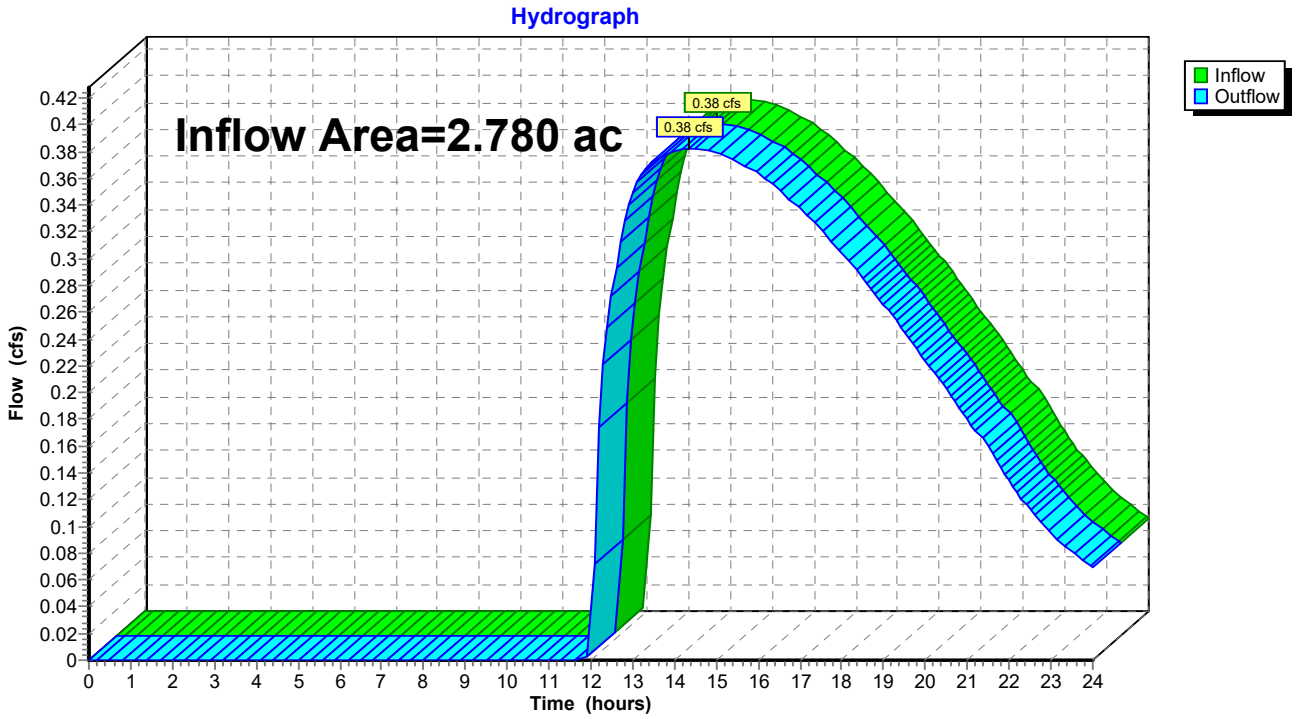


Summary for Reach AP1: DP1

Inflow Area = 2.780 ac, 53.33% Impervious, Inflow Depth > 1.12" for 10-yr event
Inflow = 0.38 cfs @ 14.34 hrs, Volume= 0.259 af
Outflow = 0.38 cfs @ 14.34 hrs, Volume= 0.259 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3

Reach AP1: DP1



Summary for Pond 1P: DETENTION

Inflow Area = 2.780 ac, 53.33% Impervious, Inflow Depth > 1.21" for 10-yr event
Inflow = 2.76 cfs @ 12.12 hrs, Volume= 0.280 af
Outflow = 0.38 cfs @ 14.34 hrs, Volume= 0.259 af, Atten= 86%, Lag= 133.0 min
Primary = 0.38 cfs @ 14.34 hrs, Volume= 0.259 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 71.99' @ 14.34 hrs Surf.Area= 6,502 sf Storage= 5,739 cf
Flood Elev= 74.00' Surf.Area= 9,613 sf Storage= 21,879 cf

Plug-Flow detention time= 201.8 min calculated for 0.259 af (92% of inflow)
Center-of-Mass det. time= 169.7 min (1,014.5 - 844.9)

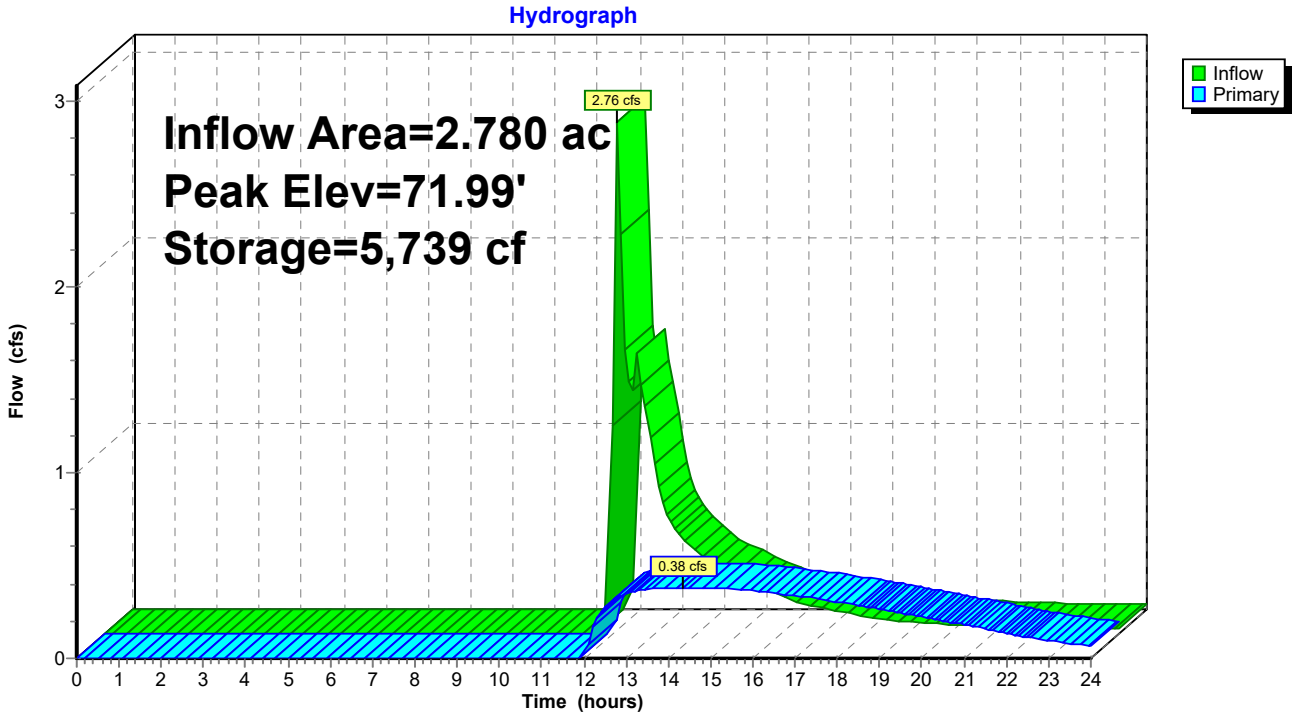
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	21,879 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	5,057	0	0
72.00	6,512	5,785	5,785
73.00	8,032	7,272	13,057
74.00	9,613	8,823	21,879

Device	Routing	Invert	Outlet Devices
#1	Primary	67.00'	**6.0" Round Culvert** L= 26.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 67.00' / 66.60' S= 0.0154 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	73.55'	**12.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	71.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.38 cfs @ 14.34 hrs HW=71.99' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.38 cfs of 1.85 cfs potential flow)
  ├─**2=Orifice/Grate** (Controls 0.00 cfs)
  └─**3=Orifice/Grate** (Orifice Controls 0.38 cfs @ 4.38 fps)

Pond 1P: DETENTION



Summary for Pond 2P: BIO (S)

Inflow Area = 0.156 ac, 56.28% Impervious, Inflow Depth > 1.87" for 10-yr event
Inflow = 0.60 cfs @ 12.10 hrs, Volume= 0.024 af
Outflow = 0.21 cfs @ 12.41 hrs, Volume= 0.018 af, Atten= 65%, Lag= 18.3 min
Primary = 0.21 cfs @ 12.41 hrs, Volume= 0.018 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 73.56' @ 12.41 hrs Surf.Area= 666 sf Storage= 328 cf
Flood Elev= 74.00' Surf.Area= 788 sf Storage= 651 cf

Plug-Flow detention time= 154.9 min calculated for 0.018 af (72% of inflow)
Center-of-Mass det. time= 57.3 min (925.4 - 868.1)

Volume	Invert	Avail.Storage	Storage Description
#1	73.00'	651 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

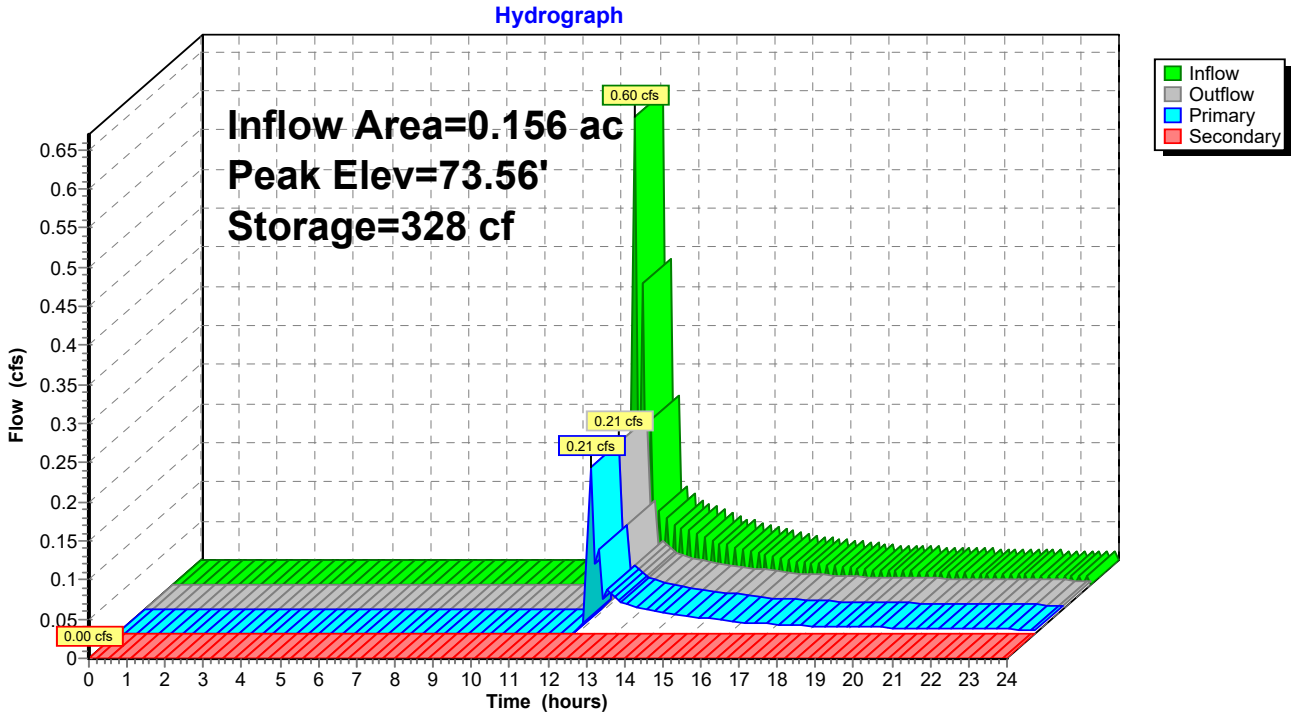
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.00	514	0	0
74.00	788	651	651

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Secondary	68.45'	**6.0" Round Culvert** L= 42.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.45' / 67.00' S= 0.0345 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	73.90'	**12.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.20 cfs @ 12.41 hrs HW=73.55' TW=71.52' (Dynamic Tailwater)
└─**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.20 cfs @ 0.75 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 0.00 cfs of 1.68 cfs potential flow)
└─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: BIO (S)


Hydrograph
Inflow Area=0.156 ac
Peak Elev=73.56'
Storage=328 cf
Inflow
Outflow
Primary
Secondary
0.60 cfs
0.21 cfs
0.21 cfs
0.00 cfs
Flow (cfs)
Time (hours)

Summary for Pond 3P: HYDRO

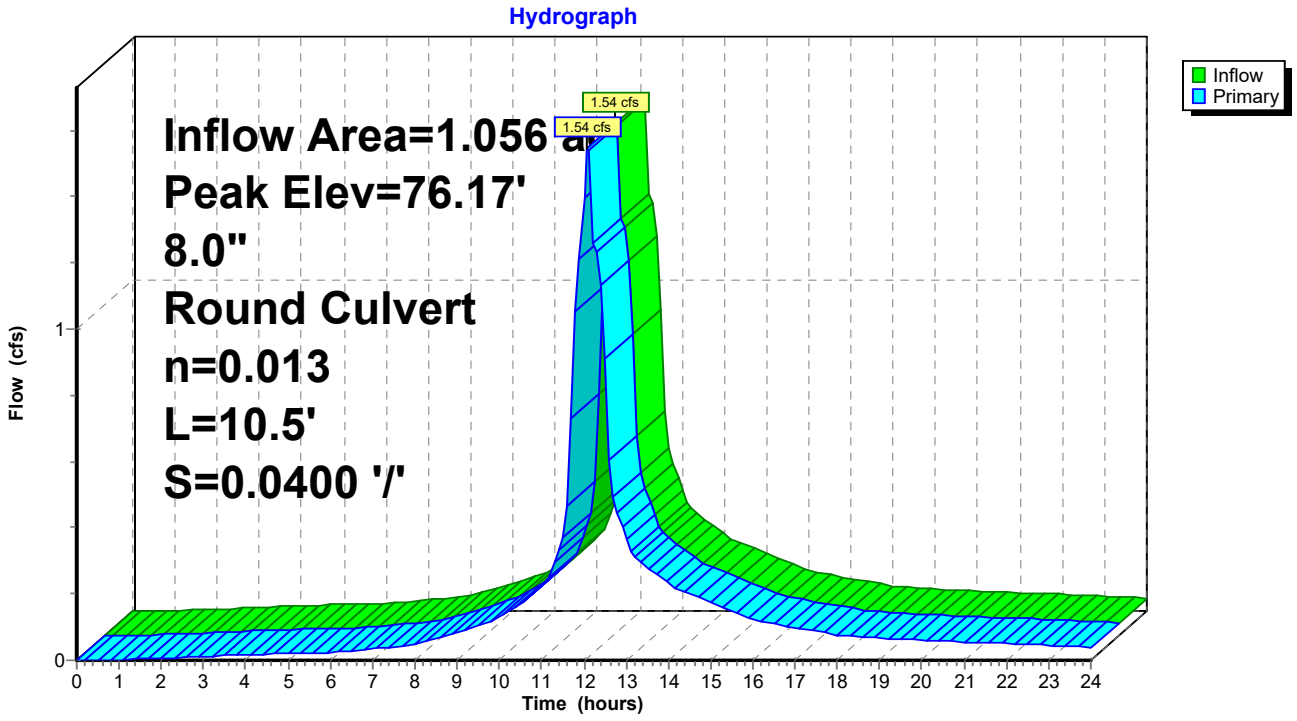
Inflow Area = 1.056 ac, 77.83% Impervious, Inflow Depth > 2.91" for 10-yr event
Inflow = 1.54 cfs @ 12.08 hrs, Volume= 0.256 af
Outflow = 1.54 cfs @ 12.08 hrs, Volume= 0.256 af, Atten= 0%, Lag= 0.0 min
Primary = 1.54 cfs @ 12.08 hrs, Volume= 0.256 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 76.17' @ 12.09 hrs
Flood Elev= 79.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.00'	**8.0" Round Culvert** L= 10.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.00' / 74.58' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.51 cfs @ 12.08 hrs HW=76.14' TW=73.40' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.51 cfs @ 4.34 fps)

Pond 3P: HYDRO



Summary for Pond 4P: PRETREAT PIPE

Inflow Area = 0.156 ac, 56.28% Impervious, Inflow Depth > 2.35" for 10-yr event
Inflow = 0.40 cfs @ 12.10 hrs, Volume= 0.031 af
Outflow = 0.60 cfs @ 12.10 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.1 min
Primary = 0.60 cfs @ 12.10 hrs, Volume= 0.024 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 75.37' @ 12.10 hrs Surf.Area= 0 sf Storage= 269 cf
Flood Elev= 75.62' Surf.Area= 0 sf Storage= 269 cf

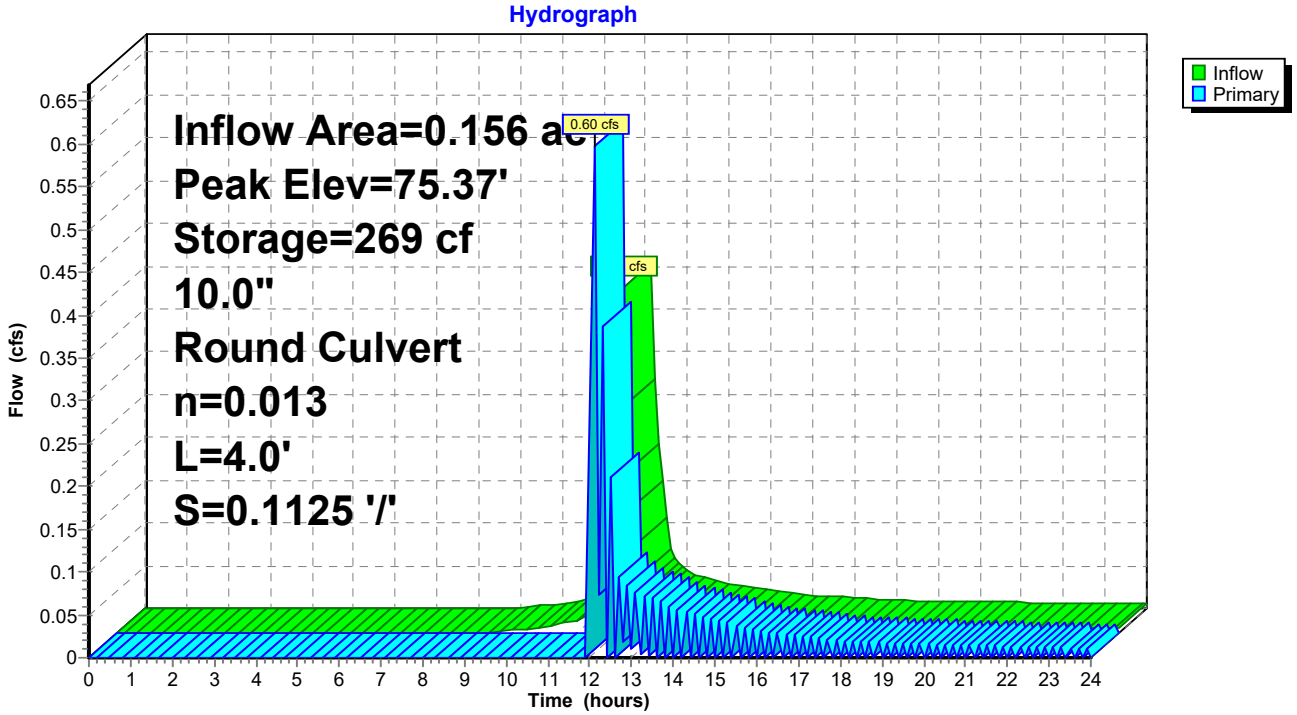
Plug-Flow detention time= 114.1 min calculated for 0.024 af (80% of inflow)
Center-of-Mass det. time= 35.5 min (868.1 - 832.5)

Volume	Invert	Avail.Storage	Storage Description
#1	71.12'	269 cf	**42.0" Round Pipe Storage** L= 28.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	74.95'	**10.0" Round Culvert** L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.95' / 74.50' S= 0.1125 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.57 cfs @ 12.10 hrs HW=75.36' TW=73.21' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.57 cfs @ 2.17 fps)

Pond 4P: PRETREAT PIPE



Summary for Pond 5P: MH1

Inflow Area = 1.056 ac, 77.83% Impervious, Inflow Depth > 3.39" for 10-yr event
Inflow = 3.63 cfs @ 12.10 hrs, Volume= 0.298 af
Outflow = 3.63 cfs @ 12.10 hrs, Volume= 0.298 af, Atten= 0%, Lag= 0.0 min
Primary = 1.54 cfs @ 12.08 hrs, Volume= 0.256 af
Secondary = 2.09 cfs @ 12.11 hrs, Volume= 0.042 af

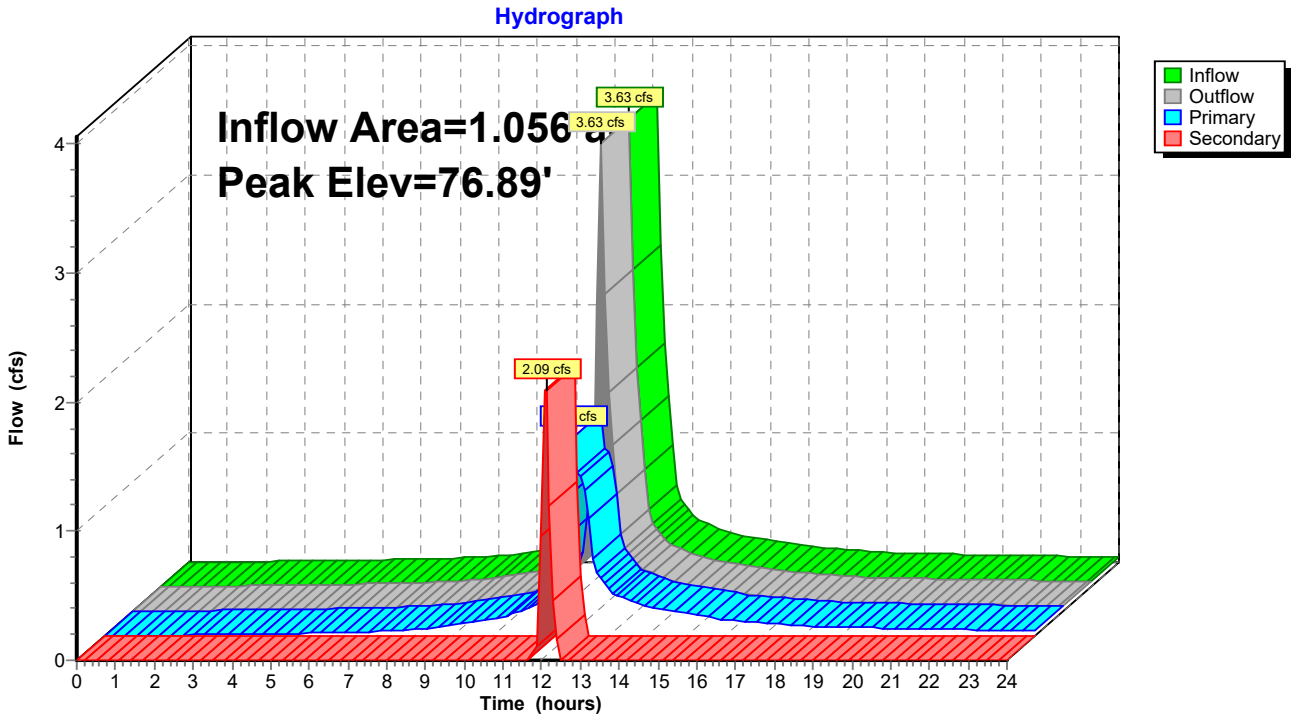
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 76.89' @ 12.11 hrs
Flood Elev= 80.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.20'	**8.0" Round Culvert** L= 9.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.20' / 75.03' S= 0.0189 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Secondary	76.08'	**12.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.08' / 74.90' S= 0.0562 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.40 cfs @ 12.08 hrs HW=76.84' TW=76.14' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.40 cfs @ 4.02 fps)

Secondary OutFlow Max=2.04 cfs @ 12.11 hrs HW=76.88' TW=71.19' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 2.04 cfs @ 3.04 fps)

Pond 5P: MH1



Summary for Pond 6P: BIO (NW)

Inflow Area = 0.295 ac, 59.02% Impervious, Inflow Depth > 2.43" for 10-yr event
Inflow = 0.79 cfs @ 12.10 hrs, Volume= 0.060 af
Outflow = 0.72 cfs @ 12.14 hrs, Volume= 0.050 af, Atten= 9%, Lag= 2.5 min
Primary = 0.72 cfs @ 12.14 hrs, Volume= 0.050 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 80.65' @ 12.14 hrs Surf.Area= 956 sf Storage= 541 cf
Flood Elev= 81.00' Surf.Area= 1,085 sf Storage= 903 cf

Plug-Flow detention time= 99.5 min calculated for 0.050 af (84% of inflow)
Center-of-Mass det. time= 32.4 min (862.2 - 829.9)

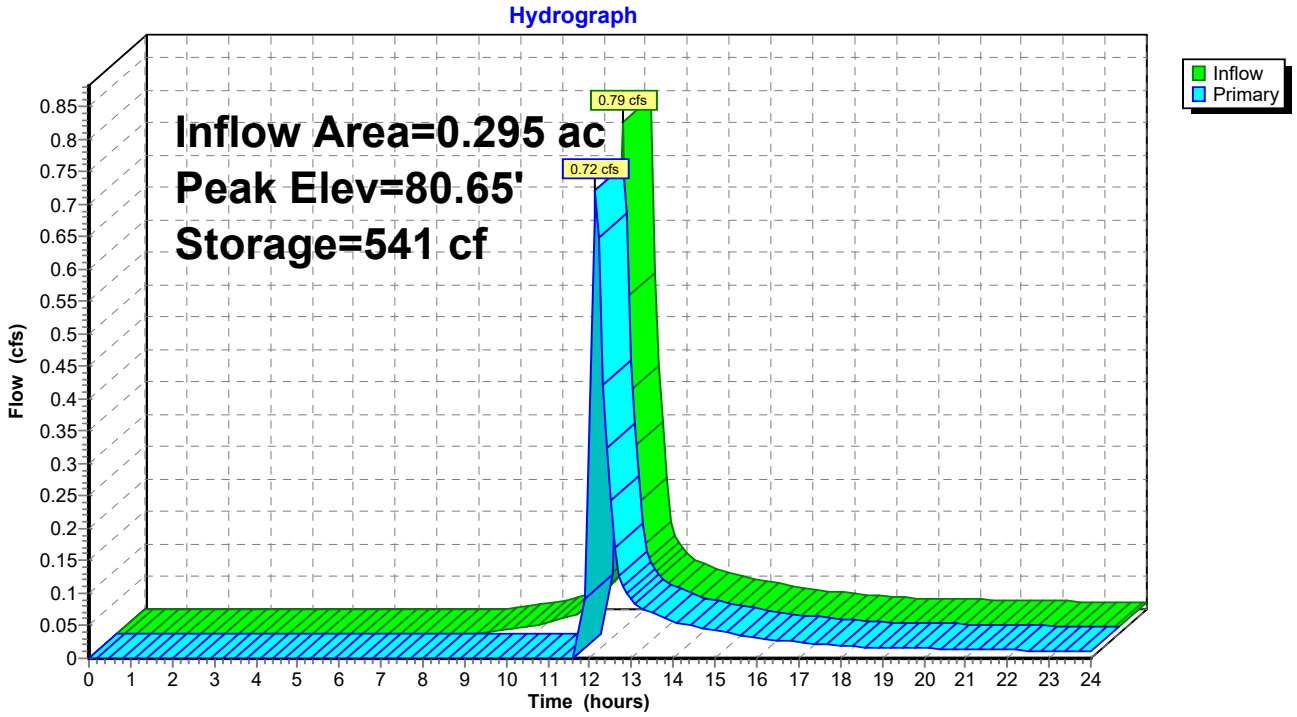
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	903 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
80.00	720	0	0
81.00	1,085	903	903

Device	Routing	Invert	Outlet Devices
#1	Primary	76.50'	**6.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.50' / 76.25' S= 0.0179 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	80.50'	**12.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.67 cfs @ 12.14 hrs HW=80.64' TW=75.92' (Dynamic Tailwater)
↑**1=Culvert** (Passes 0.67 cfs of 1.86 cfs potential flow)
↑**2=Orifice/Grate** (Weir Controls 0.67 cfs @ 1.21 fps)

Pond 6P: BIO (NW)



Summary for Pond 7P: CB1

Inflow Area = 0.536 ac, 74.33% Impervious, Inflow Depth > 3.06" for 10-yr event
Inflow = 1.70 cfs @ 12.11 hrs, Volume= 0.137 af
Outflow = 1.70 cfs @ 12.11 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min
Primary = 0.54 cfs @ 12.12 hrs, Volume= 0.111 af
Secondary = 1.17 cfs @ 12.11 hrs, Volume= 0.026 af

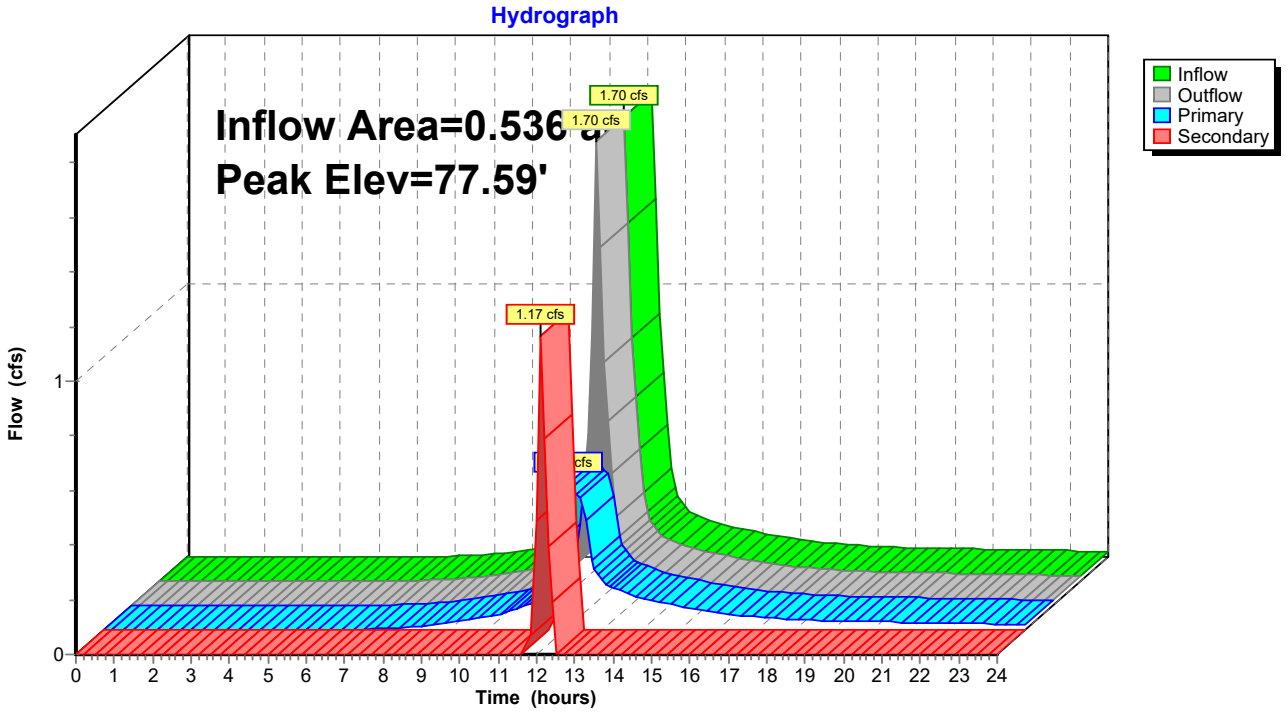
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 77.59' @ 12.12 hrs
Flood Elev= 80.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	76.50'	**6.0" Round Culvert** L= 187.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.50' / 75.20' S= 0.0069 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	77.05'	**15.0" Round Culvert** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 77.05' / 76.55' S= 0.0077 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.53 cfs @ 12.12 hrs HW=77.57' TW=75.63' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.53 cfs @ 2.71 fps)

Secondary OutFlow Max=1.10 cfs @ 12.11 hrs HW=77.57' TW=75.94' (Dynamic Tailwater)
└**2=Culvert** (Barrel Controls 1.10 cfs @ 3.38 fps)

Pond 7P: CB1



Summary for Pond 8P: PIPE INFILTRATORS

Inflow Area = 1.593 ac, 76.65% Impervious, Inflow Depth > 2.70" for 10-yr event
Inflow = 2.08 cfs @ 12.09 hrs, Volume= 0.358 af
Outflow = 0.80 cfs @ 12.70 hrs, Volume= 0.230 af, Atten= 61%, Lag= 36.6 min
Discarded = 0.11 cfs @ 12.03 hrs, Volume= 0.118 af
Primary = 0.73 cfs @ 12.70 hrs, Volume= 0.113 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 74.68' @ 12.70 hrs Surf.Area= 1,585 sf Storage= 6,519 cf
Flood Elev= 75.25' Surf.Area= 0 sf Storage= 7,138 cf

Plug-Flow detention time= 205.2 min calculated for 0.229 af (64% of inflow)
Center-of-Mass det. time= 91.0 min (902.9 - 811.9)

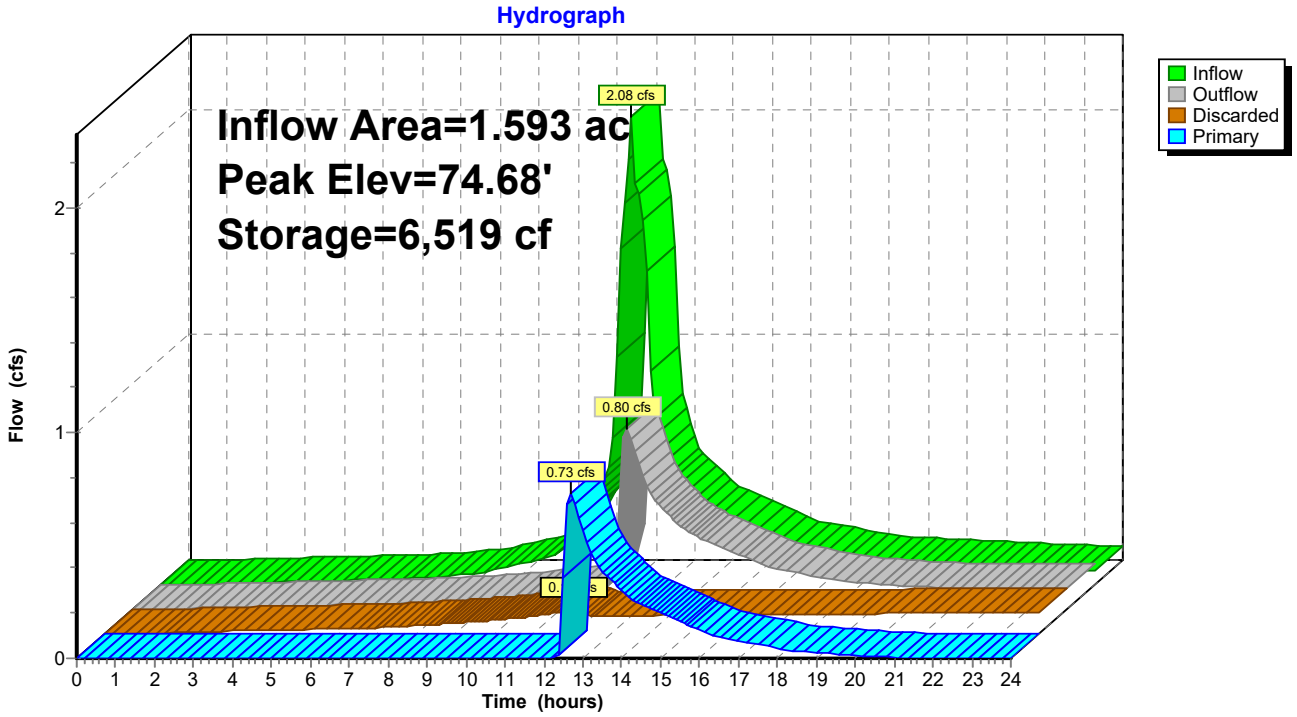
Volume	Invert	Avail.Storage	Storage Description
#1	71.25'	7,138 cf	**48.0" Round Pipe Storage** x 4 L= 142.0'

Device	Routing	Invert	Outlet Devices
#1	Discarded	71.25'	**2.000 in/hr Exfiltration over Surface area**
#2	Primary	74.25'	**12.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.25' / 73.00' S= 0.0357 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.11 cfs @ 12.03 hrs HW=73.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.73 cfs @ 12.70 hrs HW=74.68' TW=71.72' (Dynamic Tailwater)
↑**2=Culvert** (Inlet Controls 0.73 cfs @ 2.24 fps)

Pond 8P: PIPE INFILTRATORS



Summary for Pond 9P: MH3

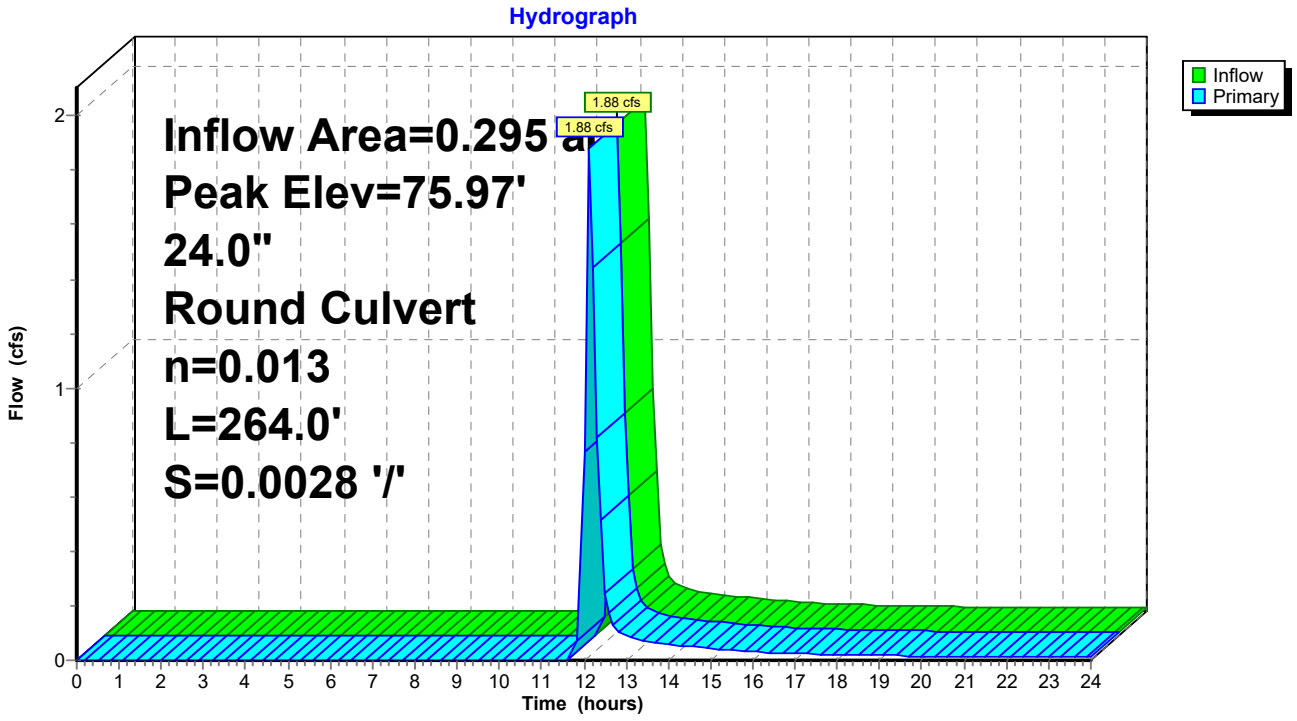
Inflow Area = 0.295 ac, 59.02% Impervious, Inflow Depth > 3.11" for 10-yr event
Inflow = 1.88 cfs @ 12.12 hrs, Volume= 0.076 af
Outflow = 1.88 cfs @ 12.12 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min
Primary = 1.88 cfs @ 12.12 hrs, Volume= 0.076 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 75.97' @ 12.13 hrs
Flood Elev= 83.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.25'	**24.0" Round Culvert** L= 264.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.25' / 74.50' S= 0.0028 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.74 cfs @ 12.12 hrs HW=75.94' TW=73.82' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.74 cfs @ 2.73 fps)

Pond 9P: MH3



Summary for Pond 10P: PIPE DETENTION

Inflow Area = 0.295 ac, 59.02% Impervious, Inflow Depth > 3.11" for 10-yr event
Inflow = 1.88 cfs @ 12.12 hrs, Volume= 0.076 af
Outflow = 0.83 cfs @ 12.32 hrs, Volume= 0.076 af, Atten= 56%, Lag= 11.8 min
Primary = 0.83 cfs @ 12.32 hrs, Volume= 0.076 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 74.16' @ 12.32 hrs Surf.Area= 1,223 sf Storage= 988 cf
Flood Elev= 76.55' Surf.Area= 0 sf Storage= 3,608 cf

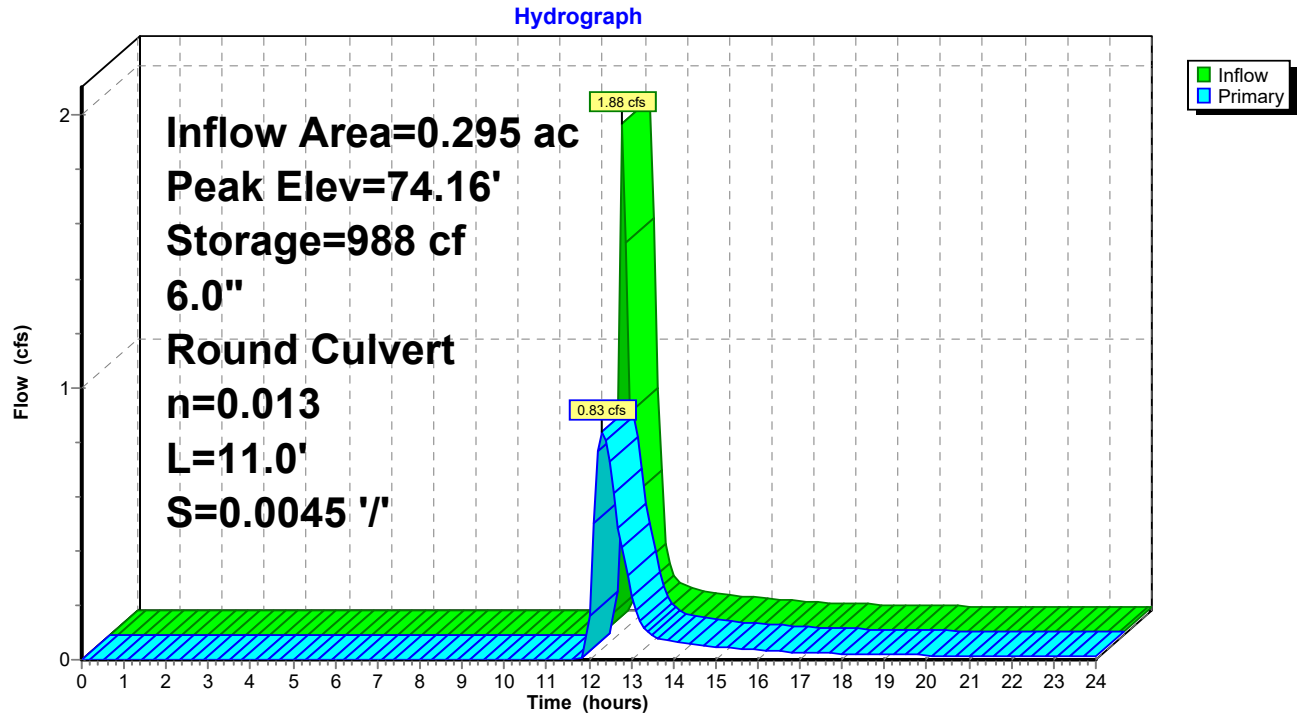
Plug-Flow detention time= 19.2 min calculated for 0.076 af (99% of inflow)
Center-of-Mass det. time= 15.6 min (832.1 - 816.4)

Volume	Invert	Avail.Storage	Storage Description
#1	73.05'	3,608 cf	**42.0" Round Pipe Storage** x 3 L= 125.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	73.05'	**6.0" Round Culvert** L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.05' / 73.00' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.83 cfs @ 12.32 hrs HW=74.15' TW=71.46' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.83 cfs @ 4.21 fps)

Pond 10P: PIPE DETENTION



Summary for Pond 11P: PRETREAT PIPE

Inflow Area = 0.536 ac, 74.33% Impervious, Inflow Depth > 2.47" for 10-yr event
Inflow = 0.54 cfs @ 12.12 hrs, Volume= 0.111 af
Outflow = 0.54 cfs @ 12.12 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.1 min
Primary = 0.54 cfs @ 12.12 hrs, Volume= 0.102 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 75.63' @ 12.12 hrs Surf.Area= 40 sf Storage= 402 cf
Flood Elev= 75.70' Surf.Area= 0 sf Storage= 404 cf

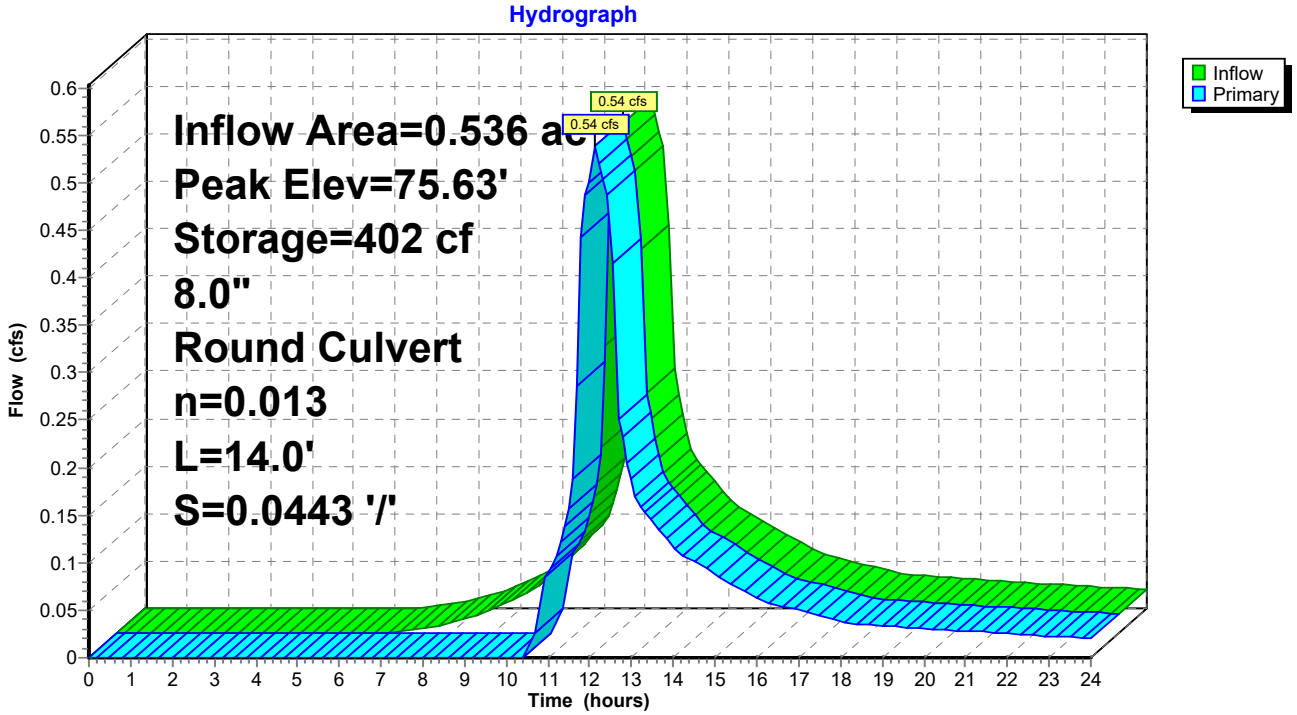
Plug-Flow detention time= 62.8 min calculated for 0.102 af (92% of inflow)
Center-of-Mass det. time= 22.7 min (853.8 - 831.1)

Volume	Invert	Avail.Storage	Storage Description
#1	72.20'	404 cf	**42.0" Round Pipe Storage** L= 42.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.20'	**8.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.20' / 74.58' S= 0.0443 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.53 cfs @ 12.12 hrs HW=75.63' TW=73.51' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.53 cfs @ 2.24 fps)

Pond 11P: PRETREAT PIPE



Summary for Subcatchment PS1: ENTRANCE

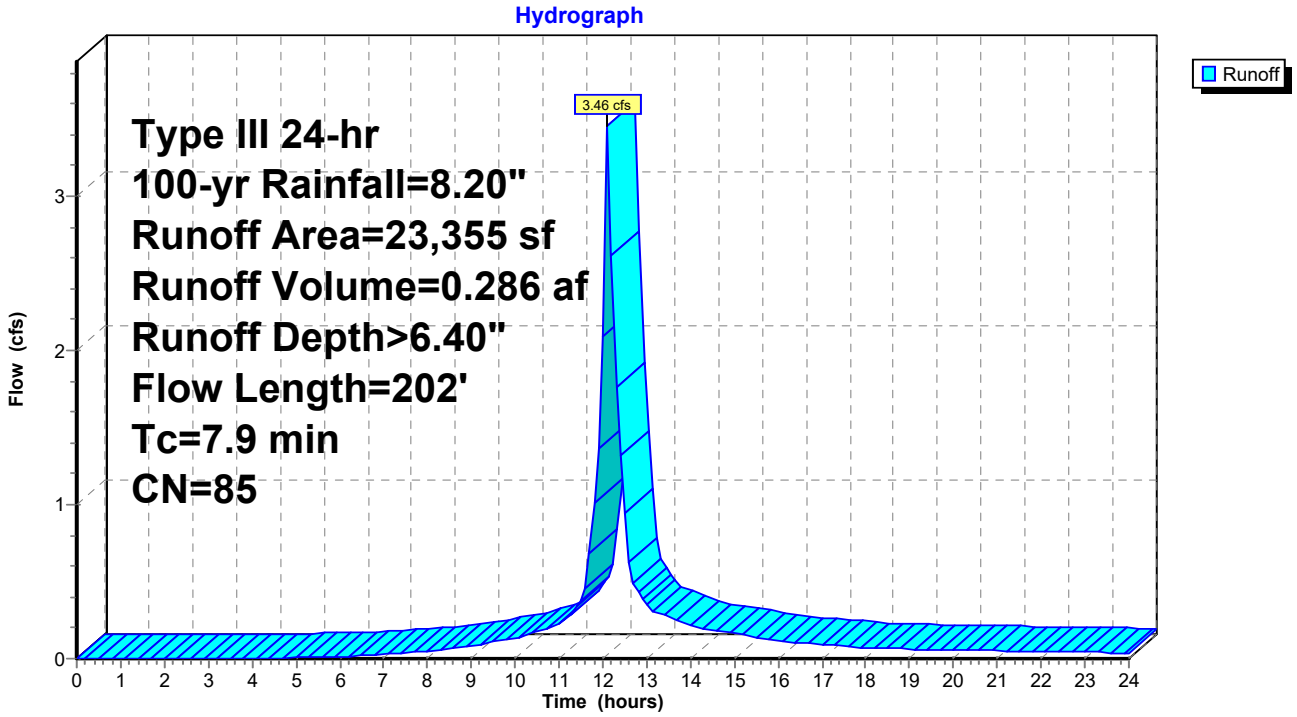
Runoff = 3.46 cfs @ 12.11 hrs, Volume= 0.286 af, Depth> 6.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
17,360	98	Paved parking, HSG A
5,995	49	50-75% Grass cover, Fair, HSG A
23,355	85	Weighted Average
5,995		25.67% Pervious Area
17,360		74.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.0400	0.22		**Sheet Flow, 100' sheet flow grass** Grass: Short n= 0.150 P2= 3.17"
0.4	102	0.0350	3.80		**Shallow Concentrated Flow, 102' Shallow concentrated paveme** Paved Kv= 20.3 fps
7.9	202	Total			

Subcatchment PS1: ENTRANCE



Summary for Subcatchment PS2: MID PARKING

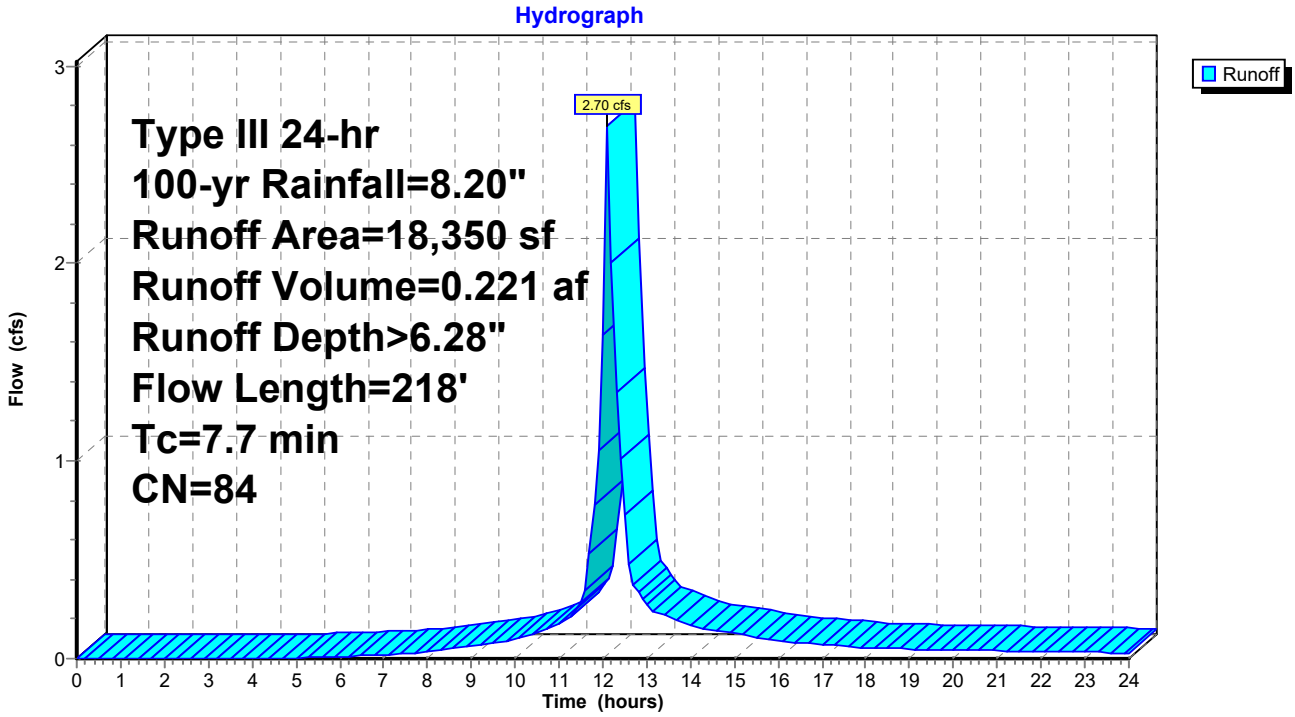
Runoff = 2.70 cfs @ 12.11 hrs, Volume= 0.221 af, Depth> 6.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
12,975	98	Paved parking, HSG A
5,375	49	50-75% Grass cover, Fair, HSG A
18,350	84	Weighted Average
5,375		29.29% Pervious Area
12,975		70.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.0450	0.23		**Sheet Flow, 100' sheet flow grass** Grass: Short n= 0.150 P2= 3.17"
0.6	118	0.0260	3.27		**Shallow Concentrated Flow, 118' paved shallow concentration** Paved Kv= 20.3 fps
7.7	218	Total			

Subcatchment PS2: MID PARKING



Summary for Subcatchment PS3: W PARKING

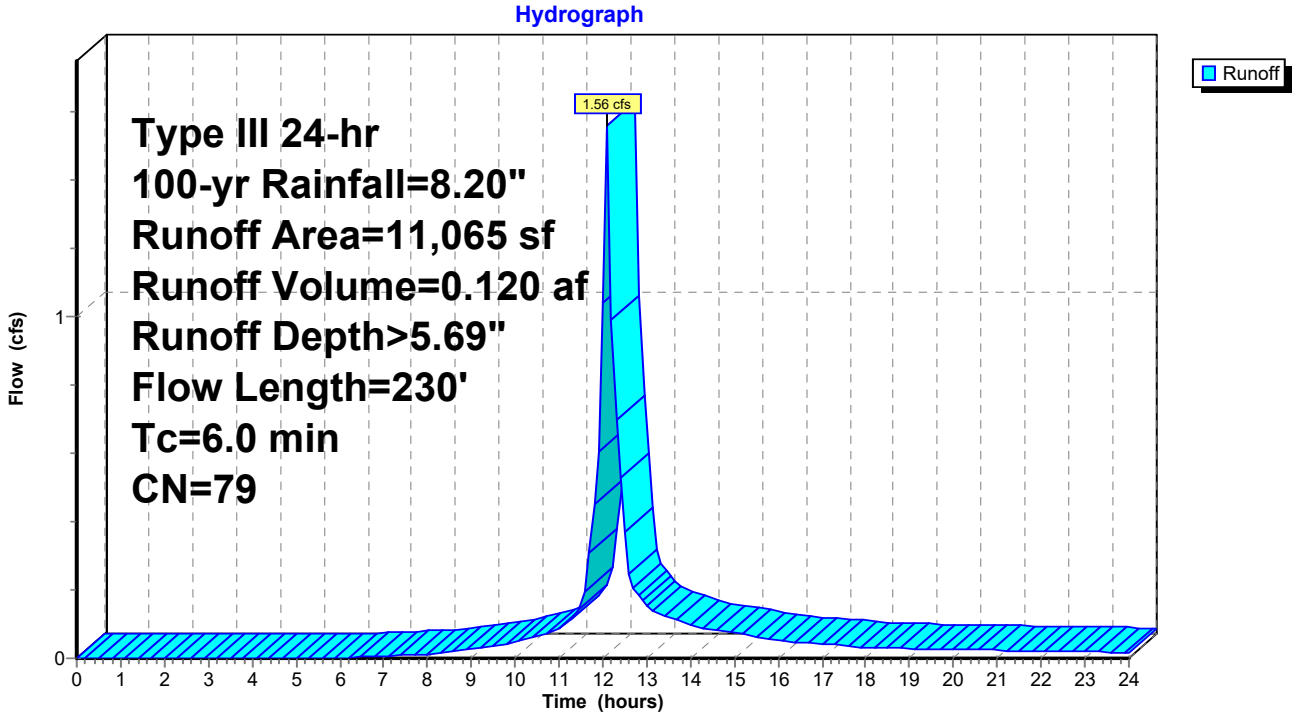
Runoff = 1.56 cfs @ 12.10 hrs, Volume= 0.120 af, Depth> 5.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
6,240	98	Paved parking, HSG A
1,755	49	50-75% Grass cover, Fair, HSG A
3,070	57	Woods/grass comb., Poor, HSG A
11,065	79	Weighted Average
4,825		43.61% Pervious Area
6,240		56.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	63	0.1349	0.33		**Sheet Flow, 63' grass sheet flow** Grass: Short n= 0.150 P2= 3.17"
0.9	167	0.0239	3.14		**Shallow Concentrated Flow, 167' paved** Paved Kv= 20.3 fps
4.1	230	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PS3: W PARKING



Summary for Subcatchment PS4: EXIT GARAGE

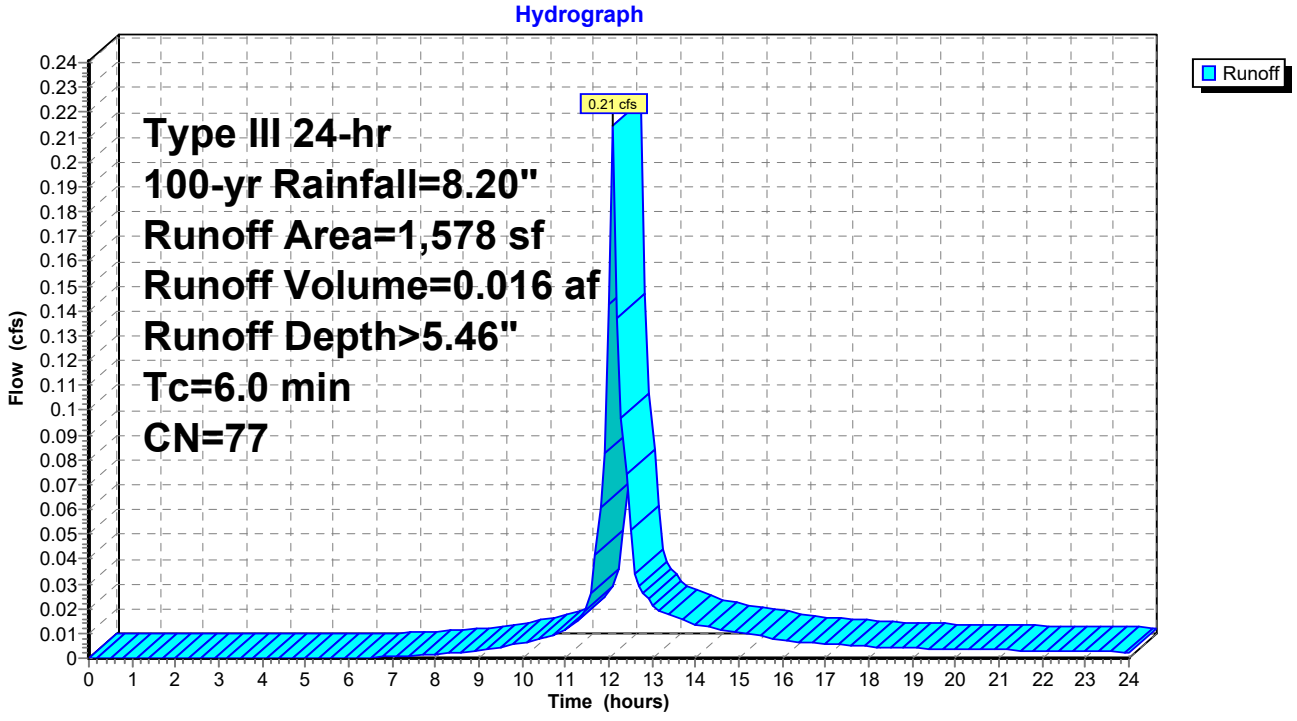
Runoff = 0.21 cfs @ 12.10 hrs, Volume= 0.016 af, Depth> 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
892	98	Paved parking, HSG A
686	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
1,578	77	Weighted Average
686		43.47% Pervious Area
892		56.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Subcatchment PS4: EXIT GARAGE



Summary for Subcatchment PS5: ENTRANCE GARAGE

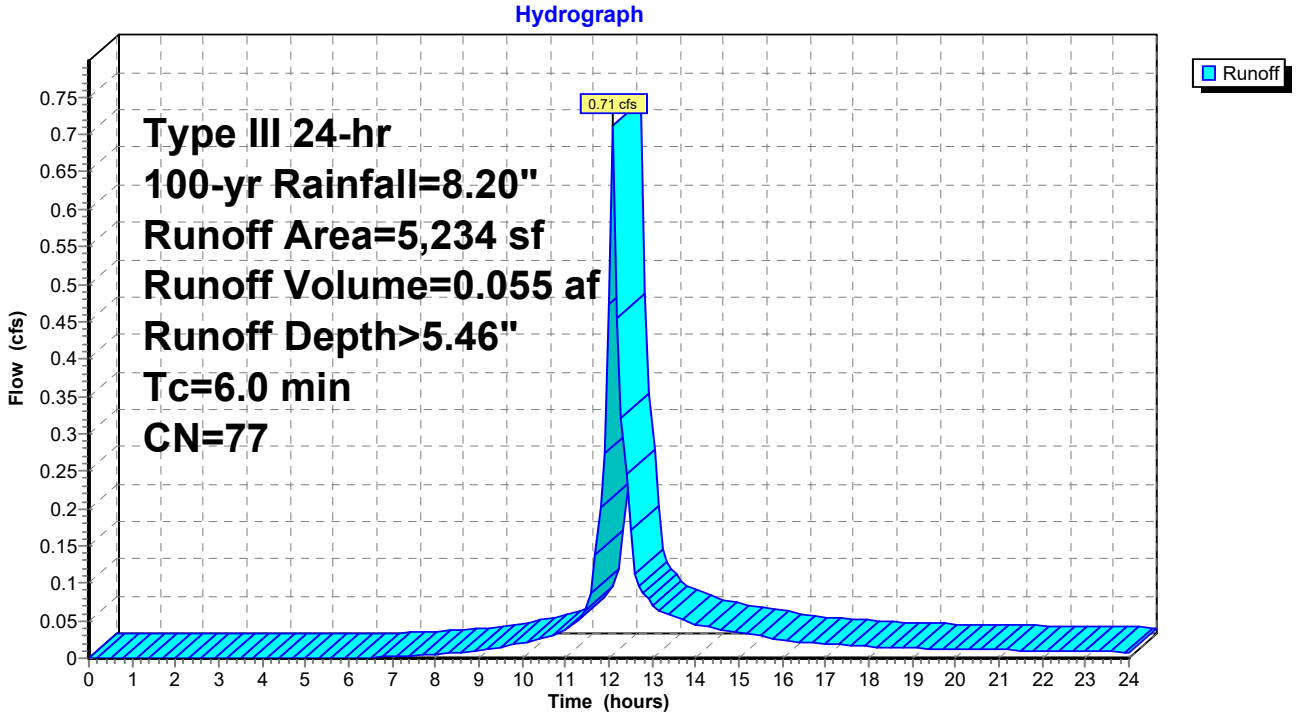
Runoff = 0.71 cfs @ 12.10 hrs, Volume= 0.055 af, Depth> 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
2,942	98	Paved parking, HSG A
2,292	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
5,234	77	Weighted Average
2,292		43.79% Pervious Area
2,942		56.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment PS5: ENTRANCE GARAGE



Summary for Subcatchment PS6A: BUILDING

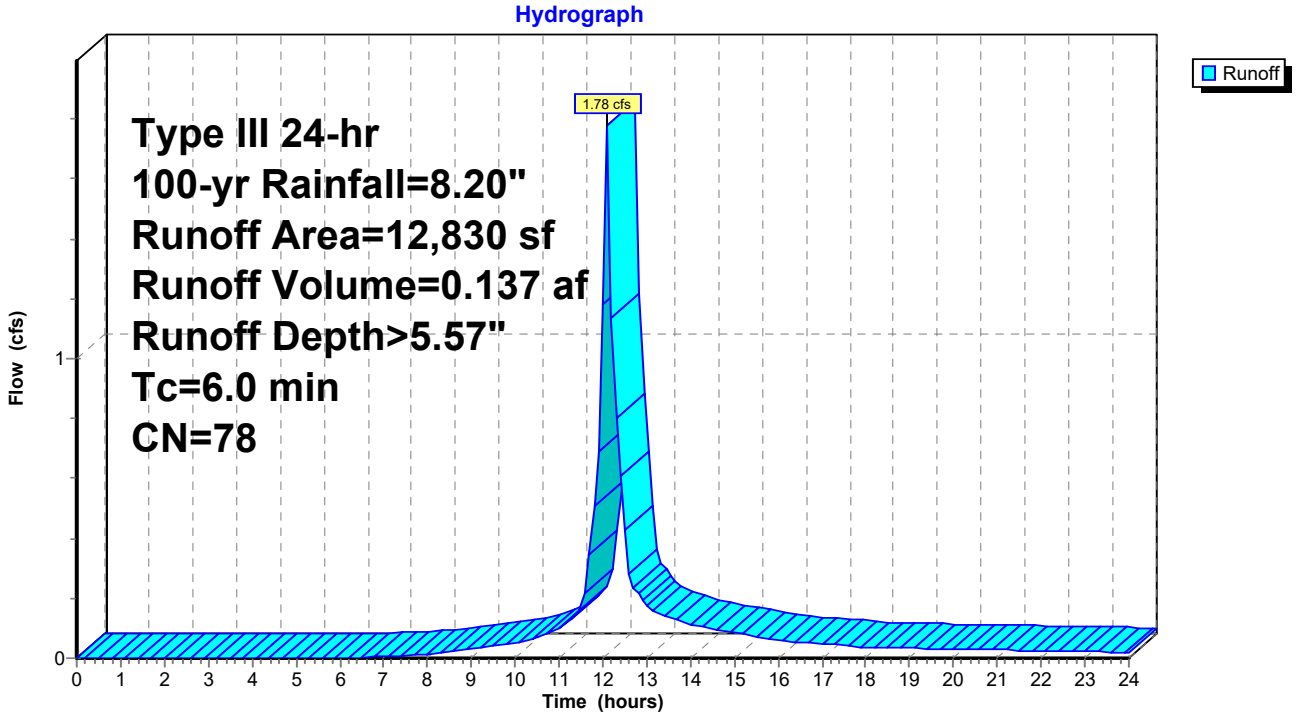
Runoff = 1.78 cfs @ 12.10 hrs, Volume= 0.137 af, Depth> 5.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
7,572	98	Paved parking, HSG A
5,258	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
12,830	78	Weighted Average
5,258		40.98% Pervious Area
7,572		59.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, roof**

Subcatchment PS6A: BUILDING



Summary for Subcatchment PS6B: BUILDING

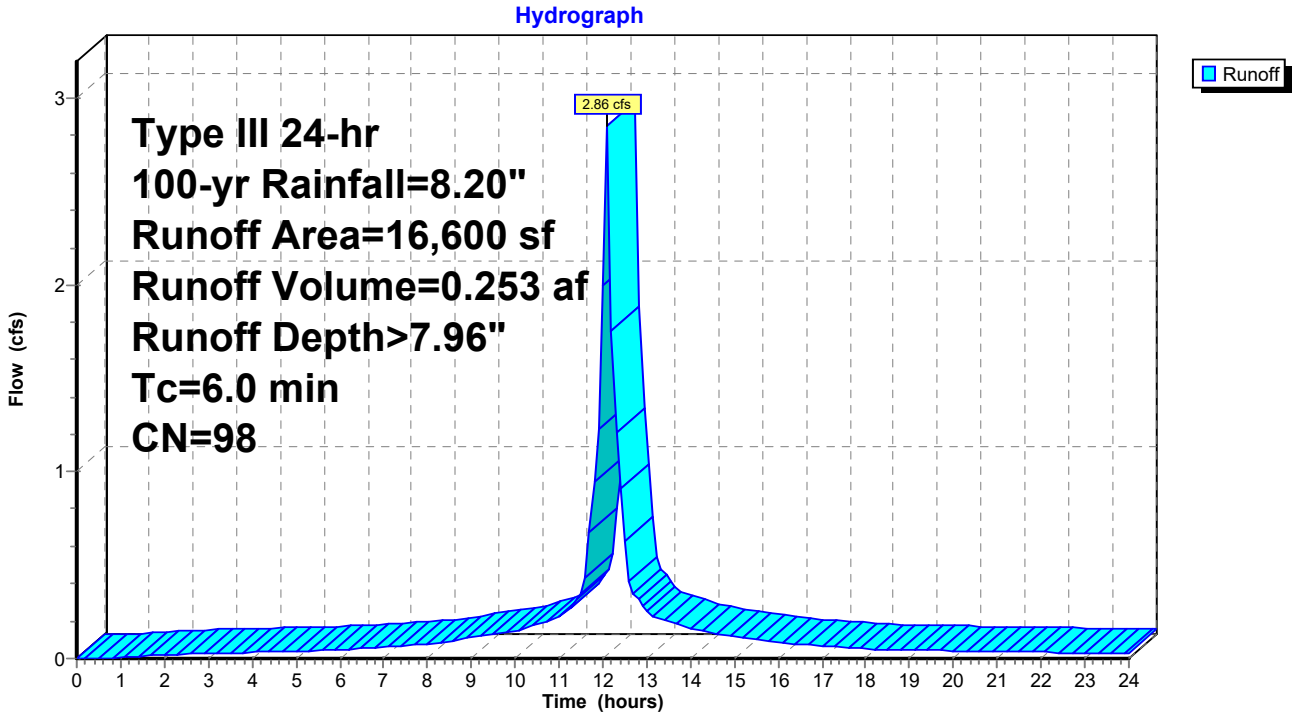
Runoff = 2.86 cfs @ 12.09 hrs, Volume= 0.253 af, Depth> 7.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
16,600	98	Paved parking, HSG A
0	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
16,600	98	Weighted Average
16,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, roof**

Subcatchment PS6B: BUILDING



Summary for Subcatchment PS7: GRASS

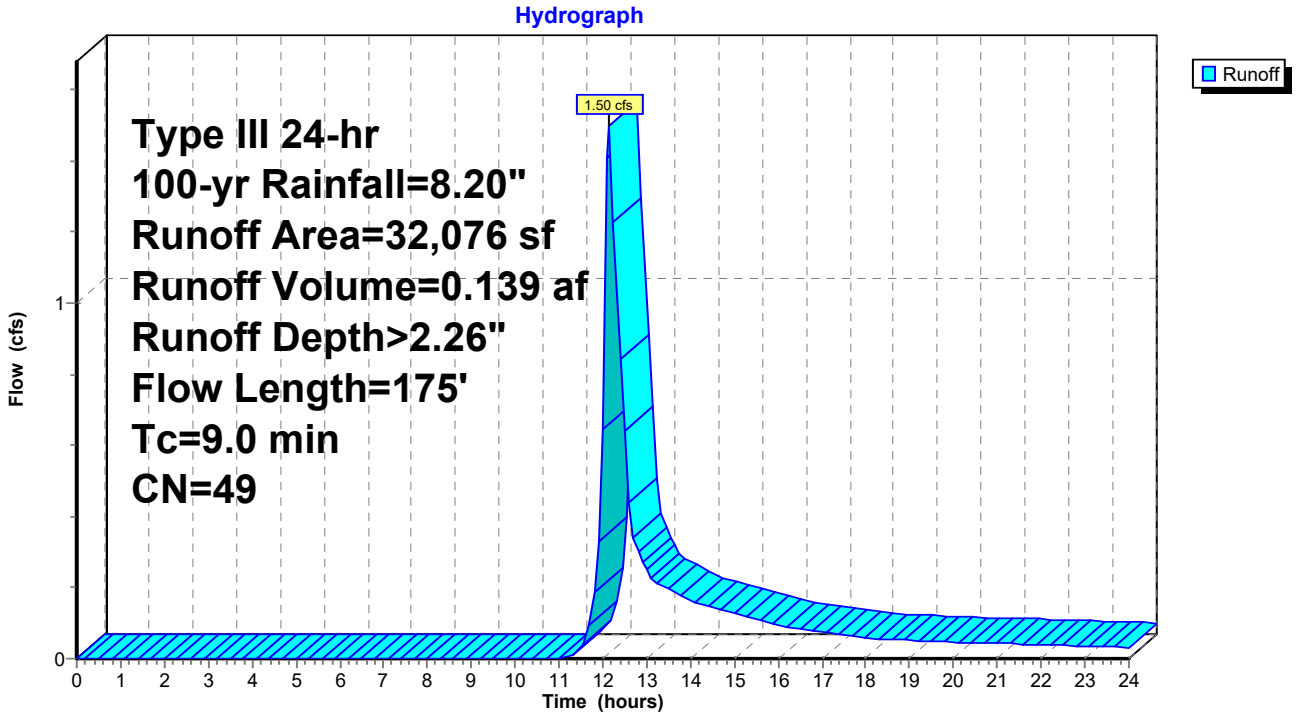
Runoff = 1.50 cfs @ 12.15 hrs, Volume= 0.139 af, Depth> 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs
Type III 24-hr 100-yr Rainfall=8.20"

Area (sf)	CN	Description
0	98	Paved parking, HSG A
32,076	49	50-75% Grass cover, Fair, HSG A
0	84	50-75% Grass cover, Fair, HSG D
32,076	49	Weighted Average
32,076		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	100	0.0350	0.21		**Sheet Flow, 100' grass sheet flow** Grass: Short n= 0.150 P2= 3.17"
1.1	75	0.0286	1.18		**Shallow Concentrated Flow, 75' grass** Short Grass Pasture Kv= 7.0 fps
9.0	175	Total			

Subcatchment PS7: GRASS

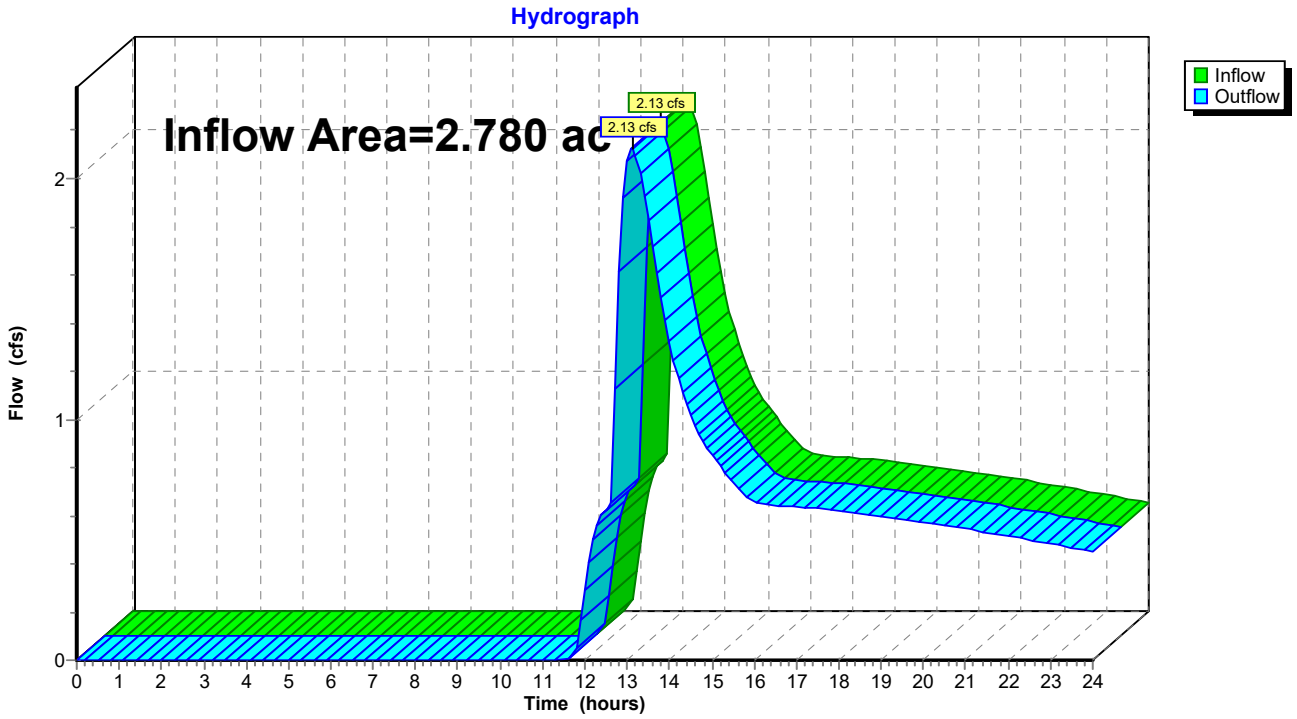


Summary for Reach AP1: DP1

Inflow Area = 2.780 ac, 53.33% Impervious, Inflow Depth > 3.25" for 100-yr event
Inflow = 2.13 cfs @ 13.11 hrs, Volume= 0.752 af
Outflow = 2.13 cfs @ 13.11 hrs, Volume= 0.752 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3

Reach AP1: DP1



Summary for Pond 1P: DETENTION

Inflow Area = 2.780 ac, 53.33% Impervious, Inflow Depth > 4.02" for 100-yr event
Inflow = 10.86 cfs @ 12.12 hrs, Volume= 0.932 af
Outflow = 2.13 cfs @ 13.11 hrs, Volume= 0.752 af, Atten= 80%, Lag= 59.5 min
Primary = 2.13 cfs @ 13.11 hrs, Volume= 0.752 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 73.78' @ 13.11 hrs Surf.Area= 9,266 sf Storage= 19,807 cf
Flood Elev= 74.00' Surf.Area= 9,613 sf Storage= 21,879 cf

Plug-Flow detention time= 243.2 min calculated for 0.752 af (81% of inflow)
Center-of-Mass det. time= 178.5 min (1,009.0 - 830.4)

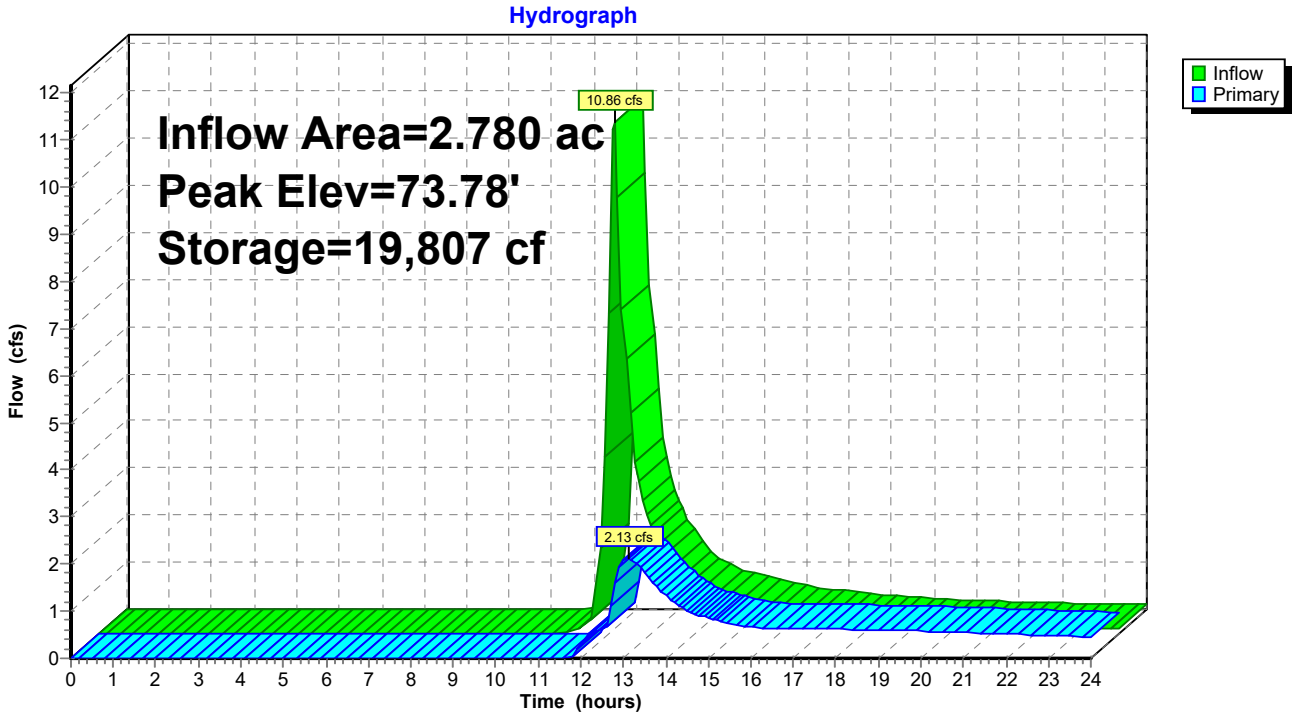
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	21,879 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	5,057	0	0
72.00	6,512	5,785	5,785
73.00	8,032	7,272	13,057
74.00	9,613	8,823	21,879

Device	Routing	Invert	Outlet Devices
#1	Primary	67.00'	**6.0" Round Culvert** L= 26.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 67.00' / 66.60' S= 0.0154 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	73.55'	**12.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	71.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=2.12 cfs @ 13.11 hrs HW=73.78' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 2.12 cfs of 2.16 cfs potential flow)
  ├─**2=Orifice/Grate** (Weir Controls 1.44 cfs @ 1.57 fps)
  └─**3=Orifice/Grate** (Orifice Controls 0.68 cfs @ 7.78 fps)

Pond 1P: DETENTION



Summary for Pond 2P: BIO (S)

Inflow Area = 0.156 ac, 56.28% Impervious, Inflow Depth > 4.98" for 100-yr event
Inflow = 0.89 cfs @ 12.10 hrs, Volume= 0.065 af
Outflow = 0.86 cfs @ 12.12 hrs, Volume= 0.058 af, Atten= 3%, Lag= 1.3 min
Primary = 0.86 cfs @ 12.12 hrs, Volume= 0.060 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 73.78' @ 13.13 hrs Surf.Area= 728 sf Storage= 485 cf
Flood Elev= 74.00' Surf.Area= 788 sf Storage= 651 cf

Plug-Flow detention time= 73.8 min calculated for 0.058 af (89% of inflow)
Center-of-Mass det. time= 25.2 min (854.7 - 829.4)

Volume	Invert	Avail.Storage	Storage Description
#1	73.00'	651 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

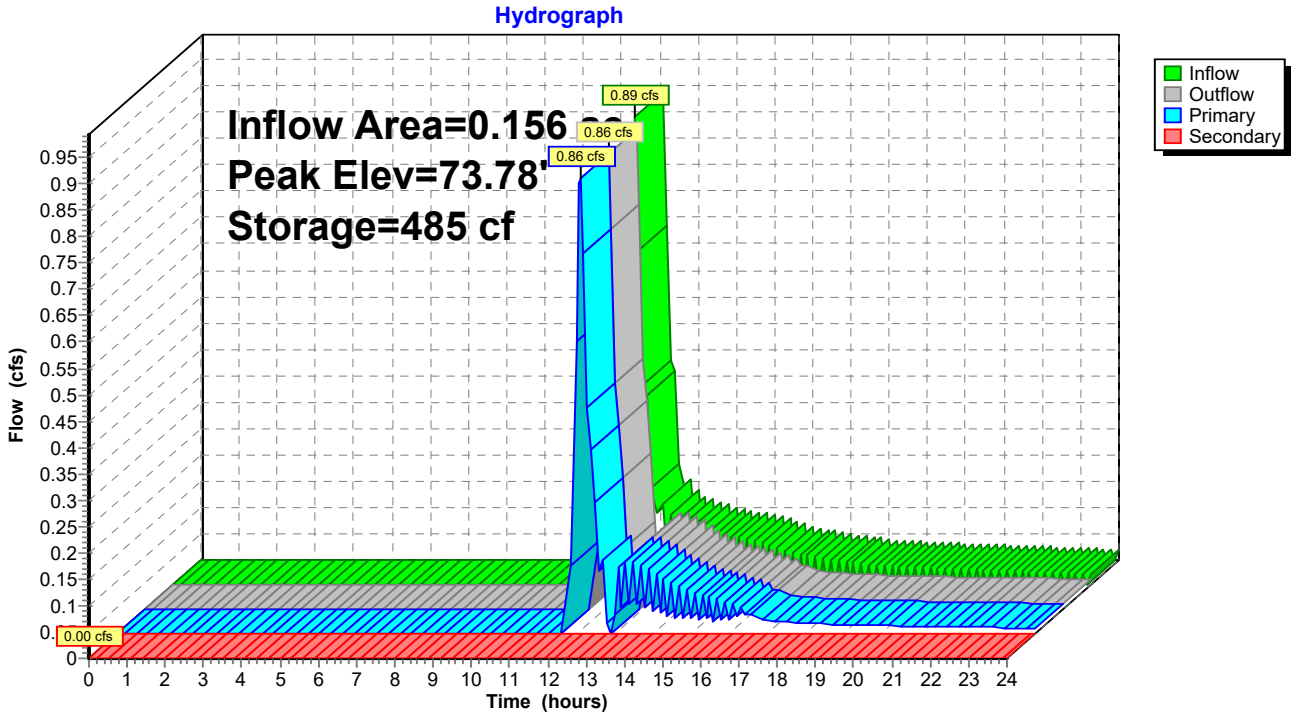
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.00	514	0	0
74.00	788	651	651

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Secondary	68.45'	**6.0" Round Culvert** L= 42.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.45' / 67.00' S= 0.0345 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	73.90'	**12.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.83 cfs @ 12.12 hrs HW=73.64' TW=72.22' (Dynamic Tailwater)
└─**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.83 cfs @ 1.21 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 0.00 cfs of 1.68 cfs potential flow)
└─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: BIO (S)


Hydrograph
Inflow Area=0.156
Peak Elev=73.78'
Storage=485 cf
0.89 cfs
0.86 cfs
0.86 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond 3P: HYDRO

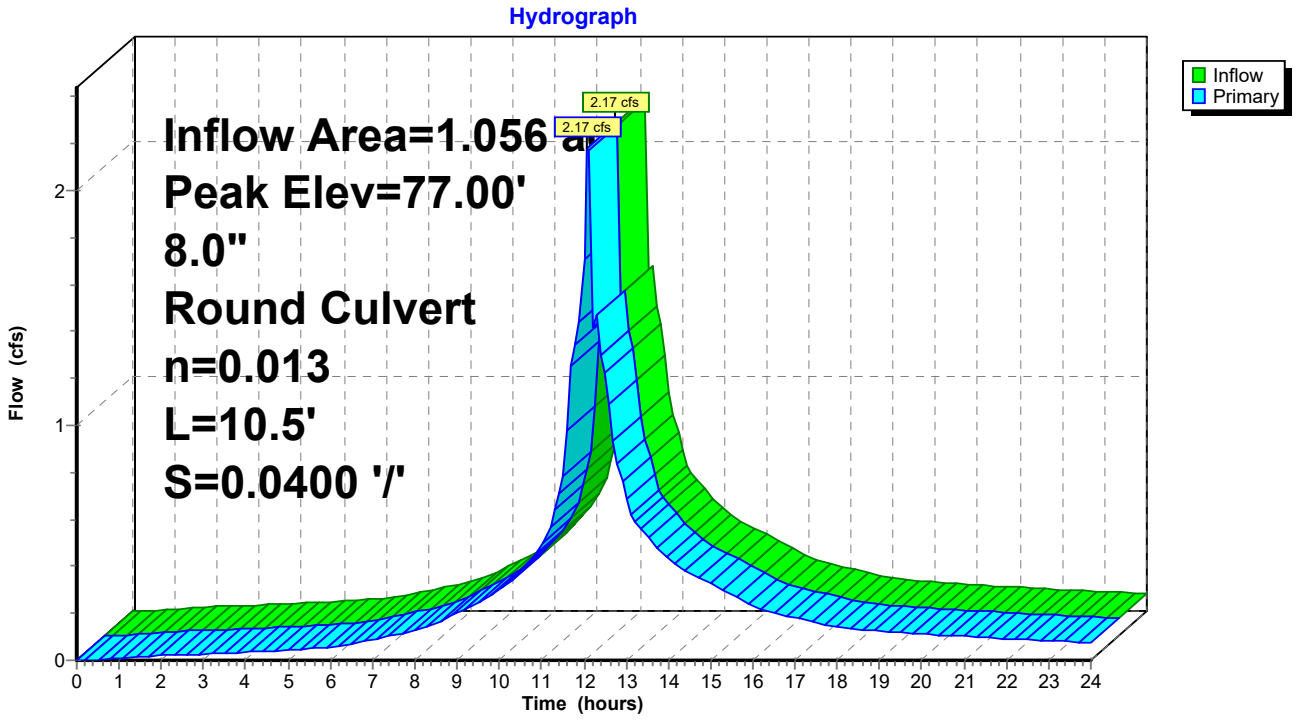
Inflow Area = 1.056 ac, 77.83% Impervious, Inflow Depth > 5.12" for 100-yr event
Inflow = 2.17 cfs @ 12.09 hrs, Volume= 0.451 af
Outflow = 2.17 cfs @ 12.09 hrs, Volume= 0.451 af, Atten= 0%, Lag= 0.0 min
Primary = 2.17 cfs @ 12.09 hrs, Volume= 0.451 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 77.00' @ 12.09 hrs
Flood Elev= 79.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.00'	**8.0" Round Culvert** L= 10.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.00' / 74.58' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=2.12 cfs @ 12.09 hrs HW=76.92' TW=75.11' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.12 cfs @ 6.06 fps)

Pond 3P: HYDRO



Summary for Pond 4P: PRETREAT PIPE

Inflow Area = 0.156 ac, 56.28% Impervious, Inflow Depth > 5.46" for 100-yr event
Inflow = 0.93 cfs @ 12.10 hrs, Volume= 0.071 af
Outflow = 0.89 cfs @ 12.10 hrs, Volume= 0.065 af, Atten= 4%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.10 hrs, Volume= 0.065 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 75.47' @ 12.10 hrs Surf.Area= 0 sf Storage= 269 cf
Flood Elev= 75.62' Surf.Area= 0 sf Storage= 269 cf

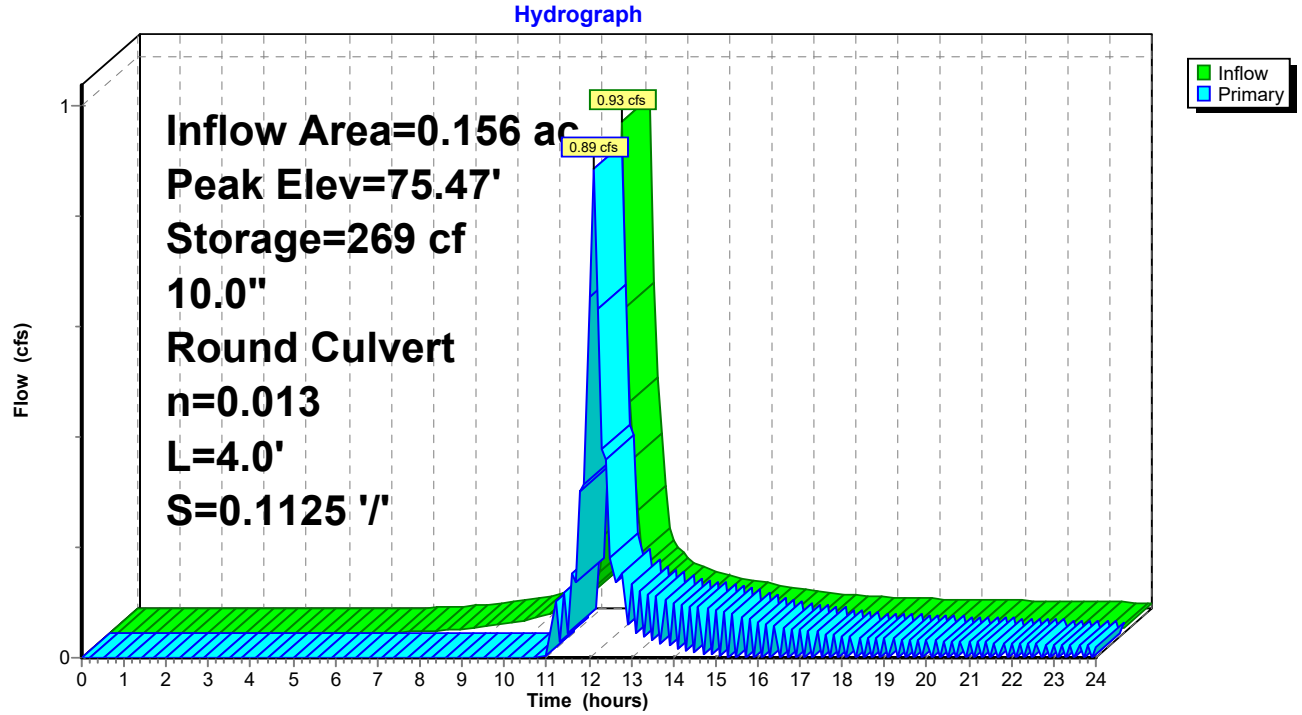
Plug-Flow detention time= 63.8 min calculated for 0.065 af (91% of inflow)
Center-of-Mass det. time= 21.0 min (829.4 - 808.4)

Volume	Invert	Avail.Storage	Storage Description
#1	71.12'	269 cf	**42.0" Round Pipe Storage** L= 28.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	74.95'	**10.0" Round Culvert** L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.95' / 74.50' S= 0.1125 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.88 cfs @ 12.10 hrs HW=75.47' TW=73.64' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.88 cfs @ 2.46 fps)

Pond 4P: PRETREAT PIPE



Summary for Pond 5P: MH1

Inflow Area = 1.056 ac, 77.83% Impervious, Inflow Depth > 6.74" for 100-yr event
Inflow = 7.11 cfs @ 12.10 hrs, Volume= 0.594 af
Outflow = 7.11 cfs @ 12.10 hrs, Volume= 0.594 af, Atten= 0%, Lag= 0.0 min
Primary = 2.17 cfs @ 12.09 hrs, Volume= 0.451 af
Secondary = 4.94 cfs @ 12.11 hrs, Volume= 0.143 af

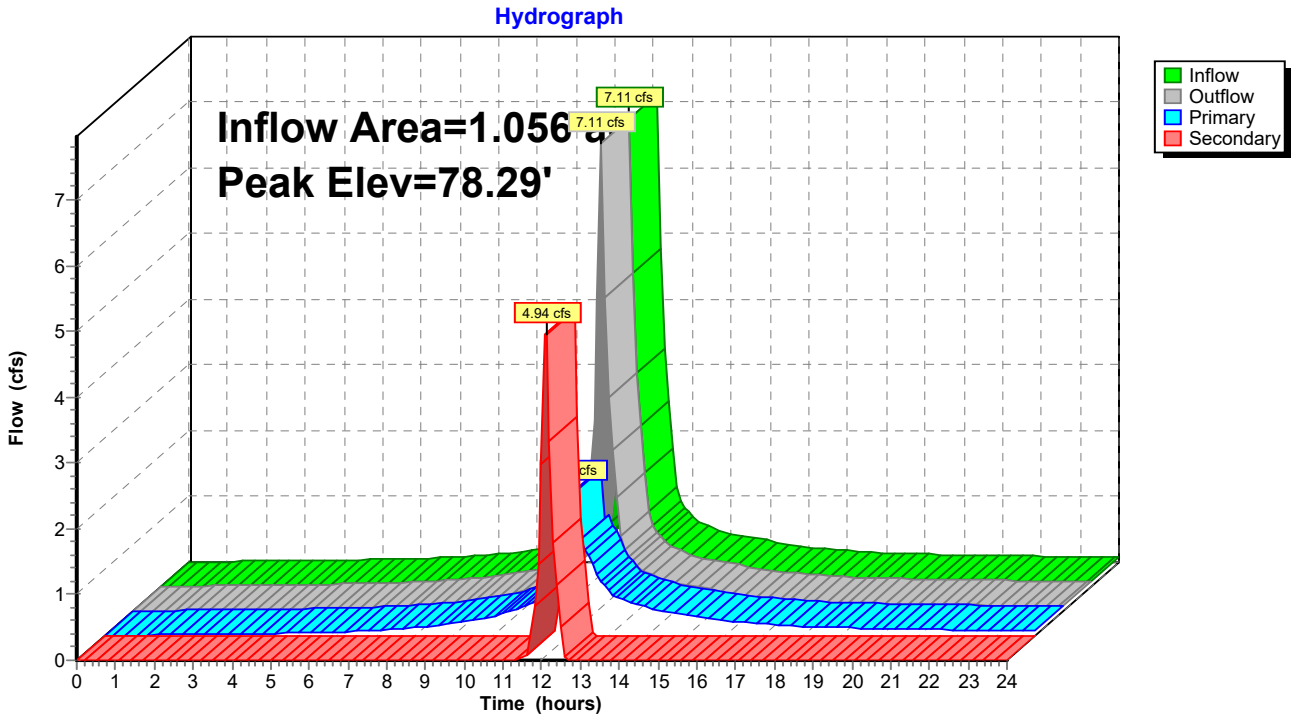
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 78.29' @ 12.10 hrs
Flood Elev= 80.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.20'	**8.0" Round Culvert** L= 9.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.20' / 75.03' S= 0.0189 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Secondary	76.08'	**12.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.08' / 74.90' S= 0.0562 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.87 cfs @ 12.09 hrs HW=78.15' TW=76.92' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.87 cfs @ 5.35 fps)

Secondary OutFlow Max=4.87 cfs @ 12.11 hrs HW=78.24' TW=72.15' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 4.87 cfs @ 6.20 fps)

Pond 5P: MH1



Summary for Pond 6P: BIO (NW)

Inflow Area = 0.295 ac, 59.02% Impervious, Inflow Depth > 5.57" for 100-yr event
Inflow = 1.78 cfs @ 12.10 hrs, Volume= 0.137 af
Outflow = 1.63 cfs @ 12.13 hrs, Volume= 0.127 af, Atten= 8%, Lag= 1.7 min
Primary = 1.63 cfs @ 12.13 hrs, Volume= 0.127 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 80.75' @ 12.13 hrs Surf.Area= 994 sf Storage= 643 cf
Flood Elev= 81.00' Surf.Area= 1,085 sf Storage= 903 cf

Plug-Flow detention time= 57.1 min calculated for 0.127 af (93% of inflow)
Center-of-Mass det. time= 20.9 min (827.1 - 806.2)

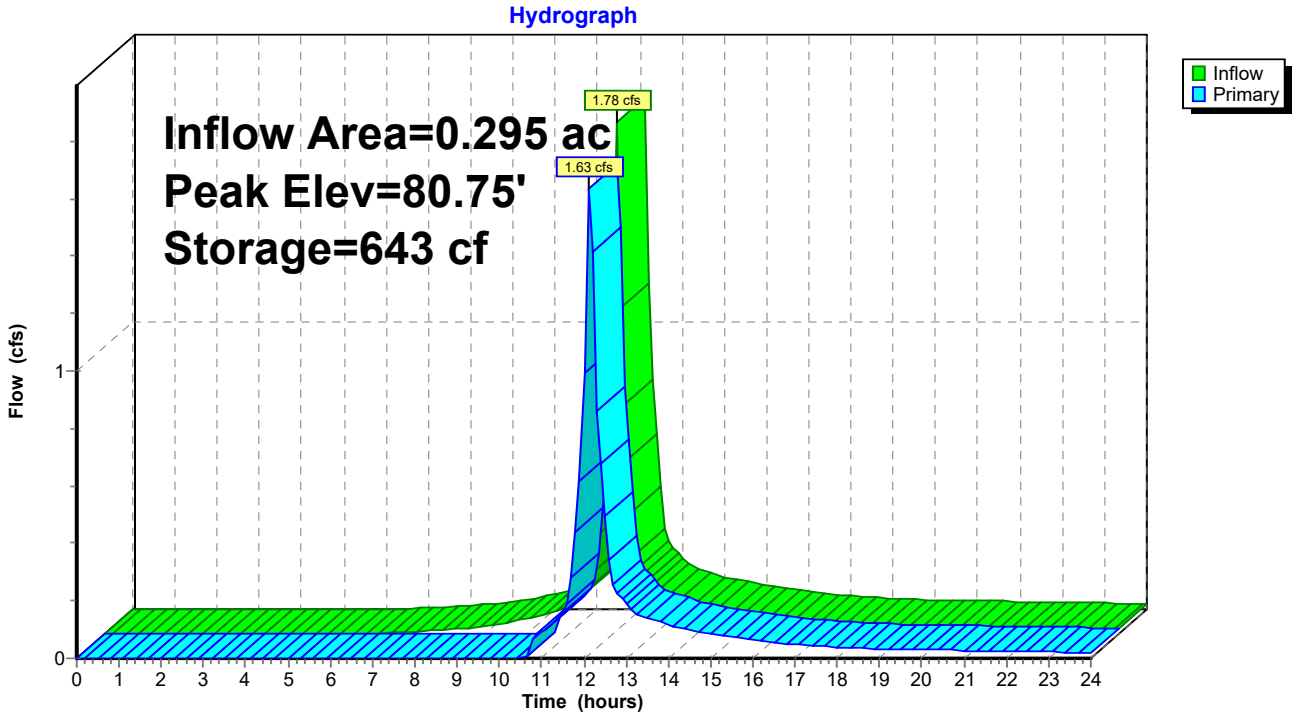
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	903 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
80.00	720	0	0
81.00	1,085	903	903

Device	Routing	Invert	Outlet Devices
#1	Primary	76.50'	**6.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.50' / 76.25' S= 0.0179 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	80.50'	**12.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.55 cfs @ 12.13 hrs HW=80.74' TW=76.37' (Dynamic Tailwater)
↑**1=Culvert** (Passes 1.55 cfs of 1.89 cfs potential flow)
↑**2=Orifice/Grate** (Weir Controls 1.55 cfs @ 1.61 fps)

Pond 6P: BIO (NW)



Summary for Pond 7P: CB1

Inflow Area = 0.536 ac, 74.33% Impervious, Inflow Depth > 6.40" for 100-yr event
Inflow = 3.46 cfs @ 12.11 hrs, Volume= 0.286 af
Outflow = 3.46 cfs @ 12.11 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.0 min
Primary = 0.59 cfs @ 12.11 hrs, Volume= 0.199 af
Secondary = 2.87 cfs @ 12.11 hrs, Volume= 0.087 af

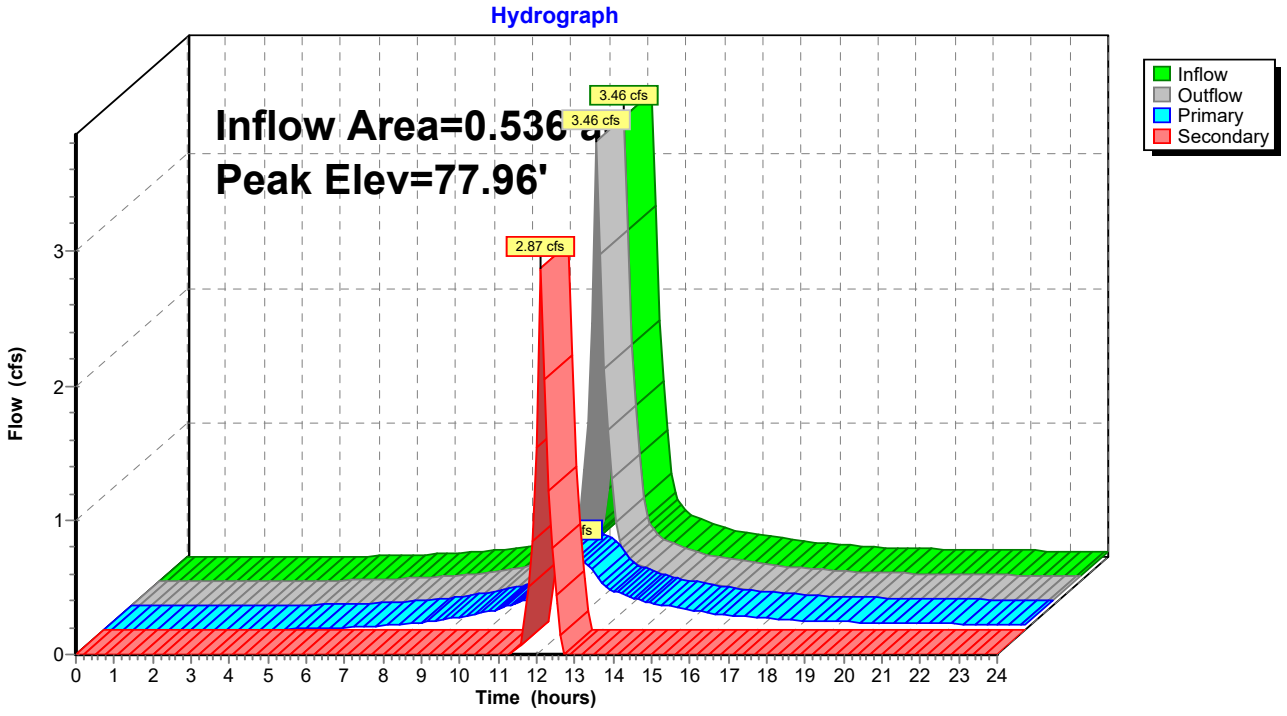
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 77.96' @ 12.11 hrs
Flood Elev= 80.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	76.50'	**6.0" Round Culvert** L= 187.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.50' / 75.20' S= 0.0069 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	77.05'	**15.0" Round Culvert** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 77.05' / 76.55' S= 0.0077 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.58 cfs @ 12.11 hrs HW=77.94' TW=75.66' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.58 cfs @ 2.97 fps)

Secondary OutFlow Max=2.76 cfs @ 12.11 hrs HW=77.94' TW=76.37' (Dynamic Tailwater)
└**2=Culvert** (Barrel Controls 2.76 cfs @ 4.13 fps)

Pond 7P: CB1



Summary for Pond 8P: PIPE INFILTRATORS

Inflow Area = 1.593 ac, 76.65% Impervious, Inflow Depth > 4.83" for 100-yr event
Inflow = 2.76 cfs @ 12.09 hrs, Volume= 0.641 af
Outflow = 2.40 cfs @ 12.15 hrs, Volume= 0.505 af, Atten= 13%, Lag= 3.8 min
Discarded = 0.11 cfs @ 11.07 hrs, Volume= 0.129 af
Primary = 2.37 cfs @ 12.15 hrs, Volume= 0.376 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 75.14' @ 12.15 hrs Surf.Area= 752 sf Storage= 7,081 cf
Flood Elev= 75.25' Surf.Area= 0 sf Storage= 7,138 cf

Plug-Flow detention time= 148.8 min calculated for 0.505 af (79% of inflow)
Center-of-Mass det. time= 58.7 min (860.9 - 802.2)

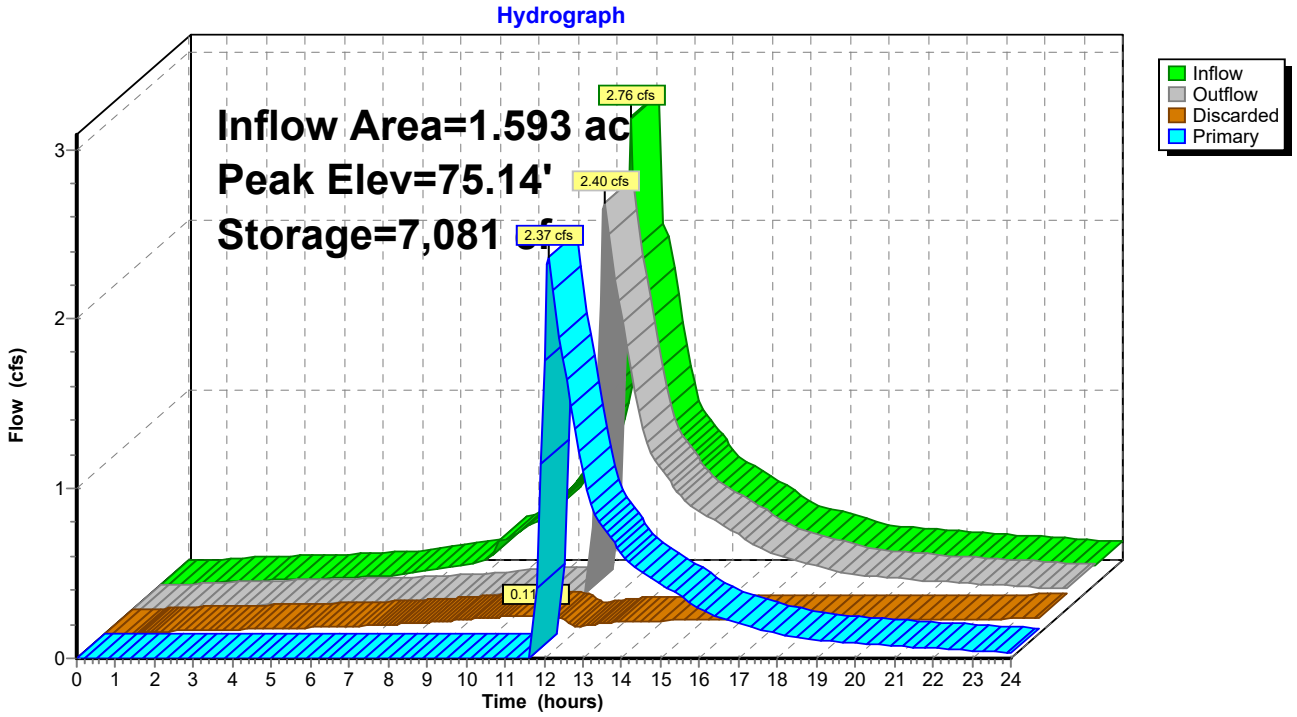
Volume	Invert	Avail.Storage	Storage Description
#1	71.25'	7,138 cf	**48.0" Round Pipe Storage** x 4 L= 142.0'

Device	Routing	Invert	Outlet Devices
#1	Discarded	71.25'	**2.000 in/hr Exfiltration over Surface area**
#2	Primary	74.25'	**12.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.25' / 73.00' S= 0.0357 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.11 cfs @ 11.07 hrs HW=73.25' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=2.32 cfs @ 12.15 hrs HW=75.13' TW=72.38' (Dynamic Tailwater)
↑**2=Culvert** (Inlet Controls 2.32 cfs @ 3.19 fps)

Pond 8P: PIPE INFILTRATORS



Summary for Pond 9P: MH3

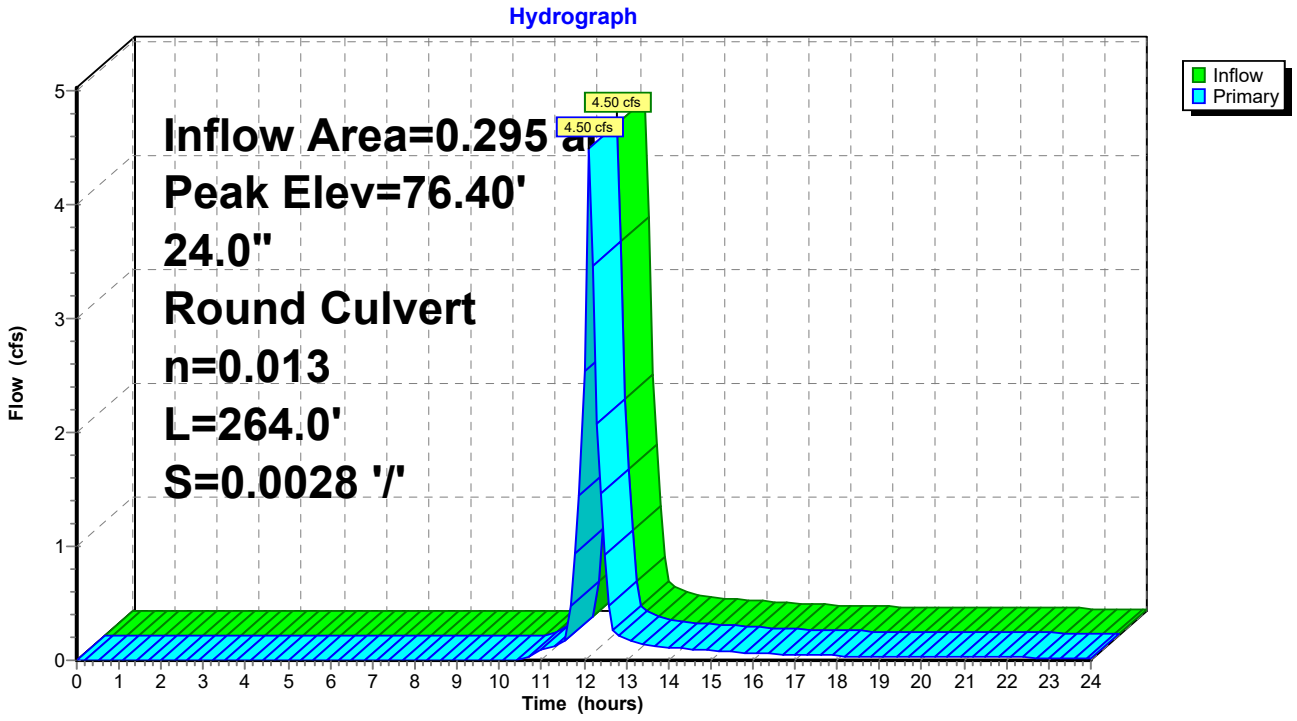
Inflow Area = 0.295 ac, 59.02% Impervious, Inflow Depth > 8.75" for 100-yr event
Inflow = 4.50 cfs @ 12.12 hrs, Volume= 0.215 af
Outflow = 4.50 cfs @ 12.12 hrs, Volume= 0.215 af, Atten= 0%, Lag= 0.0 min
Primary = 4.50 cfs @ 12.12 hrs, Volume= 0.215 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 76.40' @ 12.14 hrs
Flood Elev= 83.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.25'	**24.0" Round Culvert** L= 264.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.25' / 74.50' S= 0.0028 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.43 cfs @ 12.12 hrs HW=76.37' TW=75.03' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.43 cfs @ 3.52 fps)

Pond 9P: MH3



Summary for Pond 10P: PIPE DETENTION

Inflow Area = 0.295 ac, 59.02% Impervious, Inflow Depth > 8.75" for 100-yr event
Inflow = 4.50 cfs @ 12.12 hrs, Volume= 0.215 af
Outflow = 1.61 cfs @ 12.37 hrs, Volume= 0.214 af, Atten= 64%, Lag= 15.4 min
Primary = 1.61 cfs @ 12.37 hrs, Volume= 0.214 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 76.19' @ 12.38 hrs Surf.Area= 798 sf Storage= 3,412 cf
Flood Elev= 76.55' Surf.Area= 0 sf Storage= 3,608 cf

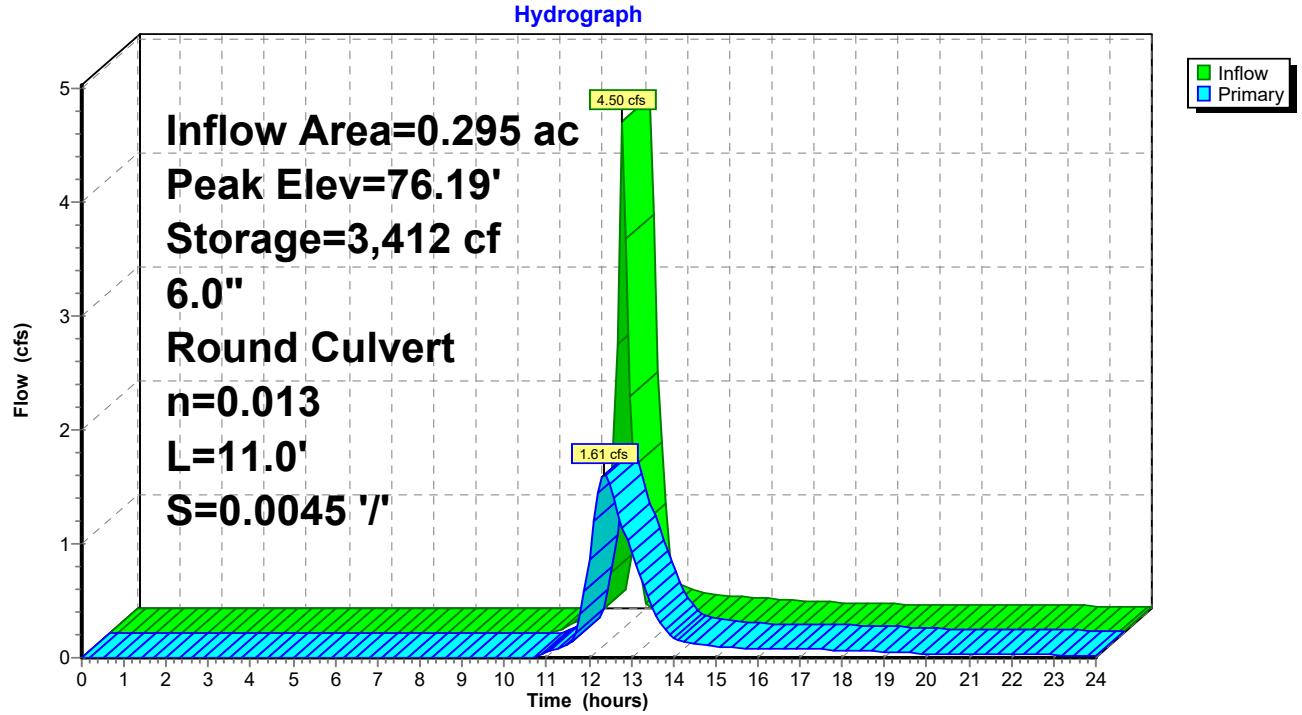
Plug-Flow detention time= 34.5 min calculated for 0.214 af (100% of inflow)
Center-of-Mass det. time= 32.3 min (819.1 - 786.8)

Volume	Invert	Avail.Storage	Storage Description
#1	73.05'	3,608 cf	**42.0" Round Pipe Storage** x 3 L= 125.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	73.05'	**6.0" Round Culvert** L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.05' / 73.00' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=1.60 cfs @ 12.37 hrs HW=76.17' TW=73.14' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 1.60 cfs @ 8.15 fps)

Pond 10P: PIPE DETENTION



Summary for Pond 11P: PRETREAT PIPE

Inflow Area = 0.536 ac, 74.33% Impervious, Inflow Depth > 4.44" for 100-yr event
Inflow = 0.59 cfs @ 12.11 hrs, Volume= 0.199 af
Outflow = 0.59 cfs @ 12.12 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.3 min
Primary = 0.59 cfs @ 12.12 hrs, Volume= 0.190 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 75.66' @ 12.12 hrs Surf.Area= 32 sf Storage= 403 cf
Flood Elev= 75.70' Surf.Area= 0 sf Storage= 404 cf

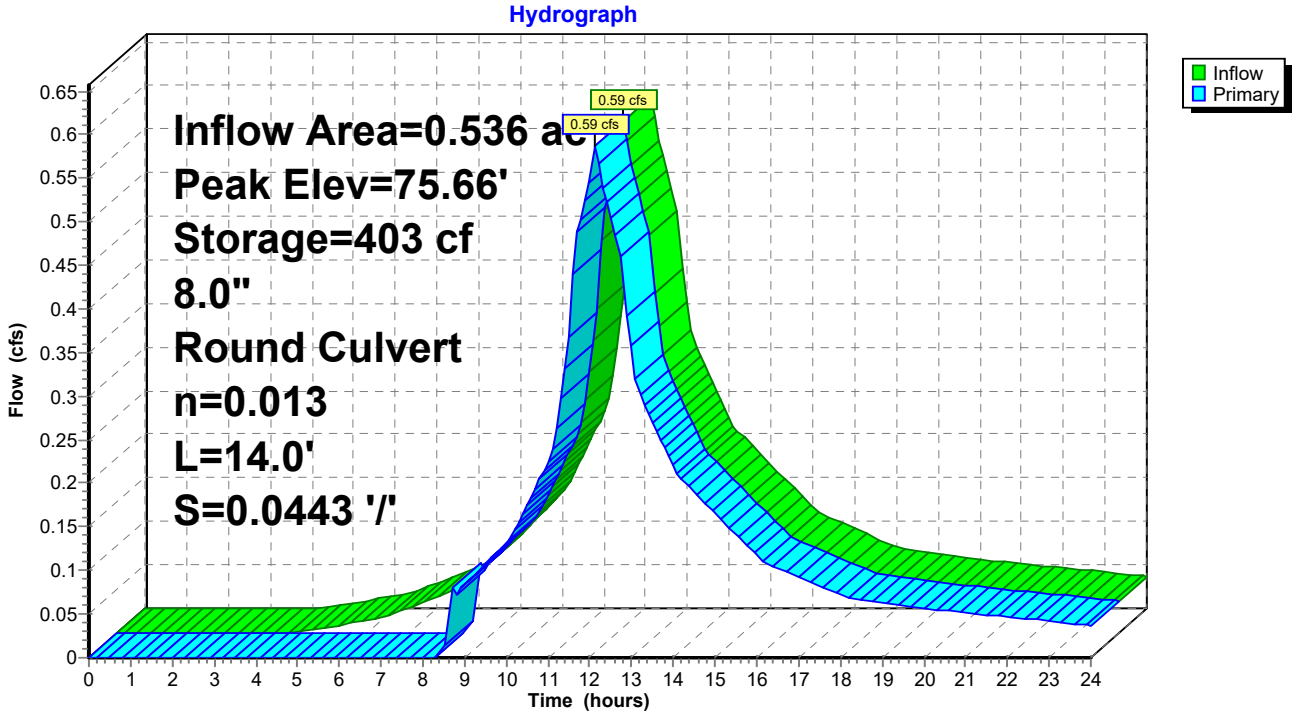
Plug-Flow detention time= 42.4 min calculated for 0.189 af (95% of inflow)
Center-of-Mass det. time= 18.3 min (836.8 - 818.5)

Volume	Invert	Avail.Storage	Storage Description
#1	72.20'	404 cf	**42.0" Round Pipe Storage** L= 42.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	75.20'	**8.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.20' / 74.58' S= 0.0443 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.58 cfs @ 12.12 hrs HW=75.65' TW=75.13' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.58 cfs @ 2.30 fps)

Pond 11P: PRETREAT PIPE



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APPENDIX F:
SWPPP INSPECTION REPORT
(SAMPLE FORM)

LaBella
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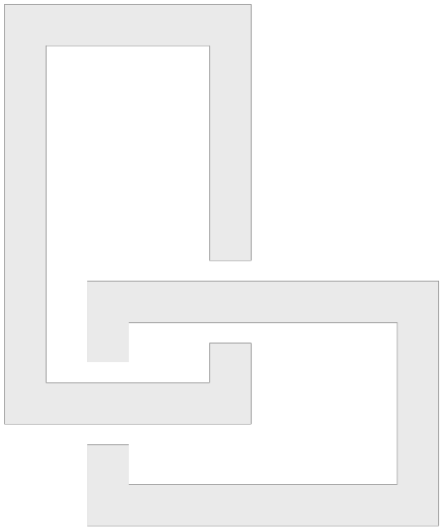
Prepared by:
LaBella Associates
21 Fox Street
Poughkeepsie, NY 12601
(845) 454-3980

SWPPP INSPECTION REPORT NUMBER XX
ARGO DEVELOPMENT
SOUTH AVE MULTI-FAMILY DEVELOPMENT
SOUTH AVE, CITY OF POUGHKEEPSIE, DUTCHESS COUNTY, NY



Performed: 9/29/2021 @ 12:00 AM
Report Issued: 9/29/2021

Status: POTENTIAL CLEAN WATER ACT VIOLATION (Contractor must begin repairs within one (1) business day. Overdue corrective actions may result in fines from the NYSDEC in the amount of $37,500/day/violation)

Qualified Inspector (name and title)	Qualified Professional (name and title)
Date	Date
Signature	Signature

NYSDEC Documentation and SWPPP Forms

NYSDEC Issued Permit Identification Number: NYRXXXXXX

5-Acre Waiver: N/A (No 5-acre waiver for this project - Contractor not authorized to disturb >5 acres)

303d Status: Project does not directly discharge to a 303d impaired waterbody

Number of Inspections required: 1 / week

Location of SWPPP and Site Log Book on-site:

YES	NO	N/A	CONTAINED IN SITE LOG BOOK?
☐	☐	☐	Preconstruction Assessment
☐	☐	☐	NOI Acknowledgement letter
☐	☐	☐	Copy of eNOI
☐	☐	☐	Owner / Operator Certification
☐	☐	☐	SWPPP Preparer Certification
☐	☐	☐	MS4 SWPPP Acceptance Form
☐	☐	☐	Contractor and Subcontractor Certifications
☐	☐	☐	SPDES General Permit
☐	☐	☐	5 Acre Waiver
☐	☐	☐	NOT

Comments:

Site Conditions

Approximate Disturbed Area at Time of Inspection: XX Acres			
Allowable Disturbed Area Per NOI and/or 5-acre waiver: XX Acres			
Current Status of Construction: Description			
Weather Conditions: Conditions		**Temperature:** XX ºF	**Soil Conditions:** Choose an item.

Description of Discharge Point/Natural Surface Waterbody	Condition of Runoff	Sediment Discharge Noted Y / N	Corrective Action

Erosion and Sediment Control Deficiencies and Corrective Actions

SWPPP Component	Functional Y / N / NA	Deficiency (See Checklist and/or note)	Deficiency Location	Initial Date	Corrective Action	Corrected Y / N
General Site Conditions						
Silt Fence						
Stabilized Construction Access						
Compost Filter Sock						
Inlet Protection						
Soil Stockpiles						
Temporary Stabilization						
Permanent Stabilization						
Dewatering Operations						
Stone Check Dams						
Rock Outlet Protection						
Sediment Traps and Basins						
Temporary Stream Crossing						
Pavement Sweeping						
Concrete Washout						
Filter Strips						
Slope Protection Measures						
Temporary Swales and Berms						
Temporary Parking Areas						
Fiber Roll						
Permanent Turf Reinforcement						
Water Bars						
Flow Diffusers						
Other:						

SWPPP Inspection Checklist and Deficiency Numbers

1	General Site Conditions
1A	Adjoining properties are not protected from erosion and sediment deposition
1B	Downstream waterways are not protected from erosion and sediment deposition
1C	All E&SC measures have not been constructed as detailed in the SWPPP
1D	Dust is not adequately controlled
1E	Storage areas contain spills, leaks, or harmful materials
1F	Garbage and waste building materials are not being managed properly
1G	Temporary control measures that are no longer needed have not been removed
1H	Permanent SWM practices not constructed per plans

2	Silt Fence
2A	Silt fence not installed on contour
2B	Silt fence not across conveyance channels
2C	Silt fence not at least 10 feet from toe of slope
2D	Silt fence not at appropriate spacing intervals based on slope
2E	Silt fence ends are not wrapped for continuous support
2F	Silt fence fabric is loose or contains rips or frayed areas
2G	Silt fence posts are unstable
2H	Silt fence is not buried 6 inches minimum
2I	Silt fence contains bulges or material buildup

3	Stabilized Construction Access
3A	Temporary construction access not installed or not per NYS standards
3B	Other access areas have not been stabilized immediately as work takes place
3C	Sediment has tracked onto public streets and is not being cleaned daily
3D	Stone is not clean enough to effectively remove mud from vehicles
3E	Adequate drainage not provided to prevent ponding

4	Compost Filter Sock
4A	Filter sock not installed on contour
4B	Filter sock terminal ends do not extended 8' upslope at 45˚ angle
4C	Inappropriate diameter based on slope steepness and slope length
4D	Filter sock not anchored at 10' intervals
4E	More than 50% sediment has built up

5	Inlet Protection
5A	Inlet protection not installed or installation is not per SWPPP or Blue Book specifications
5B	Incorrect type(s) of inlet control installed or is inappropriate for location
5C	Drainage area for inlet protection is greater than 1 acre
5D	Sediment has not been removed when 50% of storage volume has been achieved
5E	A 2" x 4" wood frame and wood posts has not been installed
5F	Filter fabric is not buried a minimum of 1 foot below ground or secured to frame/posts
5G	Posts are unstable, fabric is loose, and contains rips or frayed areas
5H	Post spacing exceeds maximum 3' spacing

6	Soil Stockpiles
6A	No sediment controls at downhill slope

7	Temporary Stabilization
7A	Areas inactive for 14 days or more have not been stabilized (If <5 acres disturbed)
7B	Areas inactive for 7 days or more have not been stabilized (If >5 acres disturbed or 303d)
7C	Soil preparation has not been applied as specified in the SWPPP or the Blue Book
7D	Rolled EC products specified for steep slopes or channels have not been installed

8	Permanent Stabilization
8A	Lawn in disturbed areas has not been established to 80% germination
8B	Soil preparation has not been applied as specified in the SWPPP or the Blue Book
8C	Rolled EC products specified for steep slopes or channels have not been installed

9	Dewatering Operations
9A	Upstream and downstream berms are not installed or functioning poorly
9B	Clean water from upstream pool is not being pumped to the downstream pool
9C	Sediment laden water from work area is not being discharged to a silt-trapping device
9D	Groundwater from excavations managed improperly (No sumps/sediment control)

10	Stone Check Dam
10A	Not installed per standards
10B	Channel is unstable (flow is eroding soil underneath or around the structure)
10C	Check dam in poor condition (rocks not in place or lack of geotextile fabric)
10D	Sediment needs to be removed

11	Rock Outlet Protection
11A	Rock outlet protection not installed per plan or Blue Book
11B	Rock outlet protection not installed concurrently with pipe installation

12	Sediment Traps and Basins
12A	Outlet structure constructed improperly
12B	Geotextile fabric has not been placed beneath rock fill
12C	Depth of sediment in basin has exceeded allowable threshold
12D	Basin and outlet structure not constructed per the approved plan
12E	Basin side slopes are not stabilized with seed/mulch
12F	More than 50% capacity has built up

13	Temporary Stream Crossing
13A	Construction crossings at concentrated flow areas have not been culverted

14	Pavement Sweeping
14A	Pavement has not been swept daily and sediment has traveled into road

Stormwater Management Practice Deficiencies and Corrective Actions

Practice	Sign Y / N	Current Phase of Construction	Items Not in Conformance with SWPPP	Deficiency Location	Initial Date	Corrective Action	Corrected Y / N
Practice 1:							
Practice 2:							
Practice 3:							
Practice 4:							
Practice 5:							
Practice 6:							

Photo Log

Photo 1 *Date – Item in need of repair or maintenance:*	***Photo 1A*** *Date – Corrected Action:*
Photo 2 *Date – Item in need of repair or maintenance:*	***Photo 2A*** *Date – Corrected Action:*
Photo 3 *Date – Item in need of repair or maintenance:*	***Photo 3A*** *Date – Corrected Action:*

Photo Log (continued)

Photo 4	***Photo 4A***
Date – Item in need of repair or maintenance:	*Date – Corrected Action:*
Photo 5	***Photo 5A***
Date – Item in need of repair or maintenance:	*Date – Corrected Action:*
Photo 6	***Photo 6A***
Date – Item in need of repair or maintenance:	*Date – Corrected Action:*

Disturbance / Photo Location Map

Replace this page to include an 11x17 erosion control plan sketch to scale showing:

1. Areas with active soil disturbance activity
2. Areas that have been disturbed but are inactive at the time of the inspection
3. Areas that have been stabilized (temporary and/or final) since the last inspection
4. Limit of disturbance line per the SWPPP and the grading plan
5. Photo locations

Use Bluebeam template with standard colors to indicate limits

APPENDIX G:
POST-CONSTRUCTION INSPECTIONS AND MAINTENANCE

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POST CONSTRUCTION INSPECTIONS AND MAINTENANCE

1. SITE COVER

a. Inspections

Site cover and associated structures and embankments should be inspected periodically for the first few months following construction and then on a biannual basis. Site inspections should also be performed following all major storm events. Items to check for include (but are not limited to):

i. Differential settlement of embankments, cracking or erosion.

ii. Lack of vigor and density of grass turf.

iii. Accumulation of sediments or litter on lawn areas, paved areas, or within catch basin sumps.

iv. Accumulation of pollutants, including oils or grease, in catch basin sumps.

v. Damage or fatigue of storm sewer structures or associated components.

b. Mowing and Sweeping

Vegetated areas and landscaping should be maintained to promote vigorous and dense growth. Lawn areas should be mowed at least three times a year (more frequent mowing may be desired for aesthetic reasons). Resultant yard waste shall be collected and disposed of off-site.

Paved areas should be swept at least twice a year. Additional sweeping may be appropriate in the early spring for removal of deicing materials

c. Debris and Litter Removal

Accumulation of litter and debris should be removed during each mowing or sweep operation.

d. Structural Repair or Replacement

Components of the system which require repair or replacement should be addressed immediately following identification.

e. Catch Basins

The frequency for cleanout of catch basin sumps will depend on the efficiency of mowing, sweeping, and debris and litter removal. Sumps should be cleaned when accumulation of sediments are within six inches of the catch basin outlet pipe.

Disposal of material from catch basins sumps, drainage manholes, and trench drains shall be in accordance with local, state, and federal guidelines.

f. Rip-rap Dissipation structures

Riprap used to dissipate energy from pipe outfalls shall be cleaned or replaced when it becomes overburdened with silt or sediment.

g. Winter Maintenance

To prevent impacts to storm water management facilities, the following winter maintenance limitations, restrictions, or requirements are recommended:

i. Remove snow and ice from inlet structures, basin inlet and outlet structures and away from culvert end sections.

ii. Snow removed from paved areas should not be piled at inlets/outlets of the storm water management basin.

iii. Use of deicing materials should be limited to sand and "environmentally friendly" chemical products. Use of salt mixtures should be kept to a minimum.

iv. Sand used for deicing should be clean, course material free of fines, silt, and clay.

v. Materials used for deicing should be removed during the early spring by sweeping and/ or vacuuming.

2. BIORETENTION FILTERS

a. Inspection Schedule

Bioretention filters should be inspected periodically for the first few months after construction and then on a monthly basis. Bioretention filters should be inspected after all major storm events.

b. Inspection of Uphill Drainage Area

Inspect areas that are uphill from the Bioretention filter.

i. Bare soil and/or erosion of the ground should be seeded and mulches to establish vegetation. Areas of erosion should be filled with soil, compacted, and seeded and strawed to establish vegetation.

ii. If a small channel(s) is forming, try to redirect water flowing to this area by creating a small berm or adding topsoil to areas that are heavily compacted.

iii. Piles of grass clippings, mulch, dirt, salt or other materials should be removed.

iv. Open containers of oil, grease, paint, or other substances should be covered and properly disposed of.

c. Inspection of Inlets

Stand in the Bioretention filter itself and inspect each location where water flows in.

i. Inlets should have a clear pathway for water to flow into the filter. Grit and debris or grass/weeds should be removed at curb inlets or openings.

ii. Clumps of growing grass or weeds and the associated soil or grit should be removed.

iii. Grass clippings, leaves, sticks, and other debris collecting at inlets should be removed.

iv. For pipes and ditches, sediment and debris partially blocking the pipe or ditch opening into the Bioretention filter should be removed.

v. All materials removed should be properly disposed in such a way that it may not re-enter the Bioretention filter.

vi. Small areas of erosion should be smoothed out and rock or stone applied to prevent further erosion. Reseeding and applying erosion-control matting can be used to prevent further erosion.

d. Inspection of Ponding Area

Examine the entire Bioretention surface and side slopes:

i. In areas where the mulch layer has decomposed or is less than 1-inch thick, new mulch should be added to a total depth of 2 to 3 inches. The mulch should be a shredded hardwood mulch that is less likely to float away during rainstorms. Avoid adding too much mulch so that inlets are obstructed, or certain areas become higher than the rest of the Bioretention surface.

ii. Excess sediment, grit, trash, or other debris that has accumulated on the bottom should be removed and disposed of in such a way that it cannot re-enter the Bioretention filter. If removing the material creates a hole or low area, fill in with a soil mix that matches the original mix and cover with mulch to create a flat surface.

iii. Eroded areas in the bottom or on the side slopes should be filled with clean topsoil or sand and covered with mulch. If the problem reoccurs, stone can be used to fill in the areas. If the erosion is on a side slope, fill in with clay that can be compacted and seed and mulch the area.

iv. The bottom of the Bioretention filter should be flat. The surface should be raked or mulch added to low spots to create a more level surface.

e. Inspection of Vegetation

Examine all Bioretention filter vegetation:

i. Weeds and dead and/or diseased plants should be removed and the mulch surrounding these replaced. Plants should be added to fill in areas that are not well vegetated.

ii. If bioretention filter utilized a vegetated seed mix, then grass areas shall be mowed to ensure that grass height does not exceed 6-inches.

iii. Undesirable trees and shrubs should be removed. Resultant yard wastes shall be collected and disposed of off-site

f. Inspection of Outlets

Examine the outlets that release water out of the Bioretention filter:

i. Stone should be added in areas of erosion at the outlet to reduce the impact from the water flowing out of the outlet pipe or weir during storms.

ii. Outlet obstructions should be removed and disposed of where it cannot re-enter the Bioretention filter.

g. Debris, Trash and Litter Control

Removal of debris and litter shall be accomplished during mowing operations. Inlet structures should be cleared of all debris and litter.

h. Structural Repairs and Replacement

Components of the bioretention filter, which require repair or replacement, should be addressed immediately following identification. This includes treating and or replacing diseased trees and shrub, fertilizing as necessary, replacing tree stakes and wires, replacing mulch where bare spots appear, replacing clogged underdrains, filter beds, and pea gravel diaphragm.

i. Erosion and Sediment Control

Sources of sedimentation, specifically eroded areas in upland drainage areas, should be stabilized immediately upon identification. Stabilization should be with vegetative practices or other erosion control practices when vegetative measures do not prove effective.

Soil slumpage, erosion of the embankments or around inlets/outlets, and cracking should be stabilized and repaired immediately upon identification.

j. Sediment Removal

Sediments that accumulate in the bioretention filter should be removed annually to prevent clogging of inlet or outlet structures. Disposal of material removed from bioretention filter shall be in accordance with local, state, and federal guidelines.

3. UNDERGROUND INFILTRATION SYSTEM

a. Inspection Schedule

Underground infiltration systems should be inspected periodically for the first few months after construction and then on an annual basis. Underground infiltration systems should be inspected after major storm events to ensure inlets and outlets remain clear.

b. Inspection Items

Items to check for include (but are not limited to):

i. Measure the sediment buildup at each riser.

ii. Inspect each header, all laterals, inlets, and outlet pipes for sediment build up, obstructions or other problems. Cracking, erosion or seepage through embankments.

c. Debris and Litter Control

Inlet and outlet structures should be cleared of all debris and litter.

d. Structural repairs and Replacement

Components of the underground infiltration system, which require repair or replacement, should be addressed immediately following identification.

e. Sedimentation Control

Sources of sedimentation, specifically eroded areas in upland drainage areas, should be stabilized immediately upon identification. Stabilization should be with vegetative practices or other erosion control practices when vegetative measures do not prove effective.

f. Sediment removal

Sediments, which accumulate in the underground infiltration system, should be removed when it reaches 4% of the pipe diameter to prevent clogging of the outlet. A typical clean-out cycle should be between 5 to 10 years with more frequent cleanings near inlet and outlet structures. The unit may require cleaning in the event of a spill of a toxic or foreign substance. Disposal of material from the underground infiltration systems shall be in accordance with local, state, and federal guidelines.

Underground infiltration systems are confined space environment and only properly trained personnel possessing the necessary safety equipment should enter the systems to perform maintenance or inspection.

4. HYDRODYNAMIC DEVICE

The hydrodynamic device is a confined space environment and only properly trained personnel possessing the necessary safety equipment should enter the unit to perform maintenance or inspection.

a. Inspection Schedule

The hydrodynamic device shall be inspected every four months.

b. Inspection Items

The unit's internal components should be inspected for any signs of damage or any loosening of the bolts used to fasten the various components to the manhole structure and to each other.

Refer to attached Operations and Maintenance Guidelines, for the CS-4 Cascade Hydrodynamic Device, and CDS Guide Operation, Design, Performance and Maintenance Manual for the manufacturer's detailed inspection and maintenance requirements.

c. Debris, Trash and Litter Control

The screen shall be power washed for the inspection. The floatables shall be removed and the sump cleaned when it has reached 50% capacity. The unit may require cleaning in the event of a spill of a toxic or foreign substance. At a minimum, the hydrodynamic device shall be pumped out at least once a year if the sump does not reach its 50% capacity.

d. Sediment removal

Disposal of material from the hydrodynamic device shall be in accordance with local, state, and federal guidelines.

5. SURFACE DETENTION BASINS

a. Inspection Schedule

Detention Basins should be inspected periodically for the first few months after construction and then on an annual basis. Detention Basins should be inspected after major storm events to ensure inlets and outlets remain clear.

b. Inspection Items

Items to check for include (but are not limited to):

i. Differential settlement of embankments.

ii. Cracking, erosion, or seepage through embankments.

iii. Evidence of clogging at inlets or outlets.

iv. Erosion of the flow path through the detention basin.

v. Brush, shrub, or tree growth on embankments.

vi. Condition of the overflow spillway.

vii. Lack of vigor and density of grass turf on the basin embankments.

c. Mowing

The side slopes, embankments, inlets, and overflow spillways of the detention basins should be mowed at least three times a year and resultant yard wastes collected and disposed of off-site.

d. Debris and Litter Control

Removal of debris and litter should be accomplished during mowing operations. Inlet and outlet structures should be cleared of all debris and litter.

e. Structural repairs and Replacement

Components of the detention basin, which require repair or replacement, should be addressed immediately following identification.

f. Erosion Control

Sources of sedimentation, specifically eroded areas in upland drainage areas, should be stabilized immediately upon identification. Stabilization should be with vegetative practices or other erosion control practices when vegetative measures do not prove effective.

Soil slumpage, erosion of the basin embankment or around inlets/outlets, and cracking should be stabilized and repaired immediately upon identification. Repair, replacement, or addition of rip-rap aprons, channels or embankments should be pursued as required.

g. Sediment removal

Sediments, which accumulate in the detention basin, should be removed periodically to prevent clogging of inlet or outlet structures. A typical clean-out cycle should be between 5 to 10 years with more frequent cleanings near inlet and outlet structures.

APPENDIX H:
NYSDEC "DEEP-RIPPING AND DECOMPACTION," APRIL 2008

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New York State
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water

Deep-Ripping and Decompaction

April 2008

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New York State
Department of Environmental Conservation

Alternative Stormwater Management
Deep-Ripping and Decompaction

Description

The two-phase practice of 1) “Deep Ripping;” and 2) “Decompaction” (deep subsoiling), of the soil material as a step in the cleanup and restoration/landscaping of a construction site, helps mitigate the physically induced impacts of soil compression; i.e.: soil compaction or the substantial increase in the bulk density of the soil material.

Deep Ripping and Decompaction are key factors which help in restoring soil pore space and permeability for water infiltration. Conversely, the physical actions of cut-and-fill work, land grading, the ongoing movement of construction equipment and the transport of building materials throughout a site alter the architecture and structure of the soil, resulting in: the mixing of layers (horizons) of soil materials, compression of those materials and diminished soil porosity which, if left unchecked, severely impairs the soil’s water holding capacity and vertical drainage (rainfall infiltration), from the surface downward.

In a humid climate region, compaction damage on a site is virtually guaranteed over the duration of a project. Soil in very moist to wet condition when compacted, will have severely reduced permeability. Figure 1 displays the early stage of the deep-ripping phase (Note that all topsoil was stripped prior to construction access, and it remains stockpiled until the next phase – decompaction – is complete). A heavy-duty tractor is pulling a three-shank ripper on the first of several series of incrementally deepening passes through the construction access corridor's densely compressed subsoil material. Figure 2 illustrates the approximate volumetric composition of a loam surface soil when conditions are good for plant growth, with adequate natural pore space for fluctuating moisture conditions.

Fig. 1. A typical deep ripping phase of this practice, during the first in a series of progressively deeper “rips” through severely compressed subsoil.

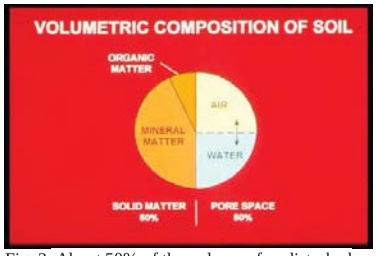

Fig. 2. About 50% of the volume of undisturbed loam surface soil is pore space, when soil is in good condition for plant growth. Brady, 2002.

Recommended Application of Practice

The objective of Deep Ripping and Decompaction is to effectively fracture (vertically and laterallly) through the thickness of the physically compressed subsoil material (see Figure 3), restoring soil porosity and permeability and aiding infiltration to help reduce runoff. Together with topsoil stripping, the “two-phase” practice of Deep Ripping and Decompaction first became established as a “best management practice” through ongoing success on commercial farmlands affected by heavy utility construction right-of-way projects (transmission pipelines and large power lines).

Fig. 3. Construction site with significant compaction of the deep basal till subsoil extends 24 inches below this exposed cut-and-fill work surface.

Soil permeability, soil drainage and cropland productivity were restored. For broader construction application, the two-phase practice of Deep Ripping and Decompaction is best adapted to areas impacted with significant soil compaction, on contiguous open portions of large construction sites and inside long, open construction corridors used as temporary access over the duration of construction. Each mitigation area should have minimal above-and-below-ground obstructions for the easy avoidance and maneuvering of a large tractor and ripping/decompacting implements. Conversely, the complete two-phase practice is not recommended in congested or obstructed areas due to the limitations on tractor and implement movement.

Benefits

Aggressive “deep ripping” through the compressed thickness of exposed subsoil before the replacement/respreading of the topsoil layer, followed by “decompaction,” i.e.: “sub-soiling,” through the restored topsoil layer down into the subsoil, offers the following benefits:

- Increases the project (larger size) area’s direct surface infiltration of rainfall by providing the open site’s mitigated soil condition and lowers the demand on concentrated runoff control structures
- Enhances direct groundwater recharge through greater dispersion across and through a broader surface than afforded by some runoff-control structural measures
- Decreases runoff volume generated and provides hydrologic source control
- May be planned for application in feasible open locations either alone or in

conjunction with plans for structural practices (e.g., subsurface drain line or infiltration basin) serving the same or contiguous areas

- Promotes successful long-term revegetation by restoring soil permeability, drainage and water holding capacity for healthy (rather than restricted) root-system development of trees, shrubs and deep rooted ground cover, minimizing plant drowning during wet periods and burnout during dry periods.

Feasibility/Limitations

The effectiveness of Deep Ripping and Decompaction is governed mostly by site factors such as: the original (undisturbed) soil's hydrologic characteristics; the general slope; local weather/timing (soil moisture) for implementation; the space-related freedom of equipment/implement maneuverability (noted above in **Recommended Application of Practice**), and by the proper selection and operation of tractor and implements (explained below in **Design Guidance**). The more notable site-related factors include:

Soil
In the undisturbed condition, each identified soil type comprising a site is grouped into one of four categories of soil hydrology, Hydrologic Soil Group A, B, C or D, determined primarily by a range of characteristics including soil texture, drainage capability when thoroughly wet, and depth to water table. The natural rates of infiltration and transmission of soil-water through the undisturbed soil layers for Group A is "high" with a low runoff potential while soils in Group B are moderate in infiltration and the transmission of soil-water with a moderate runoff potential, depending somewhat on slope. Soils in Group C have slow rates of infiltration and transmission of soil-water and a moderately high runoff potential influenced by soil texture and slope; while soils in Group D have exceptionally slow rates of infiltration and transmission of soil-water, and high runoff potential.

In Figure 4, the profile displays the undisturbed horizons of a soil in Hydrologic Soil Group C and the naturally slow rate of infiltration through the subsoil. The slow rate of infiltration begins immediately below the topsoil horizon (30 cm), due to the limited amount of macro pores, e.g.: natural subsoil fractures, worm holes and root channels. Infiltration after the construction-induced mixing and compression of such subsoil material is virtually absent; but can be restored back to this natural level with the two-phase practice of deep ripping and decompaction, followed by the permanent establishment of an appropriate, deep taproot

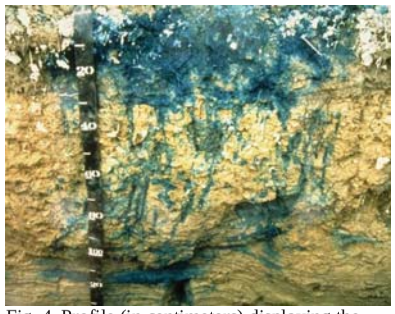

Fig. 4. Profile (in centimeters) displaying the infiltration test result of the natural undisturbed horizons of a soil in Hydrologic Soil Group C.

lawn/ground cover to help maintain the restored subsoil structure. Infiltration after construction-induced mixing and compression of such subsoil material can be notably rehabilitated with the Deep Ripping and Decompaction practice, which prepares the site for the appropriate long-term lawn/ground cover mix including deep taproot plants such as clover, fescue or trefoil, etc. needed for all rehabilitated soils.

Generally, soils in Hydrologic Soil Groups A and B, which respectively may include deep, well-drained, sandy-gravelly materials or deep, moderately well-drained basal till materials, are among the easier ones to restore permeability and infiltration, by deep ripping and decompaction. Among the many different soils in Hydrologic Soil Group C are those unique glacial tills having a natural fragipan zone, beginning about 12 to 18 inches (30 – 45cm), below surface. Although soils in Hydrologic Soil Group C do require a somewhat more carefully applied level of the Deep Ripping and Decompaction practice, it can greatly benefit such affected areas by reducing the runoff and fostering infiltration to a level equal to that of pre-disturbance.

Soils in Hydrologic Soil Group D typically have a permanent high water table close to the surface, influenced by a clay or other highly impervious layer of material. In many locations with clay subsoil material, the bulk density is so naturally high that heavy trafficking has little or no added impact on infiltration; and structural runoff control practices rather than Deep Ripping and Decompaction should be considered.

The information about Hydrologic Soil Groups is merely a general guideline. Site-specific data such as limited depths of cut-and-fill grading with minimal removal or translocation of the inherent subsoil materials (as analyzed in the county soil survey) or, conversely, the excavation and translocation of deeper, unconsolidated substratum or consolidated bedrock materials (unlike the analyzed subsoil horizons' materials referred to in the county soil survey) should always be taken into account.

Sites made up with significant quantities of large rocks, or having a very shallow depth to bedrock, are not conducive to deep ripping and decompation (subsoiling); and other measures may be more practical.

Slope
The two-phase application of 1) deep ripping and 2) decompaction (deep subsoiling), is most practical on flat, gentle and moderate slopes. In some situations, such as but not limited to temporary construction access corridors, inclusion areas that are moderately steep along a project's otherwise gentle or moderate slope may also be deep ripped and decompacted. For limited instances of moderate steepness on other projects, however, the post-construction land use and the relative alignment of the potential ripping and decompaction work in relation to the lay of the slope should be reviewed for safety and practicality. In broad construction areas predominated by moderately steep or steep slopes, the practice is generally not used.

Local Weather/Timing/Soil Moisture
Effective fracturing of compressed subsoil material from the exposed work surface, laterally and vertically down through the affected zone is achieved only when the soil material is moderately dry to moderately moist. Neither one of the two-phases, deep ripping nor decompaction (deep

subsoiling), can be effectively conducted when the soil material (subsoil or replaced topsoil) is in either a “plastic” or “liquid” state of soil consistency. Pulling the respective implements legs through the soil when it is overly moist only results in the “slicing and smearing” of the material or added “squeezing and compression” instead of the necessary fracturing. Ample drying time is needed for a “rippable” soil condition not merely in the material close to the surface, but throughout the material located down to the bottom of the physically compressed zone of the subsoil.

The “poor man’s Atterberg field test” for soil plasticity is a simple “hand-roll” method used for quick, on-site determination of whether or not the moisture level of the affected soil material is low enough for: effective deep ripping of subsoil; respreading of topsoil in a friable state; and final decompaction (deep subsoiling). Using a sample of soil material obtained from the planned bottom depth of ripping, e.g.: 20 - 24 inches below exposed subsoil surface, the sample is hand rolled between the palms down to a 1/8-inch diameter thread. (Use the same test for stored topsoil material before respreading on the site.) If the respective soil sample crumbles apart in segments no greater than 3/8 of an inch long, by the time it is rolled down to 1/8 inch diameter, it is low enough in moisture for deep ripping (or topsoil replacement), and decompaction. Conversely, as shown in Figure 5, if the rolled sample stretches out in increments greater than 3/8 of an inch long before crumbling, it is in a “plastic” state of soil consistency and is too wet for subsoil ripping (as well as topsoil replacement) and final decompaction.

Fig. 5. Augered from a depth of 19 inches below the surface of the replaced topsoil, this subsoil sample was hand rolled to a 1/8-inch diameter. The test shows the soil at this site stretches out too far without crumbling; it indicates the material is in a plastic state of consistence, too wet for final decompaction (deep subsoiling) at this time.

Design Guidance

Beyond the above-noted site factors, a vital requirement for the effective Deep Ripping and Decompaction (deep subsoiling), is implementing the practice in its distinct, two-phase process:

1) Deep rip the affected thickness of exposed subsoil material (see Figure 10 and 11), aggressively fracturing it before the protected topsoil is reapplied on the site (see Figure 12); and

2) Decompact (deep subsoil), simultaneously through the restored topsoil layer and the upper half of the affected subsoil (Figure 13). The second phase, “decompaction,” mitigates the partial recompaction which occurs during the heavy process of topsoil spreading/grading. Prior to deep ripping and decompacting the site, all construction activity, including construction equipment and material storage, site cleanup and trafficking (Figure 14), should be finished; and the site closed off to further disturbance. Likewise, once the practice is underway and the area’s soil permeability and

rainfall infiltration are being restored, a policy limiting all further traffic to permanent travel lanes is maintained.

The other critical elements, outlined below, are: using the proper implements (deep, heavy-duty rippers and subsoilers), and ample pulling-power equipment (tractors); and conducting the practice at the appropriate speed, depth and pattern(s) of movement.

Note that an appropriate plan for the separate practice of establishing a healthy perennial ground cover, with deep rooting to help maintain the restored soil structure, should be developed in advance. This may require the assistance of an agronomist or landscape horticulturist.

Implements

Avoid the use of all undersize implements. The small-to-medium, light-duty tool will, at best, only “scarify” the uppermost surface portion of the mass of compacted subsoil material. The term “chisel plow” is commonly but incorrectly applied to a broad range of implements. While a few may be adapted for the moderate subsoiling of non-impacted soils, the majority are less durable and used for only lighter land-fitting (see Figure 6).

Fig. 6. A light duty chisel implement, not adequate for either the deep ripping or decompaction (deep subsoiling) phase.

Fig. 7. One of several variations of an agricultural ripper. This unit has long, rugged shanks mounted on a steel V-frame for deep, aggressive fracturing through Phase 1.

Use a “heavy duty” agricultural-grade, deep ripper (see Figures 7,9,10 and 11) for the first phase: the lateral and vertical fracturing of the mass of exposed and compressed subsoil, down and through, to the bottom of impact, prior to the replacement of the topsoil layer. (Any oversize rocks which are uplifted to the subsoil surface during the deep ripping phase are picked and removed.) Like the heavy-duty class of implement for the first phase, the decompaction (deep subsoiling) of Phase 2 is conducted with the heavy-duty version of the deep subsoiler. More preferable is the angled-leg variety of deep subsoiler (shown in Figures 8 and 13). It minimizes the inversion of the subsoil and topsoil layers while laterally and vertically fracturing the upper half of the previously ripped subsoil layer and all of the topsoil layer by delivering a momentary, wave-like “lifting and shattering” action up through the soil layers as it is pulled.

Pulling-Power of Equipment
Use the following rule of thumb for tractor horsepower (hp) whenever deep ripping and decompacting a significantly impacted site: For both types of implement, have at least 40 hp of tractor pull available for each mounted shank/ leg.

Using the examples of a 3-shank and a 5-shank implement, the respective tractors should have 120 and 200 hp available for fracturing down to the final depth of 20-to-24 inches per phase. Final depth for the deep ripping in Phase 1 is achieved incrementally by a progressive series of passes (see Depth and Patterns of Movement, below); while for Phase 2, the full operating depth of the deep subsoiler is applied from the beginning.

The operating speed for pulling both types of implement should not exceed 2 to 3 mph. At this slow and managed rate of operating speed, maximum functional performance is sustained by the tractor and the implement performing the soil fracturing. Referring to Figure 8, the implement is the 6-leg version of the deep angled-leg subsoiler. Its two outside legs are "chained up" so that only four legs will be engaged (at the maximum depth), requiring no less than 160 hp, (rather than 240 hp) of pull. The 4-wheel drive, articulated-frame tractor in Figure 8 is 174 hp. It will be decompacting this unobstructed, former construction access area simultaneously through 11 inches of replaced topsoil and the upper 12 inches of the previously deep-ripped subsoil. In constricted areas of Phase 1) Deep Ripping, a medium-size tractor with adequate hp, such as the one in Figure 9 pulling a 3-shank deep ripper, may be more maneuverable.

Fig. 8. A deep, angled-leg subsoiler, ideal for Phase 2 decompaction of after the topsoil layer is graded on top of the ripped subsoil.

Fig. 9. This medium tractor is pulling a 3-shank deep ripper. The severely compacted construction access corridor is narrow, and the 120 hp tractor is more maneuverable for Phase 1 deep ripping (subsoil fracturing), here.

Some industrial-grade variations of ripping implements are attached to power graders and bulldozers. Although highly durable, they are generally not recommended. Typically, the shanks or "teeth" of these rippers are too short and stout; and they are mounted too far apart to achieve the well-distributed type of lateral and vertical fracturing of the soil materials necessary to restore soil permeability and infiltration. In addition, the power graders and bulldozers, as pullers, are far less maneuverable for turns and patterns than the tractor.

Depth and Patterns of Movement
As previously noted both Phase 1 Deep Ripping through significantly compressed, exposed subsoil and Phase 2 Decompaction (deep subsoiling) through the replaced topsoil and upper subsoil need to be performed at maximum capable depth of each implement. With an implement's guide wheels attached, some have a "normal" maximum operating depth of 18 inches, while others may go deeper. In many situations, however, the tractor/implement operator must first remove the guide wheels and other non essential elements from the implement. This adapts the ripper or the deep subsoiler for skillful pulling with its frame only a few inches above surface, while the shanks or legs, fracture the soil material 20-to-24 inches deep.

There may be construction sites where the depth of the exposed subsoil's compression is moderate, e.g.: 12 inches, rather than deep. This can be verified by using a ¾ inch cone penetrometer and a shovel to test the subsoil for its level of compaction, incrementally, every three inches of increasing depth. Once the full thickness of the subsoil's compacted zone is finally "pieced" and there is a significant drop in the psi measurements of the soil penetrometer, the depth/thickness of compaction is determined. This is repeated at several representative locations of the construction site. If the thickness of the site's subsoil compaction is verified as, for example, ten inches, then the Phase 1 Deep Ripping can be correspondingly reduced to the implement's minimum operable depth of 12 inches. However, the Phase 2 simultaneous Decompation (subsoiling) of an 11 inch thick layer of replaced topsoil and the upper subsoil should run at the subsoiling implements full operating depth.

Fig. 10. An early pass with a 3-shank deep ripper penetrating only 8 inches into this worksite's severely compressed subsoil.

Fig. 11. A repeat run of the 3-shank ripper along the same patterned pass area as Fig. 9; here, incrementally reaching 18 of the needed 22 inches of subsoil fracture.

Typically, three separate series (patterns) are used for both the Phase 1 Deep Ripping and the Phase 2 Decompaction on significantly compacted sites. For Phase 1, each series begins with a moderate depth of rip and, by repeat-pass, continues until full depth is reached. Phase 2 applies the full depth of Decompation (subsoiling), from the beginning.

Every separate series (pattern) consists of parallel, forward-and-return runs, with each progressive

pass of the implement's legs or shanks evenly staggered between those from the previous pass. This compensates for the shank or leg-spacing on the implement, e.g., with 24-to-30 inches between each shank or leg. The staggered return pass ensures lateral and vertical fracturing actuated every 12 to 15 inches across the densely compressed soil mass.

Large, Unobstructed Areas
For larger easy areas, use the standard patterns of movement:

- The first series (pattern) of passes is applied lengthwise, parallel with the longest spread of the site; gradually progressing across the site's width, with each successive pass.

- The second series runs obliquely, crossing the first series at an angle of about 45 degrees.

- The third series runs at right angle (or 90 degrees), to the first series to complete the fracturing and shattering on severely compacted sites, and avoid leaving large unbroken blocks of compressed soil material. (In certain instances, the third series may be optional, depending on how thoroughly the first two series loosen the material and eliminate large chunks/blocks of material as verified by tests with a ¾-inch cone penetrometer.)

Fig. 12. Moderately dry topsoil is being replaced on the affected site now that Phase 1 deep ripping of the compressed subsoil is complete.

Fig. 13. The same deep, angled-leg subsoiler shown in Fig. 7 is engaged at maximum depth for Phase 2, decompaction (deep soiling), of the replaced topsoil and the upper subsoil materials.

Corridors
In long corridors of limited width and less maneuverability than larger sites, e.g.: along compacted areas used as temporary construction access, a modified series of pattern passes are used.

- First, apply the same initial lengthwise, parallel series of passes described above.

- A second series of passes makes a broad "S" shaped pattern of rips, continually and gradually alternating the "S" curves between opposite edges inside the compacted corridor.

- The third and final series again uses the broad, alternating S pattern, but it is "flip-flopped" to continually cross the previous S pattern along the corridor's centerline. This final series of the S pattern curves back along the edge areas skipped by the second series.

Maintenance and Cost

Once the two-phase practice of Deep Ripping and Decompation is completed, two items are essential for maintaining a site's soil porosity and permeability for infiltration. They are: planting and maintaining the appropriate ground cover with deep roots to maintain the soil structure (see Figure 15); and keeping the site free of traffic or other weight loads.

Note that site-specific choice of an appropriate vegetative ground-cover seed mix, including the proper seeding ratio of one or more perennial species with a deep taproot system and the proper amount of lime and soil nutrients (fertilizer mix) adapted to the soil-needs, are basic to the final practice of landscaping, i.e: surface tillage, seeding/planting/fertilizing and culti-packing or mulching is applied. The "maintenance" of an effectively deep-ripped and decompacted area is generally limited to the successful perennial (long-term) landscape ground cover; as long as no weight-bearing force of soil compaction is applied.

Fig. 14. The severely compacted soil of a temporary construction yard used daily by heavy equipment for four months; shown before deep ripping, topsoil replacement, and decompaction.

Fig. 15. The same site as Fig. 14 after deep ripping of the exposed subsoil, topsoil replacement, decompaction through the topsoil and upper subsoil and final surface tillage and revegetation to maintain soil permeability and infiltration.

The Deep Ripping and Decompaction practice is, by necessity, more extensive than periodic subsoiling of farmland.The cost of deep ripping and decompacting (deep subsoiling), will vary according to the depth and severity of soil-material compression and the relative amount of tractor and implement time that is required. In some instances, depending on open maneuverability, two-to-three acres of compacted project area may be deep-ripped in one day. In other situations of more severe compaction and - or less maneuverability, as little as one acre may be fully ripped in a day. Generally, if the Phase 1) Deep Ripping is fully effective, the Phase 2) Decompaction should be completed in 2/3 to 3/4 of the time required for Phase 1.

Using the example of two acres of Phase 1) Deep Ripping in one day, at $1800 per day, the net cost is $900 per acre. If the Phase 2) Decompacting or deep subsoiling takes 3/4 the time as Phase 1, it costs $675 per acre for a combined total of $1575 per acre to complete the practice (these figures do not include the cost of the separate practice of topsoil stripping and replacement). Due to the many variables, it must be recognized that cost will be determined by the specific conditions or constraints of the site and the availability of proper equipment.

Resources

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- US Department of Agriculture in cooperation with Cornell University Agricultural Experiment Station. Various years. *Soil Survey of (various names) County, New York.* USDA.

Internet Access:

- Examples of implements:

V-Rippers. Access by internet search of *John Deere Ag -New Equipment for 915* (larger-frame model) *V-Rippe*; and, *for 913* (smaller-frame model) *V-Ripper*. Deep, angled-leg subsoiler. Access by internet search of: B*igham Brothers Shear Bolt Paratill-Subsoiler.* http://salesmanual.deere.com/sales/salesmanual/en_NA/primary_tillage/2008/feature/rippers/915v_pattern_frame.html?sbu=ag&link=prodcat Last visited March 08.

- Soils data of USDA Natural Resources Conservation Service. *NRCS Web Soil Survey.* http://websoilsurvey.nrcs.usda.gov/app/ and *USDA-NRCS Official Soil Series Descriptions; View by Name.* http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi . *Last visited Jan. 08.*
- Soil penetrometer information. Access by internet searches of: *Diagnosing Soil Compaction using a Penetrometer (soil compaction tester), PSU Extension;* as well as *Dickey-john Soil Compaction Tester.* http://www.dickey-johnproducts.com/pdf/SoilCompactionTest.pdf and http://cropsoil.psu.edu/Extension/Facts/uc178pdf Last visited Sept. 07

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APPENDIX I:
LABELLA CERTIFYING PROFESSIONALS LETTER

LaBella
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February 17, 2022

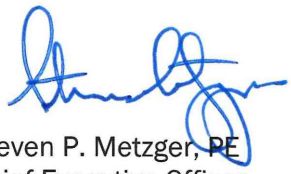
RE: LaBella Certifying Professionals for NYSDEC SPDES GP-20-001

To Whom it May Concern:

In accordance with the NYSDEC SPDES General Permit GP 0-20-001, part VII.H.2, the New York State licensed Professional Engineers employed by LaBella Associates and listed on the attachment to this letter are duly authorized to sign and seal Stormwater Pollution Prevention Plans (SWPPPs), NOIs, and NOTs prepared under their direct supervision.

Respectfully submitted,

LaBella Associates



Steven P. Metzger, PE
Chief Executive Officer

LaBella Professional Engineers duly authorized to sign and seal SWPPPs, NOIs, and NOTs:

Name:	Title:	Signature:	Date:
Kyle Ahearn, PE	Senior Civil Engineer		2/9/22
Jody Allen, PE	Senior Civil Engineer		2/24/2022
Anthony Bernardi, PE	Senior Civil Engineer		
Christian Bertram, PE	Senior Civil Engineer		2/9/2022
Brendan Bystrak, PE	Vice President		
Steven Calocerinos, PE	Senior Civil Engineer		2/9/2022
Sean Doty, PE	Senior Civil Engineer		2/24/2022
Jason Ebbs, PE	Municipal Group Leader		
Michael Flanagan, PE	Senior Civil Engineer		2/10/22
Don Hoefler, PE	Senior Project Engineer		
Reuben Hull, PE	Senior Civil Engineer		2/9/2002
Eric Johnson, PE	Senior Civil Engineer		2/9/2002
Roger Keating, PE	Senior Civil Engineer		2/9/2022
Walter Kubow, PE	Senior Civil Engineer		2/9/2022
Christopher Lapine, PE	Senior Civil Engineer		2/9/22
Joseph Lanaro, PE	Vice President		2/9/2022
Michael Mishook, PE	Vice President		2/10/22
Lauren Rodriquez, PE	Civil Engineer		2/9/2022
Jonathan Spurr, PE	Civil Engineer		2/10/22
Mary Steblein, PE	Senior Civil Engineer		2/9/2022
Robert Steehler, PE	Vice President		2/9/2022
Timothy Webber, PE	Vice President		2/9/2022
Kristopher Winkler, PE	Senior Civil Engineer		2/14/2022

APPENDIX J:
NYSDEC SPDES GENERAL PERMIT GP-0-20-001

LaBella
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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020 Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* (“SWPPP”) the reason(s) for the

deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharge*s.** The following *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

      (i) No Affect
      (ii) No Adverse Affect
      (iii) Executed Memorandum of Agreement, or

   d. Documentation that:

      (i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharges* from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

   c. the final SWPPP has been prepared, and

   d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

   a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project

b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

   d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

   c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

   b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

   c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

   d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

    a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner's or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity.*

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standard*s, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres: • Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E • Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E • Construction of a barn or other *agricultural building*, silo, stock yard or pen.
The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land: All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.
The following construction activities that involve soil disturbances of one (1) or more acres of land: • Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains • Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects • Pond construction • Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover • Cross-country ski trails and walking/hiking trails • Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development; • Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path. • Slope stabilization projects • Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

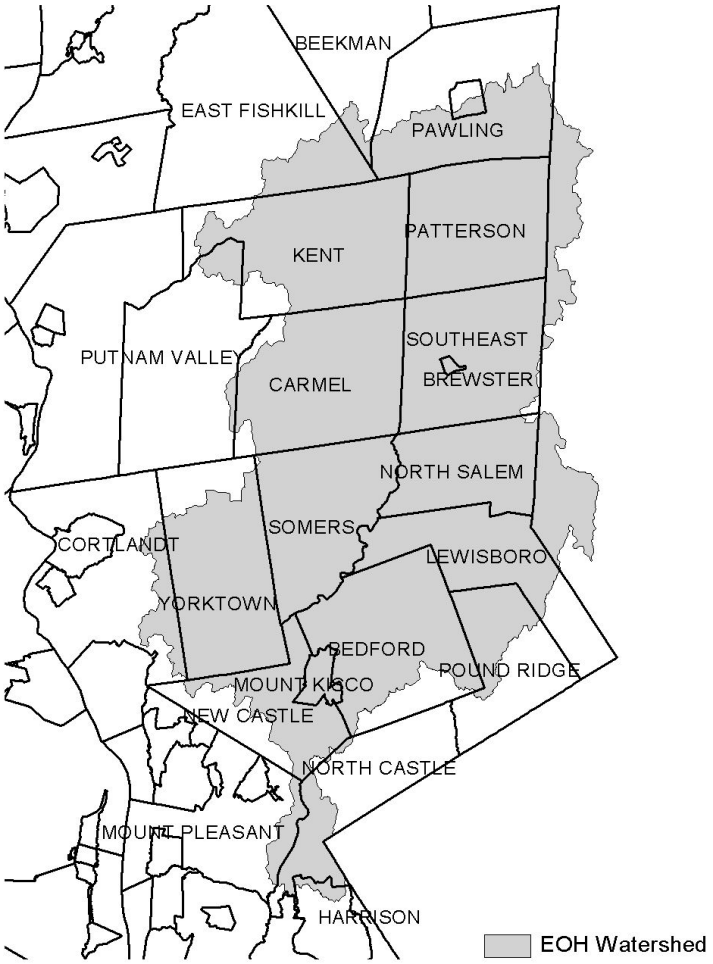


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

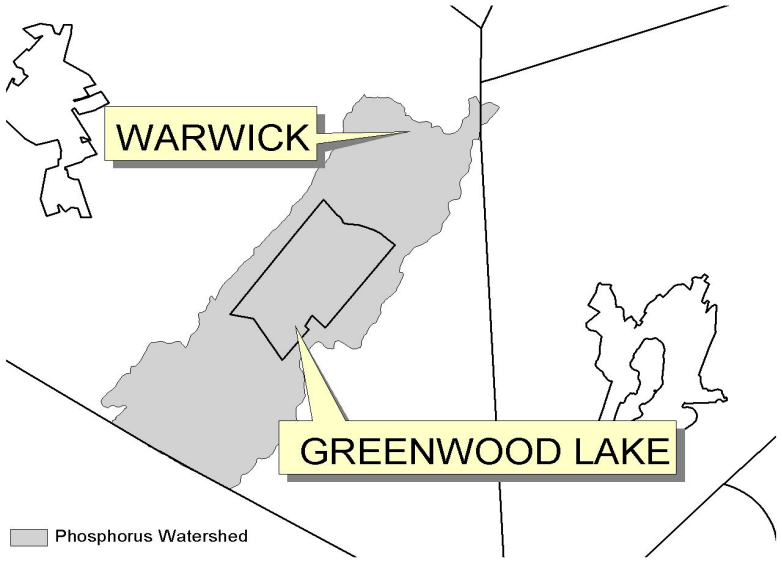


Figure 4 - Oscawana Lake Watershed

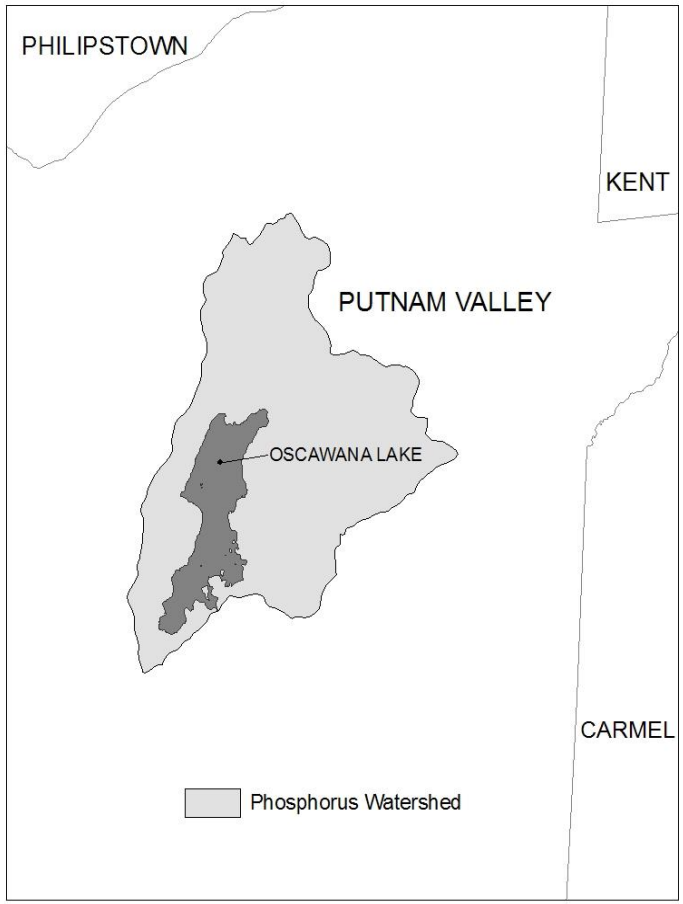
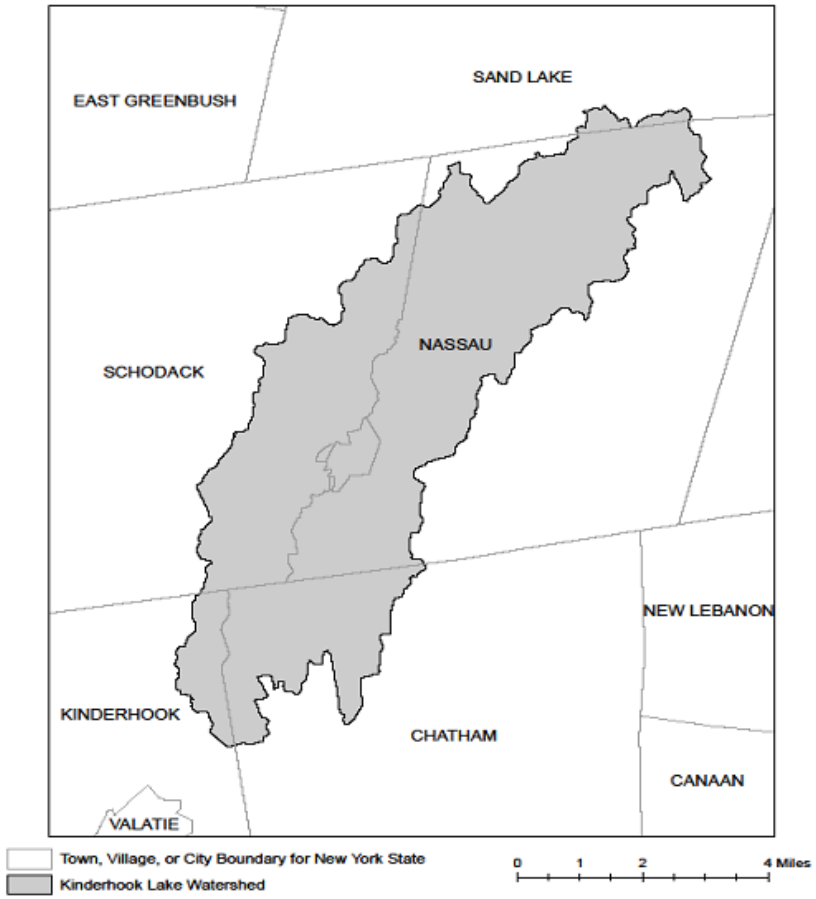


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Poughkeepsie Natural Resource Inventory
Conservation Analysis
South Avenue Multi-Family Development
South Avenue
City of Poughkeepsie
Dutchess County, New York

Issued: November 29, 2022
Revised January 27, 2023
Revised March 7, 2023

Prepared for:
ARGO Development
95 Chestnut Ridge Road
Montvale, NJ 07645

Prepared by:
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21 Fox Street Suite 201
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1.0 INTRODUCTION

1.1 Project Summary

The Applicant, ARGO Development is seeking site plan approval from the City of Poughkeepsie, to develop an 87-unit, mid-rise multifamily residential development with underground and surface-level parking. The proposed action will be located on an approximately 2.76-acre parcel on the west side of South Avenue (Tax Lot 937583) in the City of Poughkeepsie. The proposed action includes construction of a five-story building with 87, one-bedroom, apartments located over one level of underground parking (60 spaces), and 55 off-street surface parking spaces. The parcel is currently a wooded lot. The parcel is located within the R-D, Research and Development District. Residential development is a permitted use within the R-D zone, subject to the requirements of the High-Density R-5 District Permitted Uses [Section 19-3.16(2)], and further subject to all other requirements applicable to High-Density R-5 District residential development. Primary access will be provided via South Avenue. Municipal water and sanitary sewer connections are available in South Road. The proposed ground disturbance is approximately 2.5 acres. Since the site will have more than 1 acre of ground disturbance, the proposed action will also require a SPDES General Permit for stormwater.

1.2 Background

The total project site area is comprised of approximately 2.76 acres and is zoned Research and Development (R-D). The project site is comprised of one parcel, identified as follows:

- Tax parcel 6061-52-937583 (South Avenue, approximately 2.76 ac.)

Residential development is classified as a permitted use within the R-D zone, subject to the requirements of the High-Density R-5 District Permitted Uses and all other requirements applicable to High-Density R-5 District residential development. Per ZS 19-3.16(2)(a)(4), multifamily dwellings are classified as permitted uses within the R-5 District. The proposed project will comply with all of the lot, bulk, and design requirements and standards included in ZS 19-3.16(4), ZS 19-3.16(5), and ZS 19-3.16(6).

1.3 Site and Surrounding Area Description

The site is currently undeveloped and wooded. The land uses located within 1,000 feet of the project site are characterized by commercial (office buildings with associated parking), vacant (wooded areas), public services (Central Hudson Gas & Electric), and single-family residential properties. The site abuts vacant and commercial area (Poughkeepsie Imported Car Parts) to the south, New York State Route 9 to the west, commercial (office) and residential land to the north and east, and South Avenue to the east.

The project site is not located within a floodway, 100-year floodplain, or 500-year floodplain. The project site is also not located over an aquifer.

1.4 Approvals, Consultations and Referrals

Table 1 provides a list of the approvals/permits that are anticipated for the project.

Table 1: Anticipated Approvals and Permits

Agency	Approval/Permit
City of Poughkeepsie Planning Board	Site plan
City of Poughkeepsie Zoning Board of Appeals	Area variance (parking)
City of Poughkeepsie Department of Public Works (DPW)	Highway Work Permit; Water and Sewer Hook-ups
Dutchess County Department of Planning and Development	GML 239m referral
NYS Department of Environmental Conservation	SPDES General Permit GP-0-020-001
NYS Department of Transportation	Drainage connection
NYS Office of Parks, Recreation, and Historic Preservation (OPRHP)	SHPO Consult

2.0 CONSERVATION ANALYSIS

The project has been evaluated according to the Natural Resources Inventory (NRI) for the City of Poughkeepsie as discussed in the following sections.

2.1 Geology and Soils

According to the NRI Report, Figure 1, the project site's bedrock geology is Taconic melange (Otm), which is considered permeable in the City of Poughkeepsie. The surficial geology of the site is described in the report as featuring glacial till, which is described in the NRI as having a variable texture (boulders to silt).[1] Table 2 provides characteristics of soil types expected to be found on site according to the NRI, Dutchess County Soil Survey information available in GIS, and the Natural Resource Conservation Service website.

[1] The Environmental Cooperative at Vassar Barns. *Natural Resources Inventory for the City of Poughkeepsie.* 2019. Map 2.2 Surficial Geology. Page 27.

Table 2: Characteristics of Anticipated Soil Types within Project Site

% of SITE	SOIL SYMBOL	SOIL TYPE	FARMLAND CLASSIFICATION	SLOPES	DRAINAGE	DEPTH TO WATER TABLE	DEPTH TO BEDROCK
98.2	Ud	Udorthents, smoothed	Not prime farmland	0-8%	Well drained	~36 to 72 inches	>80 inches
1.8	Ur	Urban Land	Not prime farmland				

The site is almost entirely comprised of Udorthents, smoothed soil (Ud). The Udorthents, smoothed soils are well drained soils and have a depth to water table of about 3 to 6 feet.

Groundwater encountered during the construction will be pumped from the open excavations and discharged to approved sediment trapping devices in accordance with NYSDEC guidelines.

2.2 Water Resources

According to Figure 2, which is drawn from the NRI mapping service, the project site includes three wetlands. However, according to NYSDEC Wetland and Stream information available through GIS, and the EAF Mapper, there are no wetlands or other waterbodies on or near the project site. There was no standing water observed during the site walk with the City of Poughkeepsie on January 24, 2023. This is indicative of the well-drained on-site soils consistent with the Udorthents soil type. Soils supporting wetlands would be hydric in nature (saturated). Also there was no evidence of wetland vegetation in the slight depressions on-site.

The project development will involve greater than one acre of ground disturbance; therefore, coverage under the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities will be sought. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared in conformance with the most current New York State Stormwater Management Design Manual and New York State Standards and Specifications for Erosion and Sediment Control. With the implementation of the SWPPP, no significant adverse impacts to wetlands and watercourses located off site will occur.

2.3 Habitat

The NRI maps significant habitats in Map 4.1, page 70. This map indicates that the project site is comprised of hardwood swamps and upland hardwood forest land uses. The parcel is currently a wooded, undeveloped lot.

According to the NRI online mapping tool, the same parts of the project site are characterized by hardwood swamps and upland hardwood forest (see Figure 3). The upland hardwood forest habitat is characterized by closed (forested) area with wetlands underneath.

Map 4.4 on page 76 identifies Habitat Envelopes and Potential Corridors, with Significant Habitat Areas identified. In this map, the project site is identified as Significant Habitat Area.

According to the NYSDEC Environmental Resource Mapper (Figure 6), there are known occurrences of the atlantic sturgeon, shortnose sturgeon, and bald eagle on or in the vicinity of the project site.

According to the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), the project lies within the range of records for indiana bat (endangered) and the monarch butterfly, a candidate species. Candidate species are not regulated by the USFWS (See Attachment A). The IPaC also states that there are no critical habitats at the project location.

The proposed project will require clearing of the entire wooded site (2.5 acres) for construction of the proposed apartment building. To avoid direct or indirect take of bat species, it is recommended that any forest clearing take place between October 30 and March 31, as during this time, the bats would be hibernating and not present onsite.

The atlantic sturgeon and shortnose sturgeon are aquatic species and are found within the Hudson River or immediately adjacent tributaries. The Hudson River is approximately 1,450 feet away from the project site, and therefore the proposed project will not result in any adverse impacts to these species.

An information request has been submitted to NYSDEC for further information regarding the bald eagle. However, based on the NYSDEC Environmental Resource Mapper, the centroid for the bald eagle element occurrence record appears to lie in the vicinity of the Poughkeepsie Rural Cemetery. The heavily traveled NYS Route 9 and the offices for Central Hudson Gas & Electric, lie between the project site and the element occurrence record.

Based on Google Earth, the area within 330 feet of the southern edge of the property is dominated by the heavily traveled NYS Route 9 and the northern portion of the Central Hudson Gas & Electric offices. From 330 to 660 feet from the southern property boundary, the area is dominated by the parking lots for Central Hudson Gas & Electric offices. From 660 to approximately 2,795 feet, the area is dominated by the Poughkeepsie Rural Cemetery. A pond, in the center of the Poughkeepsie Rural Cemetery, which may be close to the location of the bald eagle nest, is more than a ½ mile (2,795 feet) from the southern limits of the project area. Given the intervening highway and commercial land use, and the ½ mile distance from the project area, it is unlikely that the construction or operation of the proposed project will have adverse impacts on the bald eagle. LaBella is making an inquiry to NYSDEC Region 3 to determine the location of the nest and to consult on the bald eagle as necessary.

The project site lies in the vicinity of a significant natural community as shown by the crosshatched pattern on figure 6. This significant natural community is the Hudson River Estuary. The project site lies approximately 1,450 feet away from the Hudson River, and thus is not expected to have any effect on the significant natural community.

2.4 Land Use

The project site is located in the Research and Development District (R&D). It is not located on agriculturally farmed land and is not within the County's Agricultural District. The project site is currently wooded and undeveloped.

According to City Zoning Section (ZS) 19-3.16(1), the City of Poughkeepsie created the R&D District to provide areas for intense residential development accessible to all commercial, cultural and community services and major transportation facilities and to provide opportunity for limited nonresidential activity that will enrich the urban environment.

The land uses located within 1,000 feet of the project site are characterized by commercial, residential, public and community services, vacant and wooded areas (see Figure 5). The site abuts vacant and commercial area (Poughkeepsie Imported Car Parts) to the south, New York State Route 9 to the west, commercial (office) and residential land to the north and east, and South Avenue to the east.

The proposed use, as an 87-unit, mid-rise multifamily residential development with underground and surface-level parking, is a permitted use within the R&D zone, subject to the requirements of the High-Density R-5 District Permitted Uses [Section 19-3.16(2)], and further subject to all other requirements applicable to High-Density R-5 District residential development.

Per ZS 19-3.16(2)(a)(4), multifamily dwellings are classified as permitted uses within the R-5 District. And, per ZS 19-3.16(3)(a), off-street parking is classified as an accessory use within the R-5 District. The proposed project will require an area variance from the Zoning Board of Appeals for parking.

2.5 Historic and Archaeological Resources

According to the NRI (Figure 6), the project site does not contain and is not substantially contiguous to any Local, National or State Historic Register site nor is it within a historic district.

According to the NYS Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) Cultural Resource Information System (CRIS) mapping (Figure 7), there are no National or State Historic Register sites on or substantially contiguous to the project site.

The project site is located within a known archaeologically sensitive area. Therefore, a consultation request will be submitted to NYSOPRHP.

2.6 Recreational Resources

The site does not abut any recreational resources. The project site is located on privately-owned land that is not currently used by the public for recreation (see Figure 7).

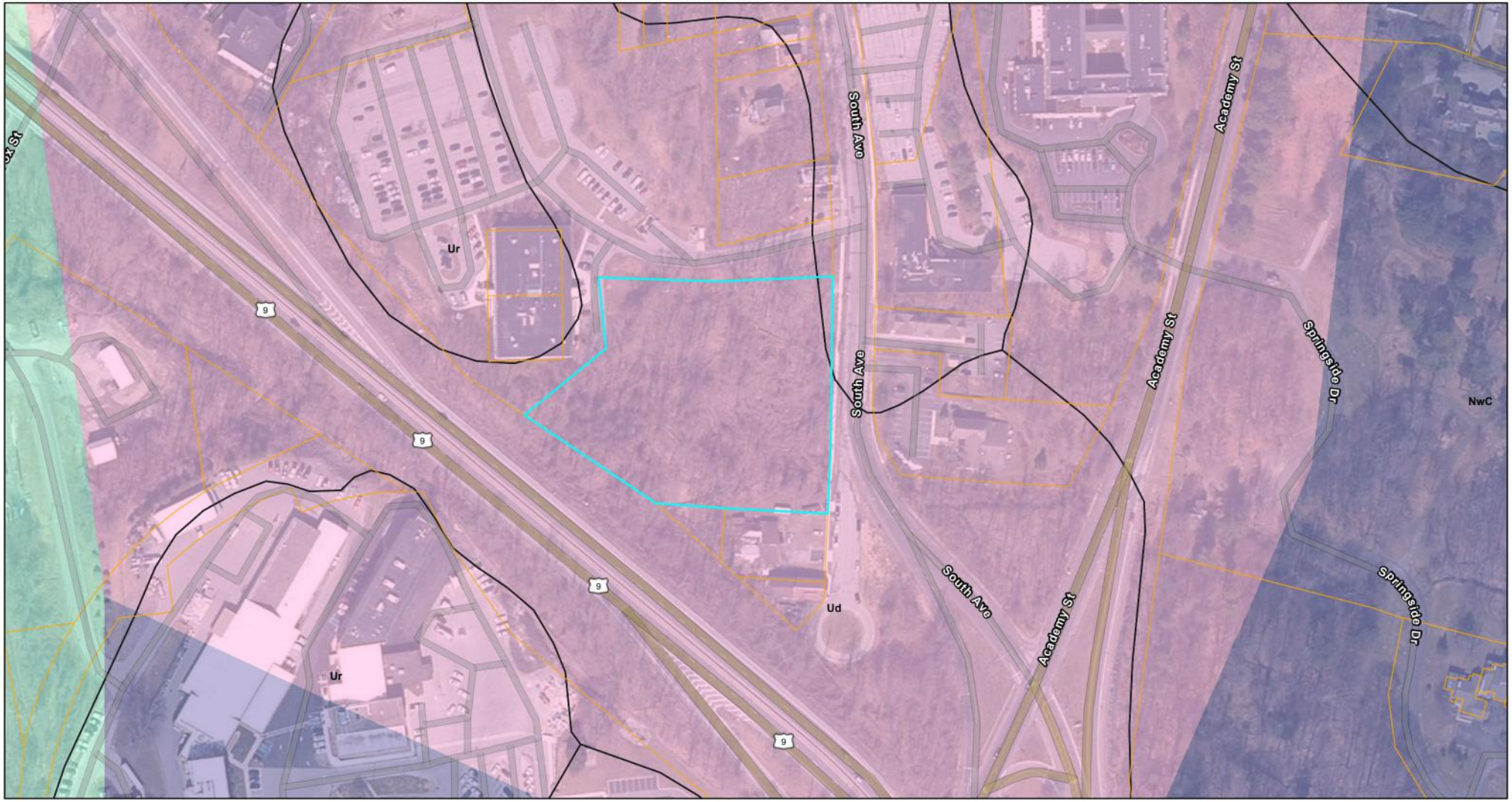
2.7 Conclusion

The project site is identified in the NRI Report as a site that includes hardwood swamps and upland hardwood forest. The proposed project involves the development of a 2.76-acre wooded and undeveloped site, into an 87-unit, 5-story mid-rise multifamily residential

development with underground and surface-level parking. The site is zoned for the proposed use and has been modified from its natural condition by the construction of the adjoining uses and roadways and historic development as far back as 1936. The site does not contain wetlands or watercourses and the NYSDEC has been consulted with regard to the bald eagle concern. A consultation with NYSOPRHP will also be undertaken. For these reasons, the proposed project is consistent with the policy objectives of the Natural Resources Inventory for the City of Poughkeepsie.

FIGURES

South Avenue ARGO Development: Geology and Soils



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City of Poughkeepsie Boundary

Parcel Boundaries

Soils

Bedrock Geology

Graywacke, shale (Oag)

Taconic melange (Otm)

Water

1:2,257

0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

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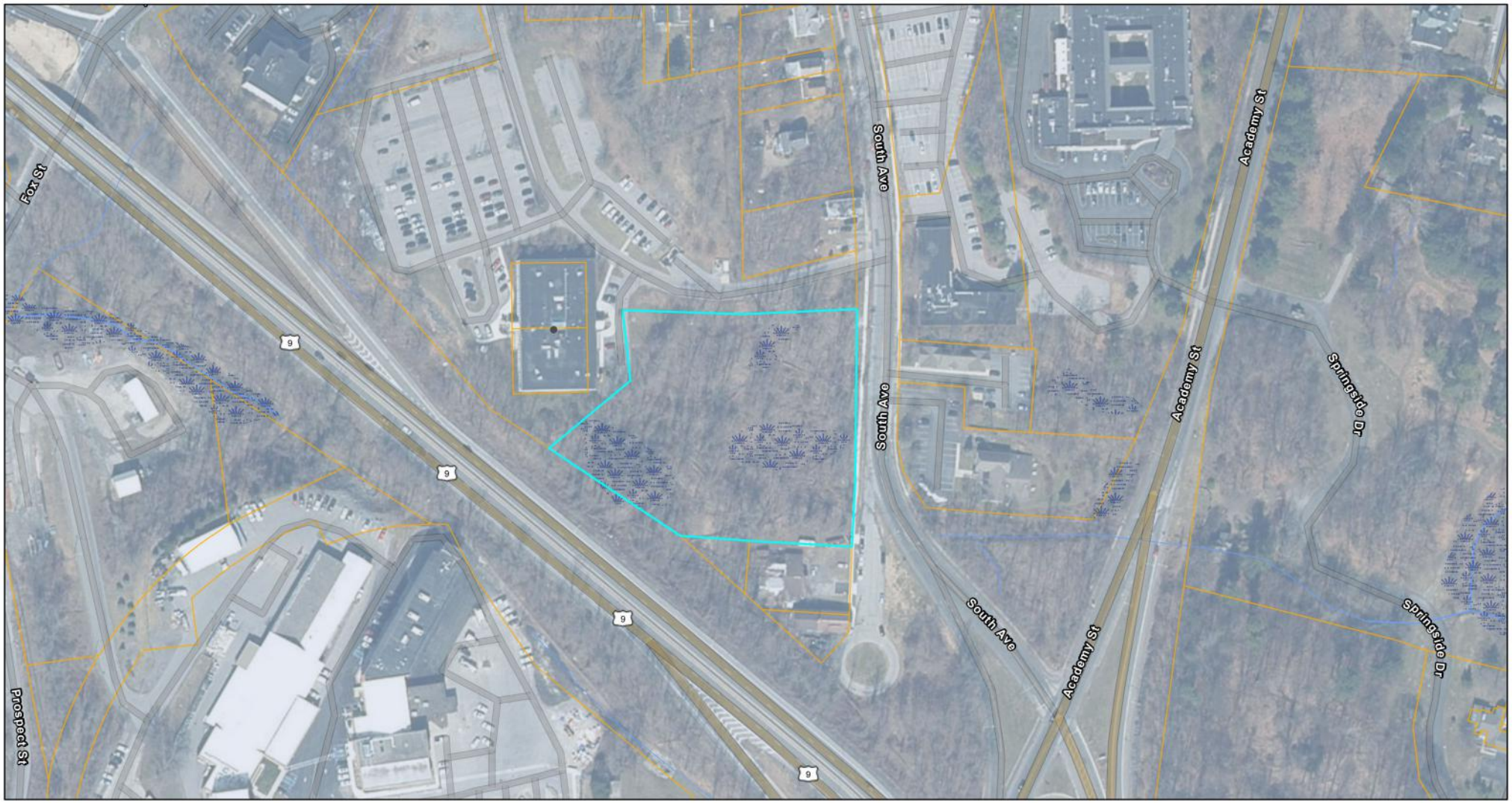
South Avenue ARGO Development: Water Resources



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Parcel Boundaries

City of Poughkeepsie Boundary

Wetlands

Streams

Intermittennt

Watershed

Hudson River Direct Drainage E

1:2,257

0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

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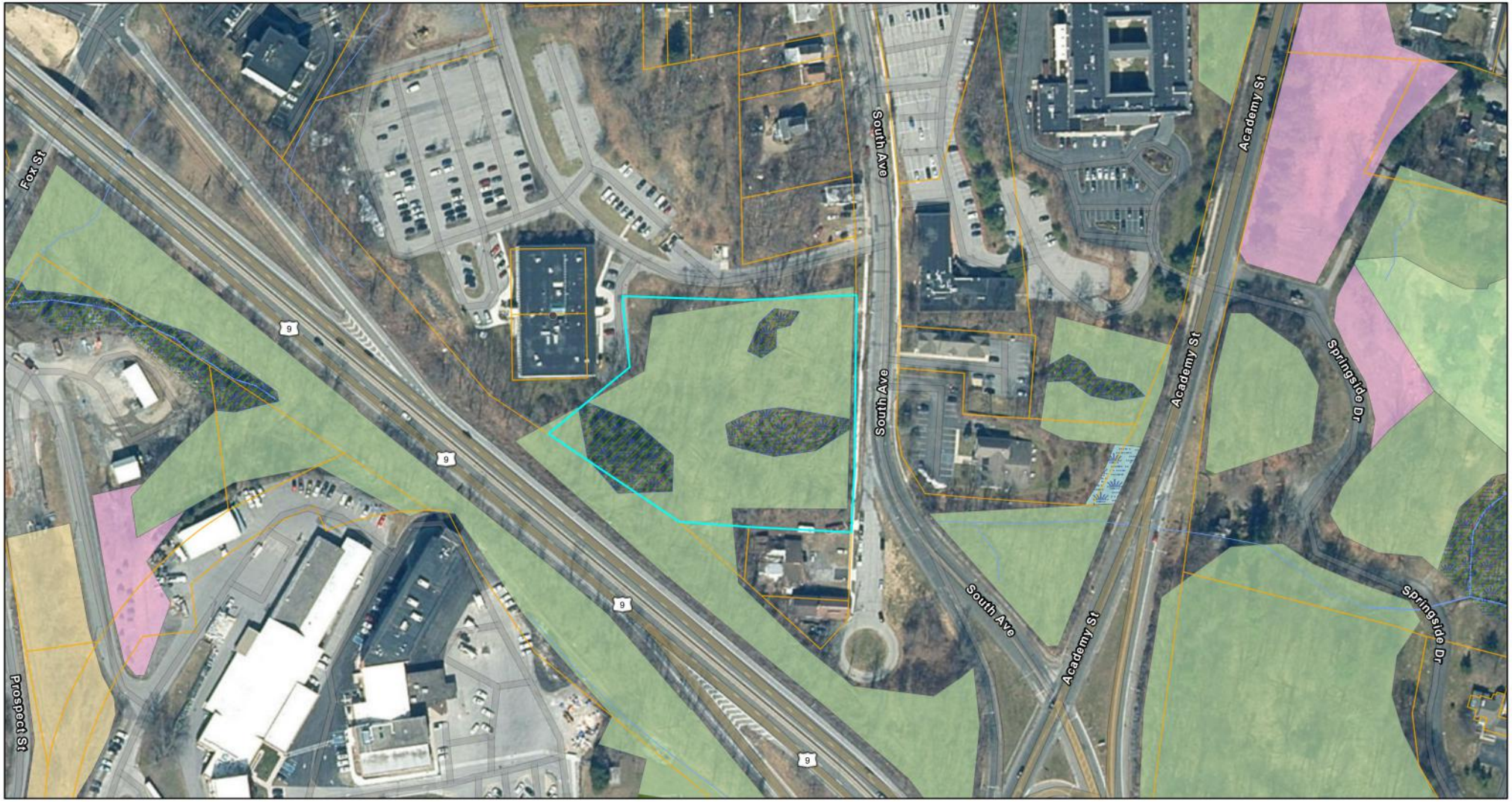
South Avenue ARGO Development: Habitats



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Parcel Boundaries
City of Poughkeepsie Boundary
Wetlands

Hudsonia Streams
Intermittennt
Hudsonia Habitats
Developed
Cultural
Hardwood swamp
Upland shrubland
Wet meadow
Upland meadow
Upland hardwood forest
Upland conifer forest

1:2,257

0 0.02 0.04 0.08 mi
0 0.03 0.07 0.13 km

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Applicant

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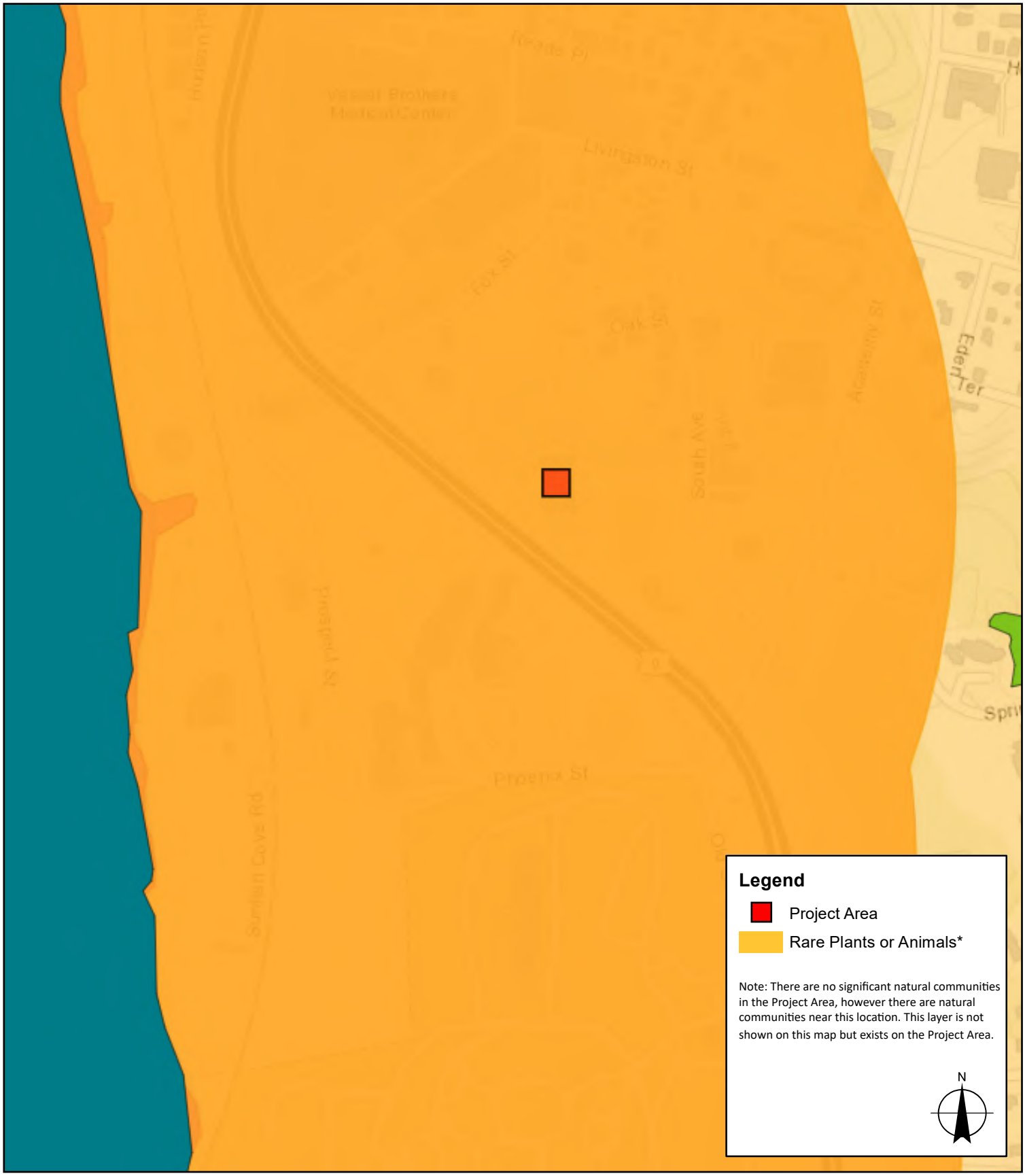


Sources:

1. Rare Plants or Animals and Significant Natural Communities: NYSDEC Environmental Resource Mapper (ERM) 2022

LaBella
Powered by partnership

South Avenue
Poughkeepsie, NY
12601

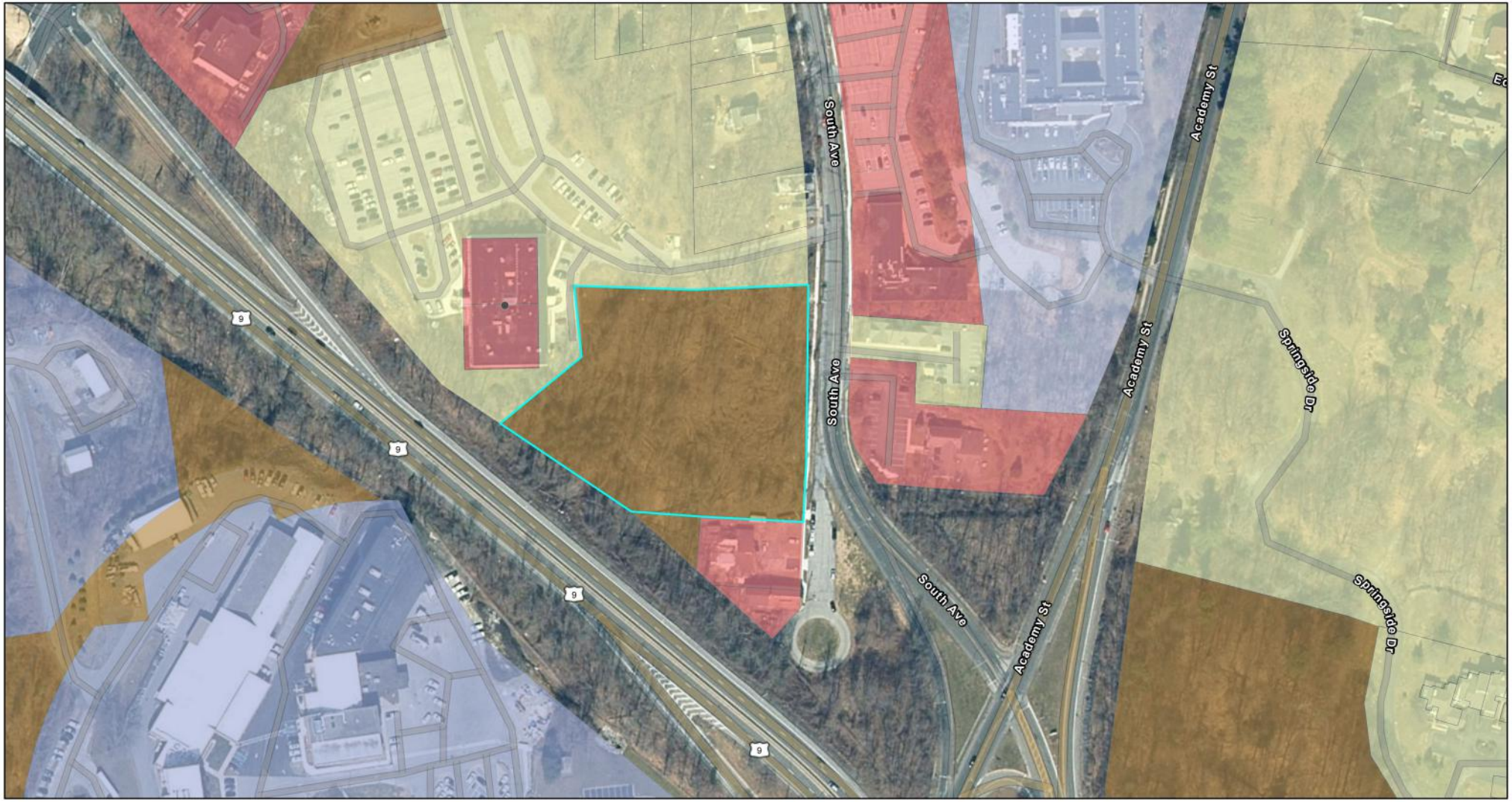
South Avenue
ARGO Development

LaBella Project No: 2222201
Date: 11/29/2022

NYSDEC Environmental Resource Map

FIGURE 4

South Avenue ARGO Development: Land Use



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City of Poughkeepsie Boundary

Land Use by Parcel

Commercial

Community Services

Public Services

Residential

Vacant Land

1:2,257

0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

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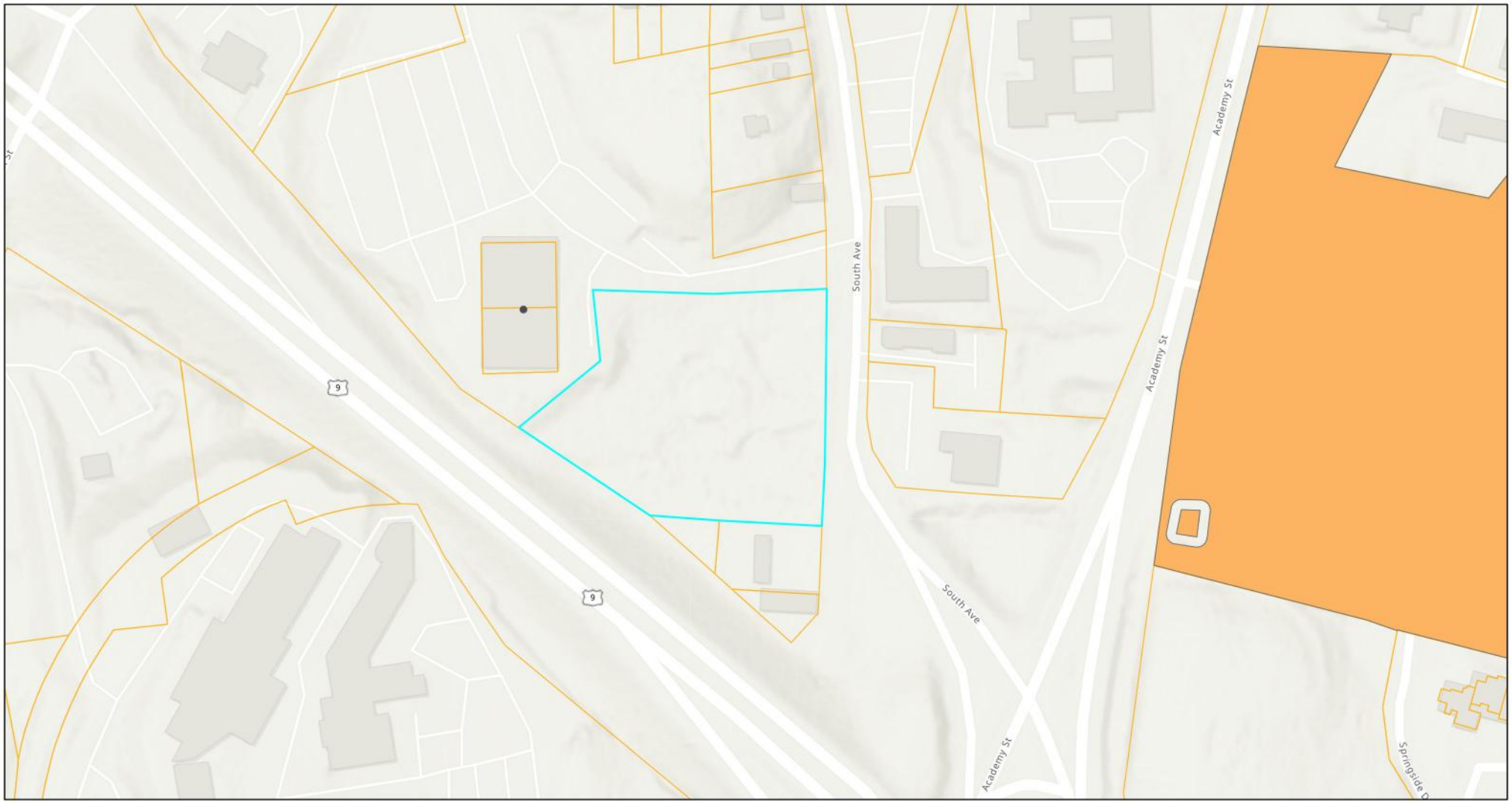
South Avenue ARGO Development: Historic Resources



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Parcel Boundaries

Historic Sites (2021)

Local, State, and National

City of Poughkeepsie Boundary

1:2,257

0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

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ArcGIS Web AppBuilder
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South Avenue ARGO Development: Recreational Resources

11/16/2022, 2:02:27 PM

Parcel Boundaries

City of Poughkeepsie Boundary

Trails

Parks and Open Spaces

1:2,257

0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

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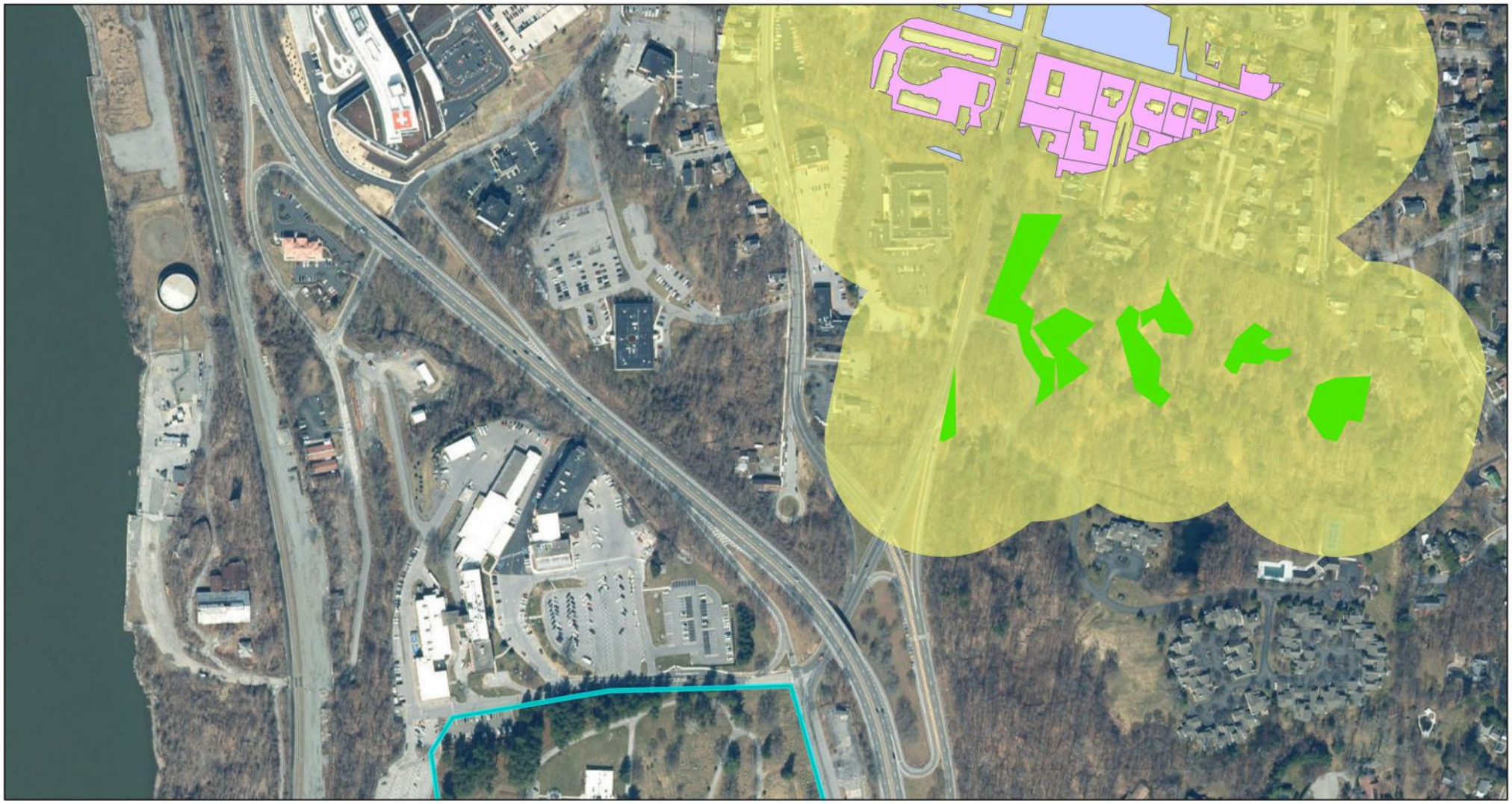
Applicant

New York State, Maxar, Microsoft | Esri Community Maps Contributors, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA |

South Avenue ARGO Development: Pollinator Pathway



11/16/2022, 2:04:53 PM

Poughkeepsie Greenspace
Subject to Site Review
Poughkeepsie Boundary
Overlapping Parcels
Potential Pathway
Dutchess County Parks
Not Subject to Site Review

1:4,514

0 0.04 0.09 0.17 mi

0 0.05 0.1 0.2 km

New York State, Maxar

ArcGIS Web AppBuilder
New York State, Maxar |

February 20, 2023

City of Poughkeepsie Planning Board
Attn: Anne Saylor, Chairperson
63 Civic Center Plaza
Poughkeepsie, NY 12601

cc: Natalie Quinn, Development Director

RE: 2022-055: SOUTH AVENUE LOT

MASS DESIGN GROUP

1 Chandler Street Suite 101
Boston, MA 02116

289 Main Street Suite 101
Poughkeepsie, NY 12601

hello@massdesigngroup.org
+1 857 233 5788
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massdesigngroup.org

Dear City of Poughkeepsie Planning Board,

We are in the receipt of the site plan and elevation drawings forwarded to our office on January 30. The applicant and design team convened with Chris Kroner, Natalie Quinn and Lori Garcia on February 9th, 2023 to discuss their proposed project on South Avenue. Attendees from the design team included: Michael Abuladez, CEO, Argo Development; Christopher Lapine, P.E., LEED AP, LaBella Associates, Mike McCormick of LMV Architects. The discussion was a preliminary workshop in nature, and they gave an introduction to the project, its intent and constraints to which MASS elevated some clarifying questions for further consideration. They presented their chic, contemporary aesthetic, as in dialogue with the context of nearby commercial buildings. As this is a large-scale housing building near a gateway point into the city of Poughkeepsie off of Route 9, we are hoping that this project will capture the attention of the public.

Drawings/Elevations
In the conversation the development team shared example renderings that were evolving the design; these renderings have key differences to the elevations, especially as it pertains to the scale of the entrance volumes. *We would encourage coordinating renderings and elevations for better clarity in subsequent review, or adding notations as to which document governs.*

Exterior Staircase
The project hopes to activate the streetscape sidewalk with both a ramped sidewalk and exterior staircase near the South Avenue entrance. The sidewalk as currently drawn while it may meet minimum requirements however feels small in comparison with the building. *We recommend widening the staircase to be grander in scale with the width of the entry volume of the building, or a similar study by the design team.*

Exterior Windows/Balconies
We understand that the operation of the windows will be fixed picture windows above with awning (pull-in) windows below. Through discussion with the design team, we see that this choice mates well with the architectural intent.

MASS appreciates the inclusion of balconies, understanding the importance of

outdoor space in a post-pandemic development that looks not just for fresh air intake, but access to fresh air. *We see the balustrades on the included rendered images as an opportunity to consider patterns, material and/or craft of the region as the basis for a fabricated railing that helps to land this new project in an existing context.*

Parking Lot Apertures
Discussion was held regarding the ground floor and subsurface parking lots, and how the fresh air intakes would be treated in the building wall. *This has been the discussion of previous applicants, and we would ask the design team to elaborate on the intent there (louvers, metal mesh, vine supporting grids, etc.)*

Roof
Roof plan needs clarification as we understand there will be Rooftop Mechanical Units, but *we want to understand any proposed Bulkheads, Openspace, MEP Areas, Screening, etc for another review.*

Generator
Please clarify the generator location, fuel source and utility runs associated for the planning board to understand.

Materials
In the workshop we heard that the applicant is considering Cement Board Paneling vs Sheet Metals. Alternative Metal Sheeting approaches such as Zinc, and different shingling strategies such as at the Lace Mill Factory in Kingston were discussed. *Please submit a materials sheet and/or physical samples for the planning board to review.*

Exterior Lighting
Discussion was held regarding lighting, and which lighting approach would be most appropriate on the facade. Given the contemporary look of the design, *we encourage the design team to revise their wall mounted and parking lamp pole luminaires with something in the same spirit as the design building.*

Benches, Tables, Site Features
Similar to the lighting, the current detail for the benches appears to be a stock historical bench, and *we would encourage them to specify a bench more compatible with the contemporary architecture design. Are these the same benches that are shown in the seating area with crushed stone on the Northwest corner of the site?*
Please clarify the proposed picnic table specification (material/style).
Please clarify the field stone planter with a bench in the center of the pedestrian circle near the back entry with a drawing or precedent image.

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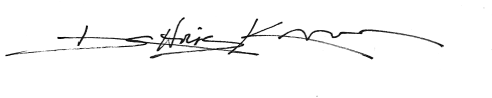
Landscaping
We are encouraged that the siting of the building provides some screening of the surface parking lot behind, and *encourage additional density of tree plantings to add screening.*
We notice the shrubline along South Avenue, and while that is an encouraging buffer zone, *we would ask the applicant to consider adding street trees (especially deciduous) along South Avenue to help enliven the streetscape further.*

Given the scale and location, we look forward to seeing this important anchor project for the south side of Poughkeepsie evolve through public participation in collaboration with community partners.

Sincerely,
Chris Kroner



Principal
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THE CITY OF POUGHKEEPSIE

DEPARTMENT OF PUBLIC WORKS & ENGINEERING

SITE PLAN REVIEW
Form #1

1. Date: February 17, 2023
2. Name of Site Plan: South Avenue – Multi Family Development
3. Address or Location: South Avenue (Grid #6061-52-937583)
4. Owner: South Avenue Real Estate Associates LLC
5. Engineer/ Architect: LaBella
6. Yes ☐ No ☐ The site plan as forwarded by the Planning Department is acceptable and will be signed off on with no condition(s).
7. Yes ☐ No ☐ The site plan as forwarded by the Planning Department is acceptable and has been signed off on with no condition(s).
8. Yes ☒ No ☐ The applicant should be notified that the Dept. of Public Works/Engineering requires the following comment(s) be addressed:

1. Verify and demonstrate available water utility is sufficient for proposed development for both domestic and fire suppression. Any fire suppression requirements to be discussed with City Fire Department and must demonstrate what is being requested is achieved.
2. Provide utility report demonstrating available sanitary sewer utility is sufficient for proposed development. Include discussion of water utility for domestic and fire suppression requirements.
3. Indicate location of all proposed backflow devices. Coordinate with City Building Department on type that meets requirements per code.
4. Provide City Standard details for, Curbs, Sidewalk, Driveway Aprons, Pipe Trench, Water TS&V etc. for work within City ROW.
5. Sheet C160 and C560 indicates Mueller Hydrant. Provide and indicate on Site Plan City Standard Hydrant – American Darling B-62-B. No equivalent or exceptions.
6. Indicate and show on Sheet C160 and C560 water tapping sleeve and valve and redundant valve on back side of the curb. Both valves to be Red Top, Right Open.
7. Provide design, stability calculations and certification by NYS Licensed PE for retaining walls greater than 5 feet in height.
8. The engineer shall certify that the native soils are acceptable for use as an infiltration practice for the development. In the event the proposed infiltration practice cannot be used, an alternative means to handle site stormwater will need to be developed and implemented for the project. Any alternative must be approved by the City Engineer.
9. Proposed development indicates 2.5 acres of disturbance. Provide SWPPP for review.
10. Proposed development indicates storm sewer discharge to NYSDOT owned storm sewer. Any work within or adjacent to NYSDOT ROW or Utility Easements must be reviewed and approved by the respective agency. Provide copies of correspondence and/ or approvals.
11. Any food prep areas within development requires properly sized and designed grease trap. Provide size, location and maintenance schedule on site plan, if applicable.

12. Show on Site Plan maintenance and protection of traffic for work within City ROW.
13. Provide an estimate of costs for site work.

Joseph T. Kane, P.E.
Assistant Civil Engineer

Note: If #6 or #7 above are checked "yes" there is no need to go on to Form #2.

THE CITY OF POUGHKEEPSIE
FIRE DEPARTMENT

505 MAIN STREET
POUGHKEEPSIE, NY 12601
TEL: 845-451-4079 FAX: 845-451-4191
FIRE CHIEF JOSEPH FRANCO
JFRANCO@CITYOFPOUGHKEEPSIE.COM

SITE PLAN REVIEW FORM

TO: Planning Board

FROM: Fire Chief Joseph Franco

DATE: February, 16th 2023

ADDRESS: South Ave Grid # 6061-52-937583

Site Plan Submittal Date 1/27/23

____ The site plan is acceptable and will be signed without conditions.

__X__ The site plan is acceptable and will be signed with the following conditions:

1. *Upon completion of the installation of fire sprinkler and standpipe system, the fire department will perform a flow test to verify required flow is obtained as stated in hydraulic calculations. If it is found the water volume is not sufficient, developer will need to increase volume of water to required flow demand*

2. *Upon construction completion, fire department will do a performance test verifying the clearance of TL-2 accessing and exiting property as discussed*

Joseph Franco, Fire Chief

2-16-23
Date

New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

February 28, 2023

Brittany Micheline
LaBella Associates
21 Fox Street
Poughkeepsie, NY 12480

Re: DEC
South Avenue Multi-Family Development
City of Poughkeepsie, Dutchess County, NY
23PR00880

Dear Brittany Micheline:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

rev: J. Carter

BUILDING DEPARTMENT

CITY OF POUGHKEEPSIE
62 CIVIC CENTER PLAZA, 2ND FLOOR
POUGHKEEPSIE, NY 12601
Phone: (845) 451-4007 Fax: (845) 451-4006

Eric Philipp
Building Inspector

SITE PLAN REVIEW

DATE: 1-30-23

PROJECT ADDRESS: South Ave #937583

PROJECT NAME: South Avenue Multi-family Development

OWNER: ARGO Development

ENGINEER/ARCHITECT:

☑ **The site plan is acceptable and will be signed with no conditions.**

☐ **The site plan cannot be approved as submitted. The following comments must be addressed or conditions satisfied:**

_____

_____

_____

_____

_____

_____

Eric Philipp
Building Inspector

CITY OF POUGHKEEPSIE POLICE DEPARTMENT

SITE PLAN REVIEW

DATE: 02/04/2023

PROJECT NAME: South Avenue #937583

PROJECT ADDRESS: South Avenue #937583

☒ **THE SITE PLAN IS ACCEPTABLE AND WILL BE SIGNED WITH NO CONDITIONS**

☐ **THE SITE PLAN IS UNACCEPTABLE.**

CONDITIONS:

APPROVED BY CHIEF THOMAS PAPE OR AGENT:	**DATE:**
Sgt #112 **SGT. E. ACKEN #112**	02/04/2023

William F.X. O'Neil
County Executive

Eoin Wrafter, AICP
Commissioner

County of Dutchess

Department of Planning and development

March 15, 2023

To: Planning Board, City of Poughkeepsie
Re: ZR23-043, South Avenue Residential Building – Site Plan and Special Use Permit
Lot: 937583, South Avenue and US 9

The Dutchess County Department of Planning and Development has reviewed the subject referral within the framework of General Municipal Law (Article 12B, §239-l/m).

Action

The applicant is seeking site plan and special use permit approval for the construction of a 5-story multifamily residential building to include 87 one-bedroom units and related parking, landscaping, and lighting.

Comments

Upon review of the materials submitted to our office, we offer the following comments:

- Additional landscaping, especially shade trees, could be added along the south side of the building to buffer the residences from the neighboring non-residential use, and to provide some buffering between the building and nearby Route 9.
- The applicant could consider incorporating green design techniques by adding appropriate plantings such as native grasses, wildflowers, or other herbaceous vegetation to the proposed retention basin along the southwest wall of the building. This could enhance both the functionality and aesthetic of the area, transforming it from an engineered basin to an environmental and visual amenity for the many residences overlooking the area.
- There are four parking spaces, shown between the refuse enclosure and the entrance to the underbuilding parking, which do not benefit from a direct connection to the courtyard entrance to the building. A pedestrian connection could be added, perhaps via stairs through the retaining wall opposite the spaces, to give people parked there a more direct and safe route to access the main building entrance.

Recommendation

The Department recommends that the Board rely upon its own study of the facts in the case with due consideration of the above comments.

Eoin Wrafter, AICP, Commissioner
By

Heather M. LaVarnway, CNU-A
Senior Planner

Dutchess County Department of Planning and Development

Fax Info Only		
	To	Date #pgs
	Co./Dept.	From
	Fax #	Phone #

239 Planning/Zoning Referral - Exemption Communities

Please Fill in this section

Municipality: **City of Poughkeepsie**

Referring Agency: **Planning Board**

Tax Parcel Numbers(s): **9375830000**

Project Name: **South Avenue #937583**

Applicant: **ARGO Development**

Address of Property: **South Ave, Poughkeepsie, NY 12601**

**Exempt Actions:*
239 Review is NOT Required**

- Administrative Amendments (fees, procedures, penalties, etc.)
- Special Permits for residential uses (accessory apts, home occupations, etc.)
- Use Variances for residential uses
- Area Variances for residential uses
- Renewals/Extension of Site Plans or Special Permits that have no changes from previous approvals

No Authority to review these Actions

- Subdivisions / Lot Line Adjustments
- Interpretations

☐ Exempt Action submitted for informal review

Actions Requiring 239 Review

- ☐ Comprehensive/Master Plans
- ☐ Zoning Amendments (standards, uses, definitions, district regulations, etc.)
- ☐ Other Local Laws associated with zoning (wetlands, historic preservation, affordable housing, architectural review, etc.)
- ☐ Rezonings involving all map changes
- ☐ Architectural Review
- ☑ Site Plans (all)
- ☐ Special Permits for all non-residential uses
- ☐ Use Variances for all non-residential uses
- ☐ Area Variances for all non-residential uses
- ☐ Other (Describe):

Parcels within 500 feet of:

- ☑ State Road: **Rt 9**
- ☐ County Road:
- ☐ State Property (with recreation area or public building)
- ☐ County Property (with recreation area or public building)
- ☐ Municipal Boundary
- ☐ Farm operation in an Agricultural District

Date Response Requested:

Entered By: **Garcia, Lori**

These actions are only exempt in municipalities that signed an intermunicipal agreemment with Dutchess County to that effect.

For County Office Use Only

Response From Dutchess County Department of Planning and Development

No Comments:

- ☐ Matter of Local Concern
- ☐ No Jurisdiction
- ☐ No Authority
- ☐ Withdrawn
- ☐ Incomplete - municipality must resubmit to County
- ☐ Exempt from 239 Review
- ☐ None

Comments Attached:

- ☑ Local Concern with Comments
- ☐ Conditional
- ☐ Denial
- ☐ Incomplete with Comments- municipality must resubmit to County
- ☐ Informal Comments Only (Action Exempt from 239 Review)

Date Submitted: **2/14/2023**	Notes:	☑ Major Project
Date Received: **2/14/2023**		Referral #: **ZR23-043**
Date Requested:		
Date Required: **3/15/2023**	☐ Also mailed hard copy	Reviewer: Heather M. LaV
Date Transmitted: **3/15/2023**		