



**TOWN OF NEWBURGH  
PLANNING BOARD  
TECHNICAL REVIEW COMMENTS**

**PROJECT NAME:** HILLSIDE LAND DEVELOPMENT  
**PROJECT NO.:** 22-27  
**PROJECT LOCATION:** SECTION 34, BLOCK 2, LOT 66/24 JEANNE DRIVE  
**REVIEW DATE:** 28 APRIL 2023  
**MEETING DATE:** 4 MAY 2023  
**PROJECT REPRESENTATIVE:** FELLENER ENGINEERING, LLP

1. A revised Wetland Delineation has been added to the plan sheets. 0.03 acres of wetland disturbance is proposed. Pre-Construction notice to the Army Corps of Engineers is required to be submitted.
2. There are many references to the Orange County Health Department on the plans regarding the subsurface sanitary sewer disposal system. No Orange County approval for the septic system is required.
3. The location of the percolation and deep test should be depicted on the plan sheet.
4. The applicants representative are requested to confirm that all parking areas are to be curbed. Curbing should be called out on the plans. The applicants representative is requested to evaluate the use of curb inlet catch basins along the curb lines.
5. All stormwater facilities which contain standing water in the Town of Newburgh must be fenced.
6. The outlet for the Cultech storm tech chambers should be labeled on the plans.
7. The outlet location for the pocket pond should be depicted on the plans. It is unclear where on the plan the 399 and lower elevation exists.
8. The Tree Preservation Law Section 172 of the code requires a calculation for various trees to be removed on the site.
9. The Tree Preservation Plan is not colorized based on existing trees to be removed. It is recommended that a report and calculation consistent with Chapter 172 of the Town Law be provided.
10. The employee count in the parking calculation differs from the employee count on the subsurface sanitary sewer disposal design. The applicant's representative is requested to evaluate the employee counts.
11. The water service valving for the project site should be per the Town Standard Detail, copy attached. This detail requires potable water to be terminated if fire protection water is

**NEW YORK OFFICE**

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terminated.

12. An 8 inch Class 52 ductile liner pipe is depicted entering the site. The size of the potable and fire flow connections should be identified on the detail.

13. ARB approval is required.

**SWPPP Technical Review Comments:**

1. The applicant's representative are requested to coordinate the Cultech Chamber outlet structure with the inverts and discharges within the Stormwater Management Report. Primary invert for the Cultech Chamber is identified at 401.83, the plans identify it at 400.
2. A 3 inch vertical invert at elevation 400 is depicted on the plans, however not modeled in the control structure. It is unclear from a review of the plans where the influent to the Cultech system is.
3. Similar comments for the retention pond outlet structure detail identifies the invert for the 15 inch discharge pipe at 399.0, while the model identifies it at 399.83. The first 3 inch vertical orifice is identified at elevation 399.0 while it is not included in the model.
4. Pipe sizes should be called out on the plans or included in the catch basin elevation schedule.
5. The applicant's representative is requested to evaluate the rims for catch basins 5 and 6. Finish floor elevation of 412.5 is depicted while the catch basin elevations are 413.

Respectfully submitted,

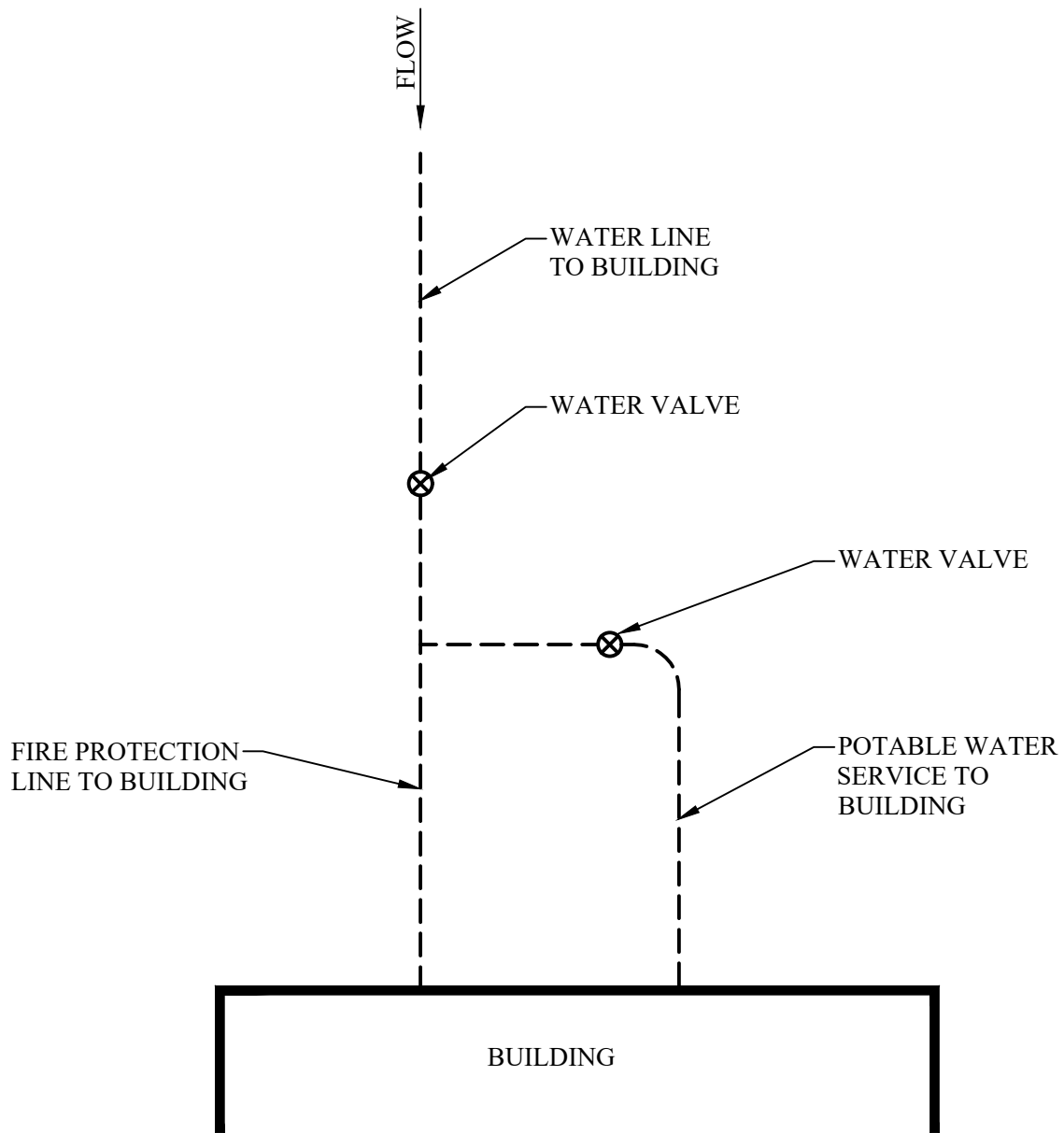
**MHE Engineering, D.P.C.**



Patrick J. Hines

Principal

PJH/kbw



NOTE:  
 VALVING MUST BE ARRANGED SO THAT  
 POTABLE WATER IS TERMINATED IF  
 FIRE PROTECTION LINE IS TURNED OFF.

**TOWN OF NEWBURGH FIRE PROTECTION**  
**FLOW TO BLDG. CONNECTION DETAIL**

X  
 XXX

SCALE: N.T.S.



Principals:

Mark D. Fellenzer, P.E., LEED AP  
John D. Fellenzer, P.E., MBA, LEED Green Associate

Founder:

Archie D. Fellenzer, Jr., P.E.  
(1924 - 2014)

April 21, 2023

Town of Newburgh Planning Department  
21 Hudson Valley Professional Plaza  
Newburgh, NY 12550

Attention: Mr. John Ewasutyn, Planning Board Chairman

Subject: Hillside Land Development #2022-27  
Jeanne Drive, Newburgh, NY  
Fellenzer Engineering Project 19-049

Dear Mr. Chairman,

Please find attached proposed site plans in regards to the above referenced project. We have received the MHE technical review comments dated 01/27/23 and offer the following responses in italics below:

1. This office previously requested the wetland delineation information. The wetland delineation appears to be from 13 April 2005. An updated Wetland Evaluation should be provided.

*FE Response: An updated delineation has been performed and is now shown on the site plan. See drawing C-001.*

2. Proposed Grading Plan has been significantly revised in the wetland areas. A Stormwater Pollution Prevention Plan in compliance with Town of Newburgh and NYSDEC requirements must be submitted.

*FE Response: A SWPPP has been included with this submission.*

3. Soil testing results for subsurface sanitary sewer disposal system should be placed on the plans. Newburgh does not require percolation and deep testing be witnessed. Septic system design should be provided.

*FE Response: Soil testing and sanitary design is now shown.*

4. The top and bottom of wall elevations for the proposed retaining wall should be depicted on the plans.

**HILLSIDE LAND DEVELOPMENT – LOT #66 JEANNE DRIVE  
FE PROJECT# 19-049**

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*FE Response: Retaining wall elevations are now shown.*

5. The water details identify concrete thrust locks. Town of Newburgh requires mechanical joint restraint and does not permit concrete thrust locks. Typical details should be revised consistent with Town of Newburgh requirements.

*FE Response: Thrust blocks have been removed from the details. A mechanical restraint joint detail is now provided. See detail 2/C-101.*

6. A Restraint Joint Pipe Chart should be added to the plans. See Town of Newburgh notes on Sheet C-002 #3.

*FE Response: A mechanical restraint joint detail is now provided. See detail 2/C-101.*

7. The fire protection line must be valved such that termination of the fire protection line terminates potable water to the structure. Attached schematic detail is provided.

*FE Response: This will be revised on the plans.*

8. The Bulk Table has been revised to identify a 28-foot-high building.

*FE Response: No comment.*

9. The Tree Preservation Ordinance must be addressed on future plan submissions.

*FE Response: A tree inventory has been conducted. See drawings C-001 and C-701.*

10. Lead Agency circulation was sent on 7 December 2022. Response from NYS Office of Parks, Recreation & Historic Preservation has been received identifying No Impact. Planning Board can declare itself Lead Agency for review of the project.

*FE Response: Lead Agency was declared by the board at our previous meeting.*

We have received the Creighton Manning technical review comments dated 01/26/23 and offer the following responses in italics below:

1. Annotate the width of the driveway and demonstrate the truck turning track. Given the relatively low volumes, we feel it's acceptable to allow/assume a truck would cross into the westbound lane to turn into the site, but the driveway should ensure that the truck doesn't need to leave the roadway to make the turn. The radius of the driveway entrance will need to accommodate turns in and out without using the shoulder or damaging the proposed curb.

*FE Response: The applicant typically uses 14 ft. to 16 ft. long box trucks for their operation and see no more than one to two 53 ft. tractor trailers per day. The tractor trailers only access the property temporarily for deliveries and do not stay overnight. Turning paths from Jeanne Drive for a 53 ft. trailer are shown.*

**HILLSIDE LAND DEVELOPMENT – LOT #66 JEANNE DRIVE  
FE PROJECT# 19-049**

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2. There are three trailer storage spaces proposed in the rear of the building. Are there any loading docks proposed? Where are those? Demonstrate truck circulation entering those spaces when there are trailers parked.

*FE Response: There are five (5) loading docks currently proposed. Two of the bays are intended to be at grade and the other three are 4' above grade. The storage spaces shown have been shortened to 24 ft. to accommodate the applicants use of 14 to 16 ft. long box trucks. No tractor trailers will be parked in those spaces.*

3. Has a tenant been identified? What are the operating hours?

*FE Response: A tenant is not yet confirmed however the applicant is currently considering using the property for their own operation. They typically have hours of Monday thru Friday, 8AM to 5PM.*

4. Expect traffic delays exiting Jeanne Drive during the peak commuter periods. Be aware of proposed traffic improvements to Route 300/Gardnertown Road and that projects in the area have been tasked with funding those improvements.

*FE Response: No comment.*

5. The Hot Mix Asphalt (HMA) pavement item numbers (402.097302 and 402.197902) have been disapproved by NYSDOT in favor for warm mix asphalt (WMA) items (404.097301 and 404.197901) to reduce environmental impacts in its production.

*FE Response: The pavement item numbers have been revised. See detail 2/C-901.*

We have received the KALA technical review comments dated 01/26/23 and offer the following responses in italics below:

1. Section 172-5 of the new Tree Preservation and Protection Local Law requires a tree survey for the entire site showing location, diameter, and species of all Significant trees on the site, and an identification of all Specimen Trees and Protected Trees. It also requires identification of which Significant Trees and Specimen Trees are to be protected, preserved, or undisturbed, to be removed or disturbed, and exempt from the calculation. Trees which are dead, diseased, or have been damaged must also be identified.

*FE Response: A tree inventory has been conducted and added to the plans. See sheet C-001 and C-701.*

2. Trees that are inventoried should be tagged with metal tags and numbered according to the inventory. Numbered trees and corresponding inventory must be shown on the site plan. Use aluminum nails when tagging.

*FE Response: A tree inventory has been conducted and added to the plans. See sheet C-001 and C-701.*

3. From the aerial image it appears that trees can be preserved in areas where grading is not proposed. A disturbance limit line should be shown to preserve as many trees as possible.

**HILLSIDE LAND DEVELOPMENT – LOT #66 JEANNE DRIVE  
FE PROJECT# 19-049**

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Preservation of each tree that will be preserved should be noted on the plan. Removals should also be noted. Do not show trees to be preserved if disturbance will be closer than the ratio of 1' for every 1" DBH of said tree. Showing the symbol of the trees to remain will help determine where more trees can be saved and where additional screening is needed.

*FE Response: A disturbance limit line has been added to the plans. See sheet C-701.*

4. A line of trees to remain is shown along the west property line. Given the proposed grading, most trees beyond the 406 contour will not be able to be saved. Too much fill placed over tree roots will kill the tree. The line of trees to remain needs to be adjusted.

*FE Response: The tree line has been adjusted. Proposed trees along a portion of the west property line are now shown for additional screening. See sheet C-701.*

5. Article V, Section 185-21 gives the planning board authority to require reasonable screening of parking and service areas from other properties and in the rear of the property where a residential project is proposed. We recommend dense screen planting between the site and all abutting properties. Screen planting between commercial uses should be deciduous trees because many deciduous trees tolerate compacted soils better than evergreens. They also do not get browsed by deer.

*FE Response: Deciduous trees are now proposed along each property line for screening. See sheet C-701.*

6. According to Town of Newburgh design guidelines, street trees must be shown planted 40' on center along the road. There is no reason street trees cannot be shown for the length of the northern property line along Jeanne Drive. Please show native street tree species such as Red Maples or Pin Oaks 40' on center for the length of the property line along the road.

*FE Response: Red Maples are currently shown along the front property line spaced at 40' on center. See sheet C-701.*

7. Dense Yew is highly susceptible to deer browsing and should not be proposed on this site if deer are an issue. Furthermore, Dense Yew is a short-growing shrub and does nothing to soften the tall façade of a warehouse building. Instead propose a taller growing shrub such as Japanese Andromeda or slightly less deer resistant Leatherleaf Viburnum.

*FE Response: Leather Viburnum and Japanese Andromeda have been added to the plans. See sheet C-701.*

8. Shrubs and trees should be shown along the façade of the warehouse building in a manner that complements the architecture of the building. If the façade is very plain, tall shrubs and trees should be proposed to soften the visual impact of the tall industrial warehouse building. Tall shrubs that can grow on the north side of the building are Leatherleaf Viburnum, though they are only slightly deer resistant, and Japanese Andromeda. A tree would be American Holly which will grow tall and is deer resistant.

*FE Response: A combination of American Hollies and Leatherleaf Viburnums have been placed along the north façade of the building. See sheet C-701.*

**HILLSIDE LAND DEVELOPMENT – LOT #66 JEANNE DRIVE  
FE PROJECT# 19-049**

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9. Show water-loving trees planted along the south bank of the pocket pond such as Swamp White Oaks. The Oaks will provide further screening of the site from the proposed residential project to the south and keep their leaves for longer in the winter.

*FE Response: A row of swamp white oaks have been added along the south bank of the pond. See sheet C-701.*

10. Specify Ernst Rain Garden Seed mix on the slopes of the pocket pond.

*FE Response: Ernst rain garden seed mix has been specified. See note #1 under the General Landscaping Notes on sheet C-701.*

11. It appears a large portion of the site will be maintained as open lawn. At some point this property was likely wooded like the surrounding vacant properties. Consider using a low-mow or meadow seed mix as a lawn alternative such as PT 769 R&R Eco-Turf Mix with Microclover, PT702 Let it Be Fescue/clover mix or Ernst Seeds Native Habitat for Strip Mines Mix. An alternative lawn, especially a meadow seed mix, will foster more biodiversity and provide more ecological benefits than a regular fescue lawn. They also require less maintenance than a traditional lawn if maintained property.

*FE Response: Seed mix has been updated. Refer to the lawn restoration schedule on C-701.*

12. Norway Spruces are shown with Maples along the east property line. In our experience evergreen trees struggle on commercial sites in this area. Instead, consider a large-growing deciduous tree species, ideally a species found in the nearby wooded areas, if urban tolerant in areas where soil will likely be compacted. Plant closely together, about 15' on center or so along the property line to form a forested boundary. Planted this close, screening should occur within 10 year of planting and deciduous trees will provide more ecological benefits than the evergreens.

*FE Response: The red maples proposed along the front of the property are now also shown extending down the east property line, 15' on center. See sheet C-701.*

13. The planting detail illustrates 4" of mulch around the base of plantings. Please rework the detail to show no mulch for 6" from bases of trees and shrubs. Too much mulch applied over the root ball or resting against the trunk can cause problems for trees and shrubs. Roots often grow up and into the mulch, strangling the trunk, which can kill trees. Mulch can also hide decay and dead spots on the lower trunk and major roots. Decay in this portion of the tree can cause the tree to become unstable.

*FE Response: See note under detail 1/C-701.*

14. The following notes must be added to the plans:

1. WARRANTEE: Contractor shall warrantee all plant material to remain alive and be in a healthy, vigorous condition for a period of two years after final acceptance of planting work. Each growing period, Contractor shall replace all plants that are more than 25% dead or, as determined by the landscape architect's inspection memo, are in an unhealthy or unsightly



**HILLSIDE LAND DEVELOPMENT – LOT #66 JEANNE DRIVE  
FE PROJECT# 19-049**

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condition. Contractor shall bear the cost of the complete replacement(s). Replacements shall be of the same size and species as specified on the planting list. Plants will be inspected upon completion of installation once a request for inspection has been submitted by the contractor and inspected again the following four growing seasons.

*FE Response: See General Landscaping Note #2 on C-701.*

2. A landscape bond is required to be submitted for approval. Please include unit prices for each plant and groundcover installation. The unit price should include the cost of the plant, a two-year warranty, and labor to install the plant. A bond will be held for two years to help ensure plants live. A partial release of the landscape bond can be requested after one year, and will be recommended for approval, if more than ninety percent of plants, including ground covers, are in good health at the time of inspection. A full release of the bond after two years will be recommended for approval if ninety percent of plants are in good health at the time of inspection. If more than 10 percent of plants are not in good health, recommendation for release of the bond cannot be made. Plants will need to be replaced and must live for another year before the bond can be recommended for release. It is important for the contractor to install soil as defined on the drawings and water plants appropriately so that plants do not need to be replaced several times over the course of the bond. Poor soils cause plants to die, then replacement plants to die, etc.

*FE Response: See General Landscaping Note #3 on C-701.*

We look forward to discussing the application with you at the May 4<sup>th</sup>, Planning Board meeting.

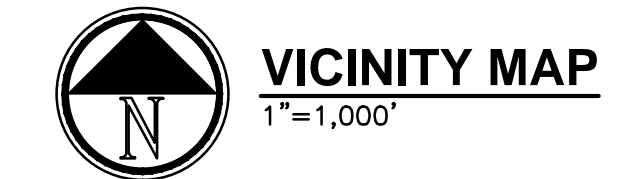
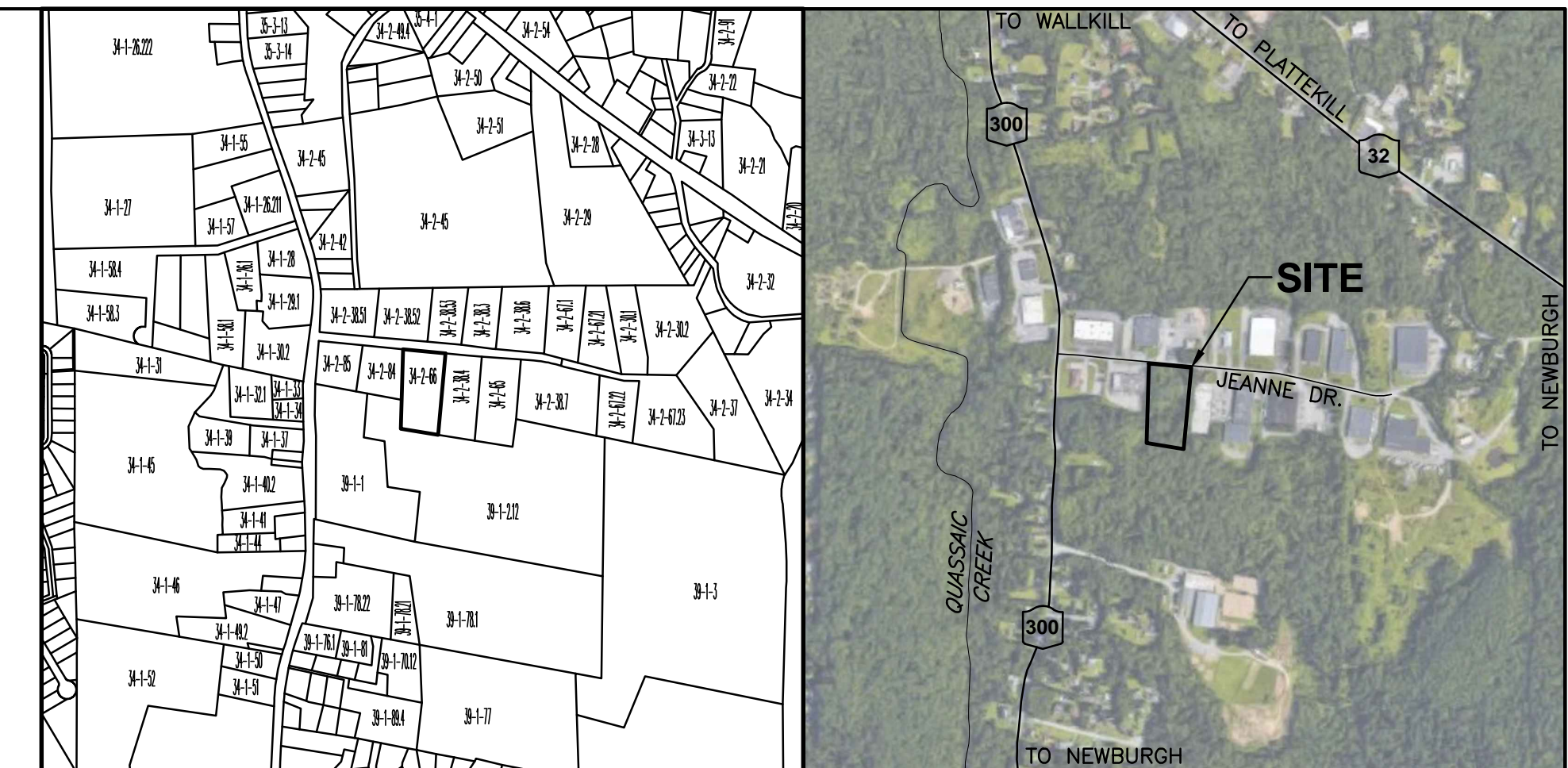
Sincerely,



Ryan D. Fellenzer, PE  
Project Engineer

attachment

# SITE PLAN FOR HILLSIDE LAND DEVELOPMENT JEANNE DRIVE NEWBURGH, NY



| BULK REQUIREMENTS<br>TOWN OF NEWBURGH<br>1B DISTRICT   |                  |          |
|--|------------------|----------|
| BULK TABLE REQUIREMENTS  |                  |          |
| BULK ITEM  | MINIMUM REQUIRED |          |
|  | REQUIRED         | PROVIDED |
| LOT AREA (AC)  | 40,000           | 133,889  |
| LOT WIDTH (FT)   | 150              | 257      |
| LOT DEPTH (FT)   | 150              | 520      |
| FRONT SETBACK (FT)   | 50               | 78       |
| REAR SETBACK (FT)  | 60               | 270      |
| ONE SIDE (FT)  | 30               | 30       |
| BOTH SIDES (FT)  | 80               | 94       |
| MAXIMUM PERMITTED  |                  |          |
| BULK ITEM  | PERMITTED        | PROVIDED |
| BUILDING COVERAGE (%)  | 40               | 19.4     |
| BUILDING HEIGHT (FT)   | 40               | 30       |
| LOT SURFACE COVERAGE (%)   | 60               | 41.6     |
| <b>PROPERTY ADDRESS</b>  |                  |          |
| JEANNE DRIVE<br>NEWBURGH, NY 12550   |                  |          |
| <b>TAX MAP</b>   |                  |          |
| SECTION 34, BLOCK 2, LOT 66<br>TOWN OF NEWBURGH, NY  |                  |          |
| <b>OWNER &amp; DEVELOPER</b>   |                  |          |
| ATTN: PAUL HOFFNER<br>142 ROUTE 17K<br>NEWBURGH, NY 12550  |                  |          |
| <b>EXISTING USE</b>  |                  |          |
| VACANT   |                  |          |
| <b>PROPOSED USE</b>  |                  |          |
| WAREHOUSE  |                  |          |
| <b>REFERENCE</b>   |                  |          |
| "MAP OF SURVEY FOR THE LANDS OF<br>HILLSIDE LAND DEVELOPMENT" BY<br>OSWALD & GILLESPIE CONSULTING<br>ENGINEERS AND SURVEYORS<br>DATED: JULY 18, 2003 |                  |          |

## DRAWINGS LIST:

| PAGE | SHEET | SHEET TITLE         |
|------|-------|---------------------|
| 1.   | TS-1  | TITLE SHEET         |
| 2.   | C-001 | GENERAL NOTES SHEET |
| 3.   | C-002 | EXISTING CONDITIONS |
| 4.   | C-101 | SITE PLAN           |
| 5.   | C-401 | STORMWATER PLAN     |
| 6.   | C-401 | STORMWATER PLAN     |
| 7.   | C-701 | LANDSCAPING PLAN    |
| 8.   | C-901 | DETAILS             |
| 9.   | C-902 | DETAILS             |
| 10.  | C-903 | DETAILS             |

### NOTES:

- INDIVIDUAL SEWAGE DISPOSAL SYSTEMS SHALL NO LONGER BE CONDUCTED OR USED WHEN PUBLIC FACILITIES BECOME AVAILABLE. CONNECTION TO THE PUBLIC SEWER SYSTEM IS REQUIRED WITHIN 1 YEAR OF AVAILABILITY.
- ORANGE COUNTY DEPARTMENT OF HEALTH PLAN APPROVAL IS LIMITED TO 5 YEARS. TIME EXTENSIONS FOR PLAN APPROVAL MAY BE GRANTED BY THE ORANGE COUNTY DEPARTMENT OF HEALTH BASED UPON REGULATIONS IN EFFECT AT TIME. A NEW PLAN SUBMISSION MAY BE REQUIRED TO OBTAIN A TIME EXTENSION.
- U DIG NY MUST BE CONTACTED PRIOR TO ANY EXCAVATION OR DEMOLITION (DIAL 811 OR [www.UdigNY.org](http://www.UdigNY.org)).

| 2   | 4/21/23          | REVISED PER PB COMMENTS  |                          |                     |                           |
|---|------------------|--|--------------------------|---------------------|---------------------------|
| 1   | 1/18/23          | REVISED PER PB COMMENTS  |                          |                     |                           |
| REV #   | DATE             | REMARKS:   | ISSUE #                  | DATE                | ISSUED FOR:               |
| <p>REFERENCE SCALE</p>  |                  |  |                          |                     |                           |
| <p>UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A LICENSED PROFESSIONAL ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2 OF THE N.Y. STATE EDUCATION LAW.</p>  |                  |  |                          |                     |                           |
| <p><b>FELLENZER</b><br/>ENGINEERING LLP</p>   |                  |  |                          |                     |                           |
| <p>22 Mulberry St., Suite 2A, Middletown, NY 10940<br/>1 845-343-1481 fx 845-343-4986</p> <p>181 Church St., Suite 100, Poughkeepsie, NY 12601<br/>1 845-454-9704 fx 855-320-8735</p> |                  |  |                          |                     |                           |
| <p>STAMP: </p>  |                  | <p>PROJECT TITLE:<br/><b>JEANNE DRIVE<br/>SITE PLAN</b><br/>SECTION 34, BLOCK 2, LOT 66.</p> |                          |                     |                           |
| <p>DRAWING TITLE:<br/><b>TITLE SHEET</b></p>  |                  |  |                          |                     |                           |
| DESIGNED BY:<br>JB  | DRAWN BY:<br>VMB | APPROVED BY P.E.:<br>RDF   | APPROVED BY P.E.:<br>MDF | DATE:<br>11/01/2022 | DRAWING #:<br><b>TS-1</b> |
| SCALE:<br>AS SHOWN  |                  |  | FE PROJECT #:<br>19-049  |                     |                           |
|   |                  |  |                          |                     | PAGE 1 OF 10              |



PROGRESS PRINT  
4/21/23  
NOT FOR  
CONSTRUCTION

**ORANGE COUNTY DEPARTMENT OF HEALTH  
SEPTIC SYSTEM NOTES:**

- THERE WILL BE NO REGRADING OR COMPACTING IN THE AREA OF THE PROPOSED TILE FIELD. HEAVY EQUIPMENT SHALL BE KEPT OFF THE AREA OF THE TILE FIELD EXCEPT FOR THE ACTUAL CONSTRUCTION OF THE FIELD. THERE SHALL BE NO UNNECESSARY MOVEMENT OF CONSTRUCTION EQUIPMENT IN THE TILE FIELD AREA BEFORE, DURING OR AFTER CONSTRUCTION.
- SANITARY FACILITIES ARE NOT TO BE RELOCATED OR REDESIGNED WITHOUT REVIEW BY THE ORANGE COUNTY DEPARTMENT OF HEALTH OR TOWN OF NEWBURGH.
- CELLAR, ROOF AND FOOTING DRAINS SHALL NOT BE DISCHARGED INTO THE SEPTIC SYSTEM OR IN THE VICINITY OF THE TILE FIELD.
- CONSTRUCTION OF THE SANITARY FACILITIES SHALL BE PERFORMED UNDER THE GUIDANCE OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN NEW YORK STATE. CERTIFICATION THAT THE INSTALLATION WAS MADE IN ACCORDANCE WITH APPROVED PLANS WILL BE MADE TO THE ORANGE COUNTY OFFICE OF THE NEW YORK STATE DEPARTMENT OF HEALTH AND THE LOCAL CODE ENFORCEMENT OFFICER. THE CERTIFICATION SHALL INCLUDE THAT THE SEPTIC TANK JOINTS HAVE BEEN SEALED AND TESTED FOR WATER TIGHTNESS AND THAT THE TANK WAS INSTALLED IN ACCORDANCE WITH APPENDIX 75-A.
- NO SWIMMING POOLS, DRIVEWAYS OR OTHER STRUCTURES THAT MAY COMPACT THE GROUND SHALL BE PLACED OVER ANY PORTION OF THE TILE FIELD.
- THERE MUST BE AN UNINTERRUPTED POSITIVE SLOPE FROM THE SEPTIC TANK TO THE BUILDING, ALLOWING SEPTIC GASES TO DISCHARGE THROUGH THE STACK VENT.
- THE SEPTIC TANK SHALL BE A 1,000 GALLON CONCRETE TANK AS SHOWN ON PLANS, BY WOODARDS CONCRETE PRODUCTS, BULLVILLE, NEW YORK OR AN APPROVED EQUAL. A CERTIFICATION SHALL BE INCLUDED THAT THE SEPTIC TANK JOINTS HAVE BEEN SEALED AND TESTED FOR WATER TIGHTNESS AND THAT THE TANK WAS INSTALLED IN ACCORDANCE WITH APPENDIX 75-A.
- ANY CHANGE IN DIRECTION OF SOLID TILE SEWAGE PIPE WILL REQUIRE A CLEANOUT.
- THE SEWAGE DISPOSAL SYSTEM HAS NOT BEEN DESIGNED TO ACCOMMODATE GARBAGE GRINDERS, JACUZZI TYPE TUB OVER 100 GALLONS OR WATER SOFTENERS AS SUCH, THESE ITEMS SHOULD NOT BE INSTALLED UNLESS THE SEWAGE DISPOSAL SYSTEM IS REDESIGNED TO ACCOUNT FOR THEM AND APPROVED BY THE ORANGE COUNTY DEPARTMENT OF HEALTH.
- THE ORANGE COUNTY DEPARTMENT OF HEALTH AND TOWN OF NEWBURGH SANITARY REVIEW ENGINEER MUST BE CONTACTED 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION TO SCHEDULE A REVIEW OF THE INSTALLATION.
- CONTRACTOR TO VERIFY EXISTING CONDITIONS AND ELEVATIONS BEFORE SUBMITTING BID.
- CONTRACTOR SHALL VERIFY INVERTS OF ALL NEW UNITS INSTALLED BY THIS CONTRACT. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER SHOWING INVERT ELEVATIONS PRIOR TO STARTING CONSTRUCTION.
- ALL PLUMBING SHALL CONFORM TO THE NEW YORK STATE PLUMBING CODE, LATEST EDITION.
- ANY MODIFICATIONS OR ADDITIONS TO THIS DESIGN MUST RECEIVE APPROVAL BY THE ORANGE COUNTY DEPARTMENT OF HEALTH AND TOWN OF NEWBURGH PRIOR TO EXECUTION BY CONTRACTOR.
- ALL JOINTS BETWEEN PIPING AND SEPTIC SYSTEM COMPONENTS (ie. SEPTIC TANK, & DISTRIBUTION BOXES) SHALL BE SEALED WATERTIGHT WITH NONSHRINK GROUT.
- TRENCH SHALL NOT BE INSTALLED IN WET SOIL. THE SIDES AND BOTTOM OF TRENCHES MUST BE RAKED. THE ENDS OF THE LATERALS MUST BE CAPPED.
- THE OWNER/APPLICANT SHALL BE PROVIDED WITH A COPY OF THE APPROVED PLANS AND ACCURATE AS-BUILT DRAWING OF ANY EXISTING SANITARY FACILITIES.
- BACKFILL INTO ANY TRENCH SHALL NOT HAVE ANY DIMENSION EXCEEDING 4". FILL TO BE ACCEPTABLE BY THE ENGINEER.
- SEWAGE DISPOSAL SYSTEM SHALL ONLY RECEIVE SANITARY WASTES.
- PRIOR TO COMMENCEMENT OF OPERATION, A LETTER MUST BE SUBMITTED TO THE ORANGE COUNTY DEPARTMENT OF HEALTH AND TOWN OF NEWBURGH BY A N.Y.S. LICENSED PROFESSIONAL ENGINEER CERTIFYING THE ARRANGEMENTS OF THIS SEWAGE DISPOSAL SYSTEM IS INSTALLED IN ACCORDANCE WITH THESE PLANS.
- UTILIZATION OF THE EXPANSION AREA REQUIRES A NEW DESIGN BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER AND THE PERMISSION OF THE ORANGE COUNTY DEPARTMENT OF HEALTH AND TOWN OF NEWBURGH.
- SEPTIC TANKS SHALL BE INSPECTED PERIODICALLY AND PUMPED EVERY 2-3 YEARS. DISTRIBUTION BOXES SHALL BE INSPECTED ANNUALLY TO ASSURE THAT THEY ARE LEVEL AND OPERATING PROPERLY.
- MINIMUM DISTANCE FROM ANY WELL TO ANY SEPTIC SYSTEM AT A HIGHER ELEVATION SHALL BE 300'. NO KNOWN WELLS EXIST WITHIN 200' OF S.D.S.
- THE MINIMUM DISTANCE FROM ANY SEPTIC SYSTEM TO ANY PRIVATE WELL IS 100' WHEN THE WELL IS AT A HIGHER ELEVATION.
- MINIMUM DISTANCE FROM SEPTIC SYSTEM TO ANY PUBLIC WELL SHALL BE 200 FT.
- THE FIRST 10" OF ALL OUTLET PIPES FROM THE DISTRIBUTION BOX MUST HAVE THE SAME INVERT AND THE SAME EXISTING SLOPE. SPEED LEVELERS SHALL BE USED IN EACH LATERAL TO ENSURE ALL INVERTS ARE THE SAME WITHIN THE DISTRIBUTION BOX.
- THE TOPS OF THE SEPTIC TANK AND THE DISTRIBUTION BOX SHALL BE NO MORE THAN 12" BELOW THE FINISHED GRADE WHEN ALL WORK IS COMPLETE. ORIGINAL GRADE SHALL BE MODIFIED ACCORDINGLY TO PROVIDE 12" OF COVER AT ALL INVERT ELEVATIONS.
- ALL OUTLET PIPES FROM DISTRIBUTOR BOX MUST HAVE THE SAME INVERT AND THE SAME EXISTING SLOPE FOR AT LEAST THE FIRST 10 FEET.

**TOWN OF NEWBURGH NOTES:**

- CONSTRUCTION OF POTABLE WATER UTILITIES AND CONNECTION TO THE TOWN OF NEWBURGH WATER SYSTEM REQUIRES A PERMIT FROM THE TOWN OF NEWBURGH WATER DEPARTMENT. ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE NYSDOH AND THE TOWN OF NEWBURGH.
- ALL WATER SERVICE LINES FOUR (4) INCHES AND LARGER IN DIAMETER SHALL BE CEMENT LINED CLASS 52 DUCTILE IRON PIPE CONFORMING TO ANS\AWWA C151\A21.51 FOR DUCTILE IRON PIPE, LATEST REVISION. JOINTS SHALL BE EITHER PUSH-ON OR MECHANICAL JOINT AS REQUIRED.
- THRUST RESTRAINT OF THE PIPE SHALL BE THROUGH THE USE OF JOINT RESTRAINT. THRUST BLOCKS ARE NOT ACCEPTABLE. JOINT RESTRAINT SHALL BE THROUGH THE USE OF MECHANICAL JOINT PIPE WITH RETAINER GLANDS. ALL FITTINGS AND VALVES SHALL ALSO BE INSTALLED WITH RETAINER GLANDS FOR JOINT RESTRAINT. RETAINER GLANDS SHALL BE EBBA IRON MEGALUG SERIES 1100 OR APPROVED EQUAL. THE USE OF A MANUFACTURED RESTRAINED JOINT PIPE IS ACCEPTABLE WITH PRIOR APPROVAL OF THE WATER DEPARTMENT.
- ALL FITTINGS SHALL BE CAST IRON OR DUCTILE IRON, MECHANICAL JOINT, CLASS 250 AND CONFORM TO ANS\AWWA C110\A21.10 FOR DUCTILE AND GRAY IRON FITTINGS OR ANS\AWWA C153\A21.53 FOR DUCTILE IRON COMPACT FITTINGS, LATEST REVISION.
- ALL VALVES 4 TO 12 INCHES SHALL BE RESILIENT WEDGE GATE VALVES CONFORMING TO ANS\AWWA C509 SUCH AS MUELLER MODEL A-2360-23 OR APPROVED EQUAL. ALL GATE VALVES SHALL OPEN LEFT (COUNTERCLOCKWISE).
- TAPPING SLEEVE SHALL BE MECHANICAL JOINT SUCH AS MUELLER H-615 OR EQUAL. TAPPING VALVES 4 TO 12 INCHES SHALL BE RESILIENT WEDGE GATE VALVES CONFORMING TO ANS\AWWA C509 SUCH AS MUELLER MODEL T-2360-19 OR APPROVED EQUAL. ALL TAPPING SLEEVES AND VALVES SHALL BE TESTED TO 150 PSI MINIMUM; TESTING OF THE TAPPING SLEEVE AND VALVE MUST BE WITNESSED AND ACCEPTED BY THE TOWN OF NEWBURGH WATER DEPARTMENT PRIOR TO CUTTING INTO THE PIPE.
- ALL HYDRANTS SHALL BE CLOW-EDDY F-2640 CONFORMING TO AWWA STANDARD C-502, LATEST REVISION. ALL HYDRANTS SHALL INCLUDE A 5 1/4 INCH MAIN VALVE OPENING, TWO 2 1/2 INCH DIAMETER NPT HOSE NOZZLES, ONE 4 INCH NPT STEAMER NOZZLE, A 6 INCH DIAMETER INLET CONNECTION AND A 1 1/2 INCH PENTAGON OPERATING NUT. ALL HYDRANTS SHALL OPEN LEFT (COUNTER-CLOCKWISE). HYDRANTS ON MAINS TO BE DEDICATED TO THE TOWN SHALL BE EQUIPMENT YELLOW. HYDRANTS LOCATED ON PRIVATE PROPERTY SHALL BE RED.
- ALL WATER SERVICE LINES TWO (2) INCHES IN DIAMETER AND SMALLER SHALL BE TYPE K COPPER TUBING. CORPORATION STOPS SHALL BE MUELLER H-15020N FOR 3/4 AND 1 INCH, MUELLER H-15000N OR B-25000N FOR 1 1/2 AND 2 INCH SIZES. CURB VALVES SHALL BE MUELLER H-1502-2N FOR 3/4 AND 1 INCH AND MUELLER B-25204N FOR 1 1/2 AND 2 INCH SIZES. CURB BOXES SHALL BE MUELLER H-10314N FOR 3/4 AND 1 INCH AND MUELLER H-10310N FOR 1 1/2 AND 2 INCH SIZES.
- ALL PIPE INSTALLATION SHALL BE SUBJECT TO INSPECTION BY THE TOWN OF NEWBURGH WATER DEPARTMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL INSPECTIONS AS REQUIRED WITH THE TOWN OF NEWBURGH WATER DEPARTMENT.
- THE WATER MAIN SHALL BE TESTED, DISINFECTED AND FLUSHED IN ACCORDANCE WITH THE TOWN OF NEWBURGH REQUIREMENTS. ALL TESTING, DISINFECTION AND FLUSHING SHALL BE COORDINATED WITH THE TOWN OF NEWBURGH WATER DEPARTMENT. PRIOR TO PUTTING THE WATER MAIN IN SERVICE SATISFACTORY SANITARY RESULTS FROM A CERTIFIED LAB MUST BE SUBMITTED TO THE TOWN OF NEWBURGH WATER DEPARTMENT. THE TEST SAMPLES MUST BE COLLECTED BY A REPRESENTATIVE OF THE TESTING LABORATORY AND WITNESSED BY THE WATER DEPARTMENT.
- THE FINAL LAYOUT OF THE PROPOSED WATER AND/OR SEWER CONNECTION, INCLUDING ALL MATERIALS, SIZE AND LOCATION OF SERVICE AND ALL APPURTENANCES, IS SUBJECT TO THE REVIEW AND APPROVAL OF THE TOWN OF NEWBURGH WATER AND/OR SEWER DEPARTMENT. NO PERMITS SHALL BE ISSUED FOR A WATER AND/OR SEWER CONNECTION UNTIL A FINAL LAYOUT IS APPROVED BY THE RESPECTIVE DEPARTMENT.

**TOWN SEWER SYSTEM NOTES:**

- CONSTRUCTION OF SANITARY SEWER FACILITIES AND CONNECTION TO THE TOWN OF NEWBURGH SANITARY SEWER SYSTEM REQUIRES A PERMIT FROM THE TOWN OF NEWBURGH SEWER DEPARTMENT. ALL CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE NYSDEC AND THE TOWN OF NEWBURGH.
- ALL SEWER PIPE INSTALLATION SHALL BE SUBJECT TO INSPECTION BY THE TOWN OF NEWBURGH SEWER DEPARTMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL INSPECTIONS AS REQUIRED WITH THE TOWN OF NEWBURGH SEWER DEPARTMENT.
- ALL GRAVITY SANITARY SEWER SERVICE LINES SHALL BE 4 INCHES IN DIAMETER OR LARGER AND SHALL BE SDR-35 PVC PIPE CONFORMING TO ASTM D-3034-89. JOINTS SHALL BE PUSH-ON WITH ELASTOMERIC RING GASKET CONFORMING ASTM D-3212. FITTINGS SHALL BE AS MANUFACTURED BY THE PIPE SUPPLIER OR EQUAL AND SHALL HAVE A BELL AND SPIGOT CONFIGURATION COMPATIBLE WITH THE PIPE.
- THE SEWER MAIN SHALL BE TESTED IN ACCORDANCE WITH TOWN OF NEWBURGH REQUIREMENTS. ALL TESTING SHALL BE COORDINATED WITH THE TOWN OF NEWBURGH SEWER DEPARTMENT.
- THE FINAL LAYOUT OF THE PROPOSED WATER AND/OR SEWER CONNECTION, INCLUDING ALL MATERIALS, SIZE AND LOCATION OF SERVICE AND ALL APPURTENANCES, IS SUBJECT TO THE REVIEW AND APPROVAL OF THE TOWN OF NEWBURGH WATER AND/OR SEWER DEPARTMENT. NO PERMITS SHALL BE ISSUED FOR A WATER AND/OR SEWER CONNECTION UNTIL A FINAL LAYOUT IS APPROVED BY THE RESPECTIVE DEPARTMENT.

**SITE - CIVIL GENERAL NOTES:**

- CONTRACTOR, AT THEIR OWN EXPENSE, SHALL ABIDE BY THE LATEST EDITIONS OF ALL OSHA REGULATIONS AND REQUIREMENTS.
- THERE SHALL BE NO CLAIMS AGAINST ORANGE COUNTY FOR WORK STOPPAGES DUE TO ACTS OF GOD, WEATHER CONDITIONS, STOP WORK ORDERS (VERBAL AND/OR WRITTEN), UNDERESTIMATION OF WORK, ESTIMATED QUANTITIES, MATERIALS, SUPPLIES, TOOLS, CORRECTION OF SAFETY PROBLEMS, OR ANY OTHER REASON.
- ALL QUANTITIES SHOWN ON THE DRAWING ARE ESTIMATED QUANTITIES ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY AND ASCERTAIN ALL EXISTING CONDITIONS, DIMENSIONS AND QUANTITIES.
- ALL WORK SHALL BE PERFORMED BY THOSE WHO ARE SKILLED IN THEIR TRADE TO PRODUCE A FIRST CLASS JOB. THE CONTRACTOR IS ADVISED THAT WORK DEEMED UNSUITABLE, UNACCEPTABLE, SECOND CLASS IN NATURE BY BIG SHINE WORLDWIDE SHALL BE DEEMED NON-ACCEPTABLE AND THE CONTRACTOR SHALL REMOVE, REPLACE, RE-DO, TO THE SATISFACTION OF BIG SHINE WORLDWIDE, THE UNACCEPTABLE WORK AT NO ADDITIONAL COST TO THE OWNER. THERE SHALL BE NO ADDITIONAL CLAIMS AGAINST BIG SHINE WORLDWIDE FOR THE ABOVE.
- ROAD WAYS, BUILDING EMERGENCY ACCESS AREAS, AND BUILDING ENTRY AND EXITS AREAS ARE TO BE KEPT CLEAR AT ALL TIMES.
- CONTRACTOR SHALL USE DIG SAFELY NY. "CALL 811".
- CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY AND ASCERTAIN IN THE FIELD, ALL EXISTING UTILITIES, EXISTING CONDITIONS, FIELD MEASUREMENTS, DIMENSIONS, AND QUANTITIES RELATED TO THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY AND ASCERTAIN THE LOCATION, DEPTH, DIRECTION, AND SIZE OF ANY AND ALL UTILITIES EXISTING IN THE GENERAL VICINITY OF THE WORK AREA.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR ANY UTILITY DISRUPTED, BROKEN OR OTHERWISE RENDERED NON-FUNCTIONAL DUE TO THE WORK PERFORMED AT NO ADDITIONAL COST TO BIG SHINE WORLDWIDE DURING THIS COURSE OF WORK.
- THE CONTRACTOR SHALL IDENTIFY ANY NON-FUNCTIONING UTILITY/SYSTEM, PRIOR TO THE START OF WORK TO ORANGE COUNTY. IDENTIFICATION OF SUCH AFTER THE START OF WORK SHALL BE DEEMED AS DISTURBED/DAMAGED BY THE CONTRACTOR AND SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY SUPPORT ANY UTILITY ENCOUNTERED IN THE COURSE OF THIS WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL ADD BARRIERS, SECURE ALL EXTERIOR WORK AND STAGING AREAS WITH ACCEPTABLE FENCING.
- THE CONTRACTOR SHALL NOT LEAVE THE WORK AREA UNATTENDED FOR ANY REASON, UNLESS SAFETY PARTITIONS, SAFETY FENCING AND COVERING FOR ALL OPEN TRENCHES ARE INSTALLED AND SECURED.
- THE CONTRACTOR SHALL LEAVE THE WORK SITE CLEAN AND SECURED AT THE END OF EACH WORKING DAY. THE WORK SITE SHALL NOT BE LEFT UNATTENDED AT ANY TIME BY THE CONTRACTOR UNLESS THE WORK AREA IS PROPERLY SECURED BY THE CONTRACTOR.
- THE CONTRACTOR IS ADVISED THAT THEY ARE SOLELY RESPONSIBLE FOR THE SAFETY OF THE WORK SITE AND SHALL TAKE ALL ACTIONS TO ELIMINATE ANY SAFETY HAZARDS THAT SHALL EXIST AND POSE A THREAT OF HARM TO STUDENTS, EMPLOYEES OF BIG SHINE WORLDWIDE, EMPLOYEES OF THE CONTRACTOR OR OTHER(S). IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO TAKE IMMEDIATE ACTION TO ALLEVIATE ANY SAFETY HAZARD THAT MAY EXIST WITHOUT DIRECTION FROM BIG SHINE WORLDWIDE.
- CONTRACTOR SHALL SAW CUT WITH PROPER BLADE ANY ROADS, CURBS AND SIDEWALKS ENCOUNTERED IN THE COURSE OF THIS WORK.
- ALL HOLES SHALL BE CORE-DRILLED WITH DIAMOND CORE BITS.
- CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE ANY AND ALL DEBRIS FROM THE SITE DAILY AND DISPOSE OF SAME OFF SITE IN ACCORDANCE WITH ALL LOCAL AND STATE REGULATIONS.
- THE CONTRACTOR SHALL MAINTAIN THE WORK SITE IN A NEAT AND CLEAN CONDITION. THE WORK SITE SHALL BE CLEANED DAILY OF CONSTRUCTION DEBRIS.
- SUB-GRADE FILL TO BE COMPACTED TO 95% STANDARD PROCTOR RELATIVE DENSITY AND PAVEMENT AREAS SHALL HAVE SUB-GRADE COMPACTED TO 95% MODIFIED RELATIVE DENSITY PER AASHTO REQUIREMENTS.
- ALL ESTABLISHED EGRESS ROUTES SHALL REMAIN CLEAR AT ALL TIMES.
- ALL WORK SHALL BE CONDUCTED WITHIN THE APPROVED FENCING PLAN AREA.
- ALL CONSTRUCTION VEHICLES WILL HAVE A FUNCTIONING BACKUP ALARM.
- CONTRACTOR TO VERIFY LOCATION AND LSE FOR ALL BUILDINGS PRIOR TO START OF CONSTRUCTION. LSE NOT LISTED ARE ASSUMED TO BE APPROXIMATELY 4' BELOW GRADE.
- CONTRACTOR SHALL OBTAIN ALL NECESSARY LOCAL AND STATE PERMITS PRIOR TO COMMENCEMENT OF WORK.

**E&S NOTES:**

- THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
- CONSTRUCTION VEHICLES AND EQUIPMENT ENTERING AND EXITING THE SITE MUST ENTER AND EXIT AT THE STABILIZED CONSTRUCTION ENTRANCE LOCATION(S) ONLY. MEASURES MUST BE TAKEN TO PREVENT SOIL AND SEDIMENT FROM A VEHICLE'S TIRES FROM BEING DEPOSITED ONTO THE PUBLIC ROADS.
- UNTIL THE SITE ACHIEVES FINAL STABILIZATION, THE OPERATOR SHALL ASSURE THAT THE BEST MANAGEMENT PRACTICES ARE IMPLEMENTED, OPERATED, AND MAINTAINED PROPERLY AND COMPLETELY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL BEST MANAGEMENT PRACTICE FACILITIES. THE OPERATOR WILL MAINTAIN AND MAKE AVAILABLE TO THE TOWN OF NEWBURGH COMPLETE, WRITTEN INSPECTION LOGS OF ALL THOSE INSPECTIONS. ALL MAINTENANCE WORK, INCLUDING CLEANING, REPAIR, REPLACEMENT, REGRADING, AND RESTABILIZATION SHALL BE PERFORMED IMMEDIATELY.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
- BEFORE INITIATING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS THAT MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE TOWN OF NEWBURGH.
- THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE TOWN OF NEWBURGH, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
- THE E&S CONTROL PLAN MAPPING MUST DISPLAY A NY ONE CALL SYSTEM INCORPORATED SYMBOL INCLUDING THE SITE IDENTIFICATION NUMBER. (THIS IS A NUMBERED SYMBOL NOT A NOTE.)
- EROSION AND SEDIMENT BMPs (BEST MANAGEMENT PRACTICES) MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPs.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENEWING, MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
- THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.

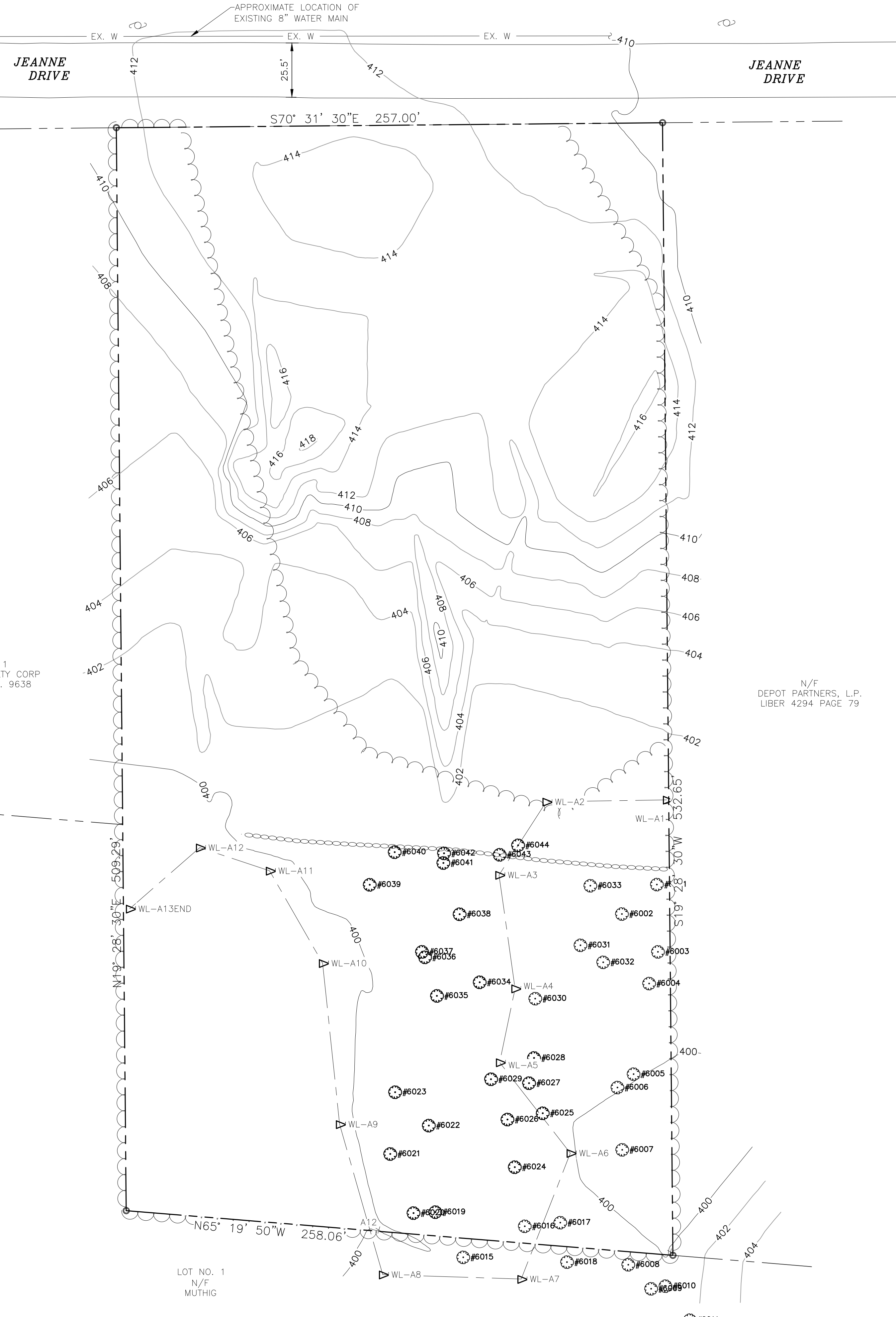
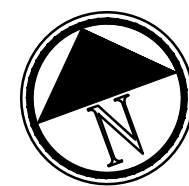
**BMPs - AFTER DISTURBANCE**

- WITHIN FOURTEEN (14) DAYS OF ACHIEVING FINAL SITE STABILIZATION, TEMPORARY EROSION AND SEDIMENT BMPs CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPs MUST BE STABILIZED IMMEDIATELY.
- AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 80% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

| 2   | 4/21/23            | REVISED PER PB COMMENTS   |  |                            |             |
|---|--------------------|---|--|----------------------------|-------------|
| 1   | 1/18/23            | REVISED PER PB COMMENTS   |  |                            |             |
| REV #   | DATE               | REMARKS:  | ISSUE #  | DATE                       | ISSUED FOR: |
|   |                    |   |  |                            |             |
| UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A LICENSED PROFESSIONAL ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2 OF THE N.Y. STATE EDUCATION LAW. |                    |   |  |                            |             |
|   |                    |   |  |                            |             |
| 22 Mulberry St., Suite 2A,<br>Middletown, NY 10940<br>1 845-343-1481 fx 845-343-4986  |                    |   | 181 Church St., Suite 100,<br>Poughkeepsie, NY 12601<br>1 845-544-9704 fx 855-320-8735 |                            |             |
| STAMP:<br>  |                    | PROJECT TITLE:<br><b>JEANNE DRIVE<br/>SITE PLAN</b><br>SECTION 34, BLOCK 2, LOT 66. |  |                            |             |
| DRAWING TITLE:<br><b>GENERAL NOTES SHEET</b>  |                    |   |  |                            |             |
| DESIGNED BY:<br>JB  | DRAWN BY:<br>VMB   | APPROVED BY P.M:<br>RDF   | APPROVED BY P.I.C:<br>MDF  | DRAWING #:<br><b>C-000</b> |             |
| DATE:<br>11/01/2022   | SCALE:<br>AS SHOWN | FE PROJECT #:<br>19-049   |  |                            |             |
| PAGE 2 OF 10  |                    |   |  |                            |             |



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**LEGEND**

- EXISTING PROPERTY LINE
- PROPERTY LINE SETBACK
- EXISTING MAJOR CONTOUR ELEVATION
- EXISTING MINOR CONTOUR ELEVATION
- EXISTING WETLAND BOUNDARY
- EXISTING HYDROLOGIC SUB BASIN BOUNDARY
- WATER LINE
- STORM LINE
- SUB-BASIN
- EXISTING STONE WALL
- SILT FENCE
- TREELINE
- EXISTING WETLAND FLAG
- EXISTING UTILITY POLE
- CATCH BASIN
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED

**TREE LEGEND**

| TREE# | SPECIES        | SIZE             |
|-------|----------------|------------------|
| 6001  | TULIP TREE     | 15"              |
| 6002  | RED MAPLE TREE | 11"              |
| 6003  | RED MAPLE TREE | 12" + 16" DOUBLE |
| 6004  | RED MAPLE TREE | 16" + 18" DOUBLE |
| 6005  | OAK TREE       | 21"              |
| 6006  | RED MAPLE TREE | 16"              |
| 6007  | RED MAPLE TREE | 18"              |
| 6008  | OAK TREE       | 20"              |
| 6009  | RED MAPLE TREE | 18"              |
| 6010  | RED MAPLE TREE | 14"              |
| 6011  | OAK TREE       | 18"              |
| 6012  | RED MAPLE TREE | 20"              |
| 6013  | OAK TREE       | 24"              |
| 6014  | RED MAPLE TREE | 16"              |
| 6015  | OAK TREE       | 14"              |
| 6016  | OAK TREE       | 12"              |
| 6017  | RED MAPLE TREE | 29" DOUBLE       |
| 6018  | OAK TREE       | 18"              |
| 6019  | OAK TREE       | 19"              |
| 6020  | OAK TREE       | 18"              |
| 6021  | OAK TREE       | 16"              |
| 6022  | OAK TREE       | 14"              |
| 6023  | HICKORY TREE   | 22"              |
| 6024  | HICKORY TREE   | 12"              |
| 6025  | OAK TREE       | 20"              |
| 6026  | OAK TREE       | 24"              |
| 6027  | RED MAPLE TREE | 12"              |
| 6028  | RED MAPLE TREE | 16"              |
| 6029  | RED MAPLE TREE | 12"              |
| 6030  | RED MAPLE TREE | 14" HOLLOW       |
| 6031  | RED MAPLE TREE | 12"              |
| 6032  | RED MAPLE TREE | 11"              |
| 6033  | OAK TREE       | 28"              |
| 6034  | RED MAPLE TREE | 12"              |
| 6035  | OAK TREE       | 16"              |
| 6036  | OAK TREE       | 12"              |
| 6037  | OAK TREE       | 14"              |
| 6038  | RED MAPLE TREE | 11"              |
| 6039  | RED MAPLE TREE | 22"              |
| 6040  | RED MAPLE TREE | 18" HOLLOW       |
| 6041  | OAK TREE       | 14"              |
| 6042  | OAK TREE       | 11"              |
| 6043  | RED MAPLE TREE | 20"              |
| 6044  | TULIP TREE     | 11"              |

**GENERAL NOTES**

- PROPERTY LINE AND TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD SURVEY BY OSWALD & GILLESPIE, PC DATED COMPLETED ON JULY 2003. WETLAND AND TREE LOCATION IS BASED ON A FIELD SURVEY BY TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C. COMPLETED ON 03/21/23.
- VERTICAL DATUM: REFERENCE 4(A).
- ANGLES OR BEARINGS SHOWN HEREON ARE FORMATTED IN DEGREES, MINUTES, AND SECONDS. DISTANCES OR ELEVATIONS SHOWN HEREON ARE IN U.S. SURVEY FEET, UNLESS NOTED OTHERWISE.
- REFERENCES:
  - (A) HILLSIDE LAND DEVELOPMENT INC. PREPARED BY OSWALD AND GILLESPIE P.C. EFFECTIVE DATE FEBRUARY 10, 2004
  - (B) SUBSURFACE SEWAGE DISPOSAL SYSTEM PLAN FOR HILLSIDE LAND DEVELOPMENT INC. SECTION 34 BLOCK 2 LOT 66 PREPARED BY MASTER SOLUTIONS P.A. EFFECTIVE DATE NOVEMBER 22, 2006
  - (C) MAP OF SURVEY FOR THE LANDS OF HILLSIDE LAND DEVELOPMENT INC. PREPARED BY OSWALD AND GILLESPIE EFFECTIVE DATE JULY 18, 2003
- THIS SURVEY IS SUBJECT TO A COMPLETE AND UP TO DATE ABSTRACT OF TITLE. COVENANTS, EASEMENTS, GRANTS AND RIGHTS-OF-WAY NOT VISIBLE AND NOT REFERENCED ARE NOT SHOWN. TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C. SHALL NOT BE LIABLE FOR THE DISTURBANCE TO ANYONE'S RIGHT TO THE USE OF THE PROPERTY OR THE DISTURBANCE OF ANY UTILITIES NOT SHOWN OR REFERENCED ON THIS SURVEY PLAT.
- UNDERGROUND IMPROVEMENTS IF ANY AND NOT VISIBLE AT THE TIME OF THE SURVEY, HAVE NOT BEEN LOCATED IN THE FIELD OR SHOWN HEREON.
- LOCATIONS OF ALL UTILITIES AND SUBSTRUCTURES ARE APPROXIMATE ONLY BASED ON SURFACE EVIDENCE AND EXISTING PLANS. THE INFORMATION GIVEN ON THE SURVEY PERTAINING TO UTILITIES AND SUBSTRUCTURES IS NOT CERTIFIED TO ACCURACY OR COMPLETENESS. CONSULT WITH THE APPROPRIATE COMPANY OR AGENCY BEFORE DESIGNING OR CONSTRUCTING IMPROVEMENTS. TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C. WILL NOT BE RESPONSIBLE FOR ANY DAMAGE SUBSEQUENTLY CAUSED TO PERSONNEL, STRUCTURES, OR UTILITIES.
- THIS SURVEY PLAT IS FOR SITE PLAN/ENGINEERING PURPOSES ONLY AND IS NOT INTENDED TO BE USED FOR THE TRANSFER OF TITLE.
- THE SUBJECT PROPERTY FALLS WITHIN FLOOD ZONE "NOT PRINTED" AS PER THE NATIONAL FLOOD INSURANCE RATE MAP FOR THE TOWN OF DEPOSIT, COUNTY OF DELAWARE, STATE OF NEW YORK, COMMUNITY PANEL NO # 36025C0705D, EFFECTIVE DATE OF 06/19/2012. THIS DETERMINATION IS BASED ON SCALED MAP LOCATION AND GRAPHIC PLOTTING.
- WETLAND FLAGS SHOWN AS DELINEATED BY MICHAEL NOWICKI ON 02/06/23, AND FIELD SURVEYED BY TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C. ON xx/xx/xx.

**NOTES:**

- WETLAND DELINEATION CONDUCTED BY MICHAEL NOWICKI OF ECOLOGICAL SOLUTIONS, LLC ON FEBRUARY 6, 2023.
- TREE INVENTORY CONDUCTED BY TOM'S LANDSCAPING, LTD DATED MARCH 2, 2023 AS PER SECTION 172-5 OF THE TOWN CODE.

File Name: F:\2019\19-049 Jeanne Drive Site Plan\C-001.dwg (Layout: C-001)  
Date: Fri, Apr 21, 2023 - 10:03 AM (Name: wmb)

**1 EXISTING CONDITIONS**  
1"=30'

| 2     | 4/21/23 | REVISED PER PB COMMENTS |         |      |             |
|-------|---------|-------------------------|---------|------|-------------|
| 1     | 1/18/23 | REVISED PER PB COMMENTS |         |      |             |
| REV # | DATE    | REMARKS:                | ISSUE # | DATE | ISSUED FOR: |

REFERENCE SCALE

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**FELLENZER** ENGINEERING LLP www.fellp.com

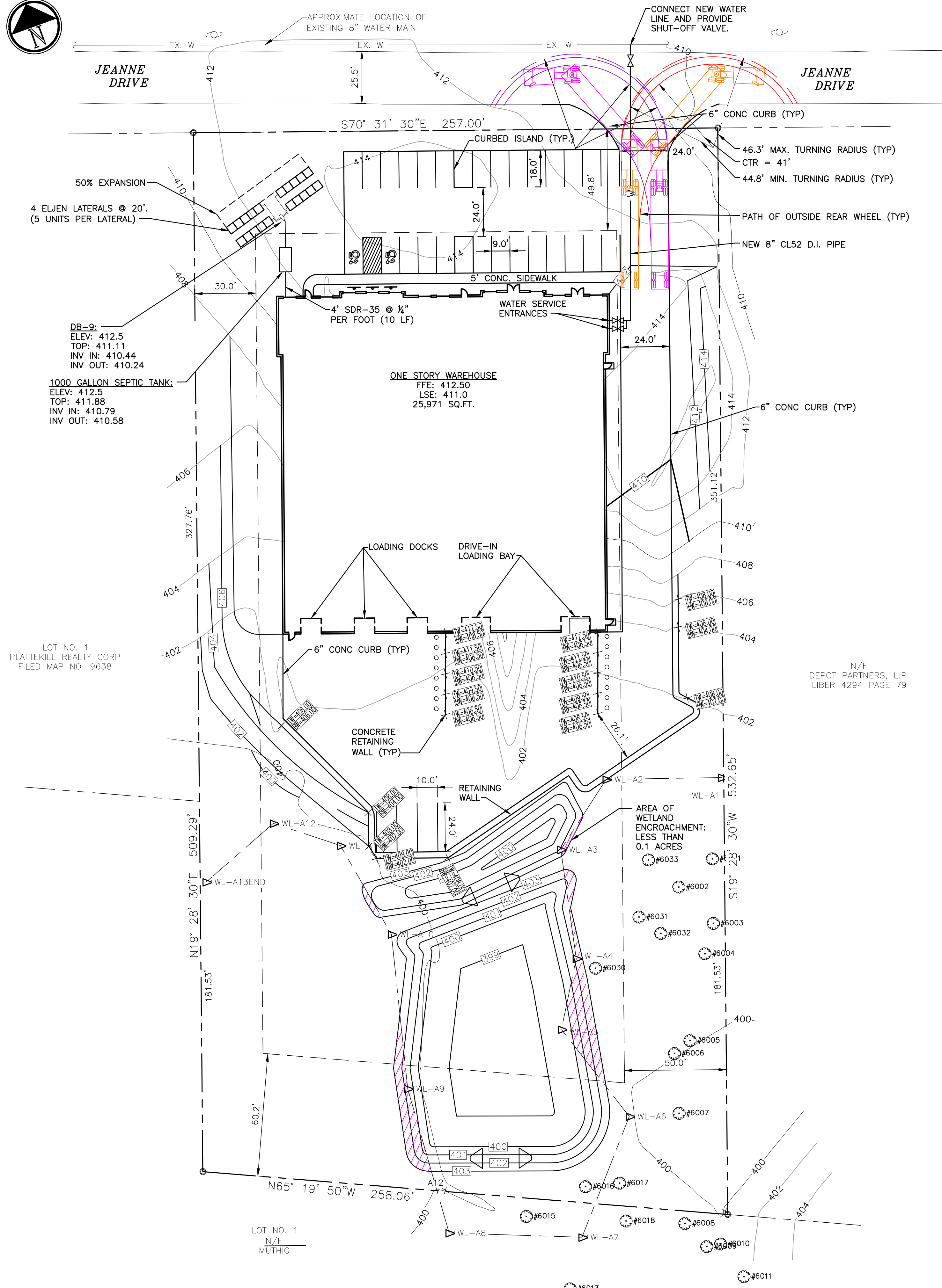
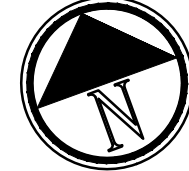
22 Mulberry St., Suite 2A, Middletown, NY 10940  
 1 845-343-1481 fx 845-343-4986

181 Church St., Suite 100, Poughkeepsie, NY 12601  
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|                  |  |                 |  |                       |  |                       |  |                  |  |
|------------------|--|-----------------|--|-----------------------|--|-----------------------|--|------------------|--|
| DESIGNED BY: JB  |  | DRAWN BY: VMB   |  | APPROVED BY P.M.: RDF |  | APPROVED BY P.C.: MDF |  | DRAWING #: C-001 |  |
| DATE: 11/01/2022 |  | SCALE: AS SHOWN |  | FE PROJECT #:         |  | 19-049                |  | PAGE 3 OF 10     |  |





**1 SITE PLAN**  
1"=30'

**LEGEND**

- EXISTING PROPERTY LINE
- - - PROPERTY LINE SETBACK
- 410 EXISTING MAJOR CONTOUR ELEVATION
- 416 EXISTING MINOR CONTOUR ELEVATION
- - - EXISTING WETLAND BOUNDARY
- - - EXISTING HYDROLOGIC SUB BASIN BOUNDARY
- W WATER LINE
- ST STORM LINE
- - - SUB-BASIN
- - - EXISTING STONE WALL
- - - EXISTING UTILITY POLE
- - - SILT FENCE
- - - TREE LINE
- - - EXISTING WETLAND FLAG
- - - EXISTING UTILITY POLE

**PARKING CALCULATIONS:**

TOTAL REQUIRED PARKING SPACES = 23 EMPLOYEES X 2 PARKING SPACES/3 EMPLOYEES = 15  
 TOTAL PROVIDED PARKING SPACES = 27

REQUIRED ADA PARKING SPACES = 2  
 PROVIDED ADA PARKING SPACES = 2

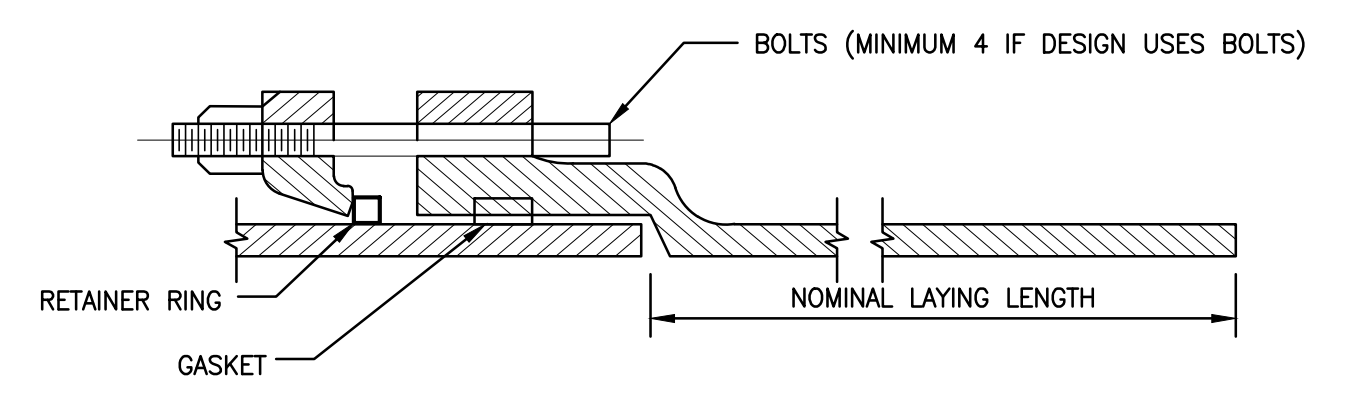
\* OFF-STREET PARKING REQUIREMENTS PER SECTION 185-13.C(B) FOR WAREHOUSE USE

TOTAL REQUIRED TRUCK LOADING SPACES = 25,000 - 39,999SF = 2  
 TOTAL PROVIDED TRUCK LOADING SPACES = 3

\* OFF-STREET TRUCK LOADING PARKING REQUIREMENTS PER SECTION 185-13.B.6

**WETLAND DISTURBANCE CALCULATIONS:**

WETLAND AREA = 1,128FT<sup>2</sup> = 0.03 ACRES

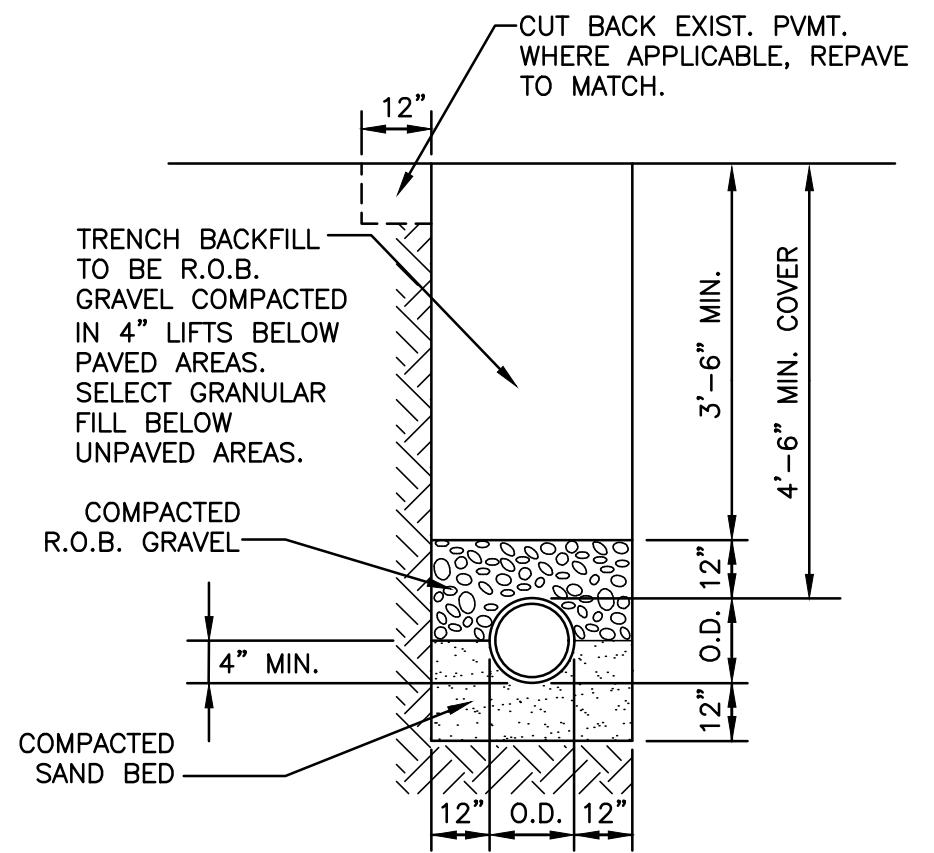


RESTRAINED MECHANICAL JOINT FOR DUCTILE IRON PIPE AND FITTINGS  
 NOTE: WILL VARY WITH SIZE AND MANUFACTURER

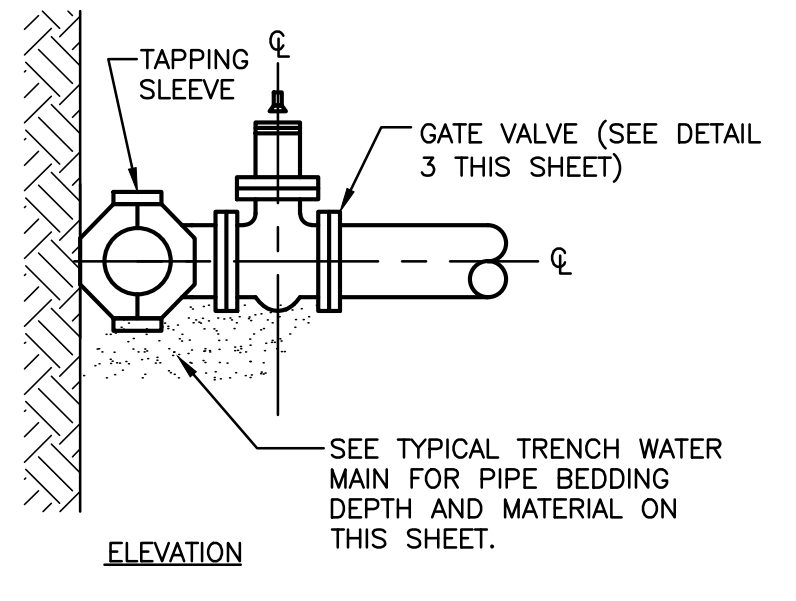
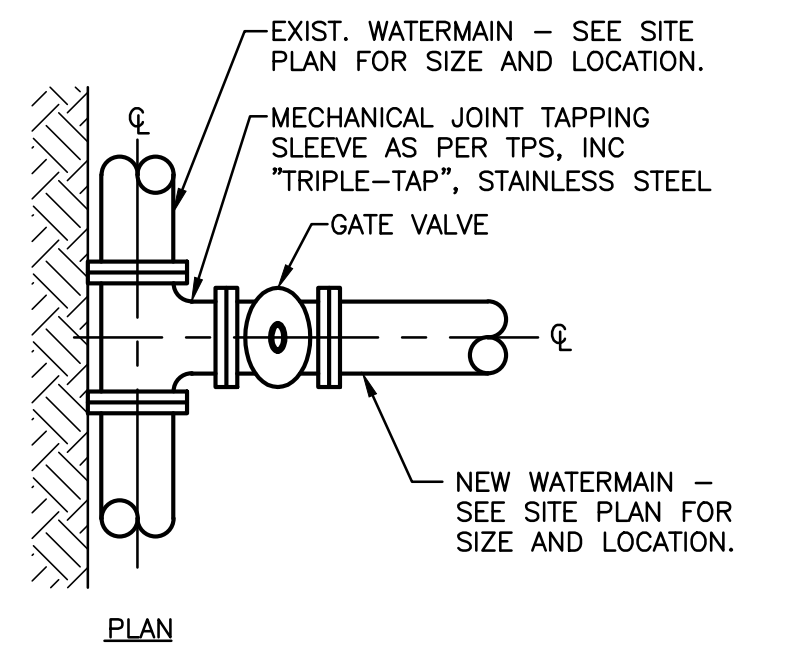
| MECHANICAL JOINT BOLT TORQUE |           |                 |
|------------------------------|-----------|-----------------|
| NPS SIZE                     | BOLT SIZE | TORQUE (LBF-FT) |
| 4-24                         | 3/4"      | 75-90           |

**2 RESTRAINED MECHANICAL JOINT DETAIL**  
N.T.S.

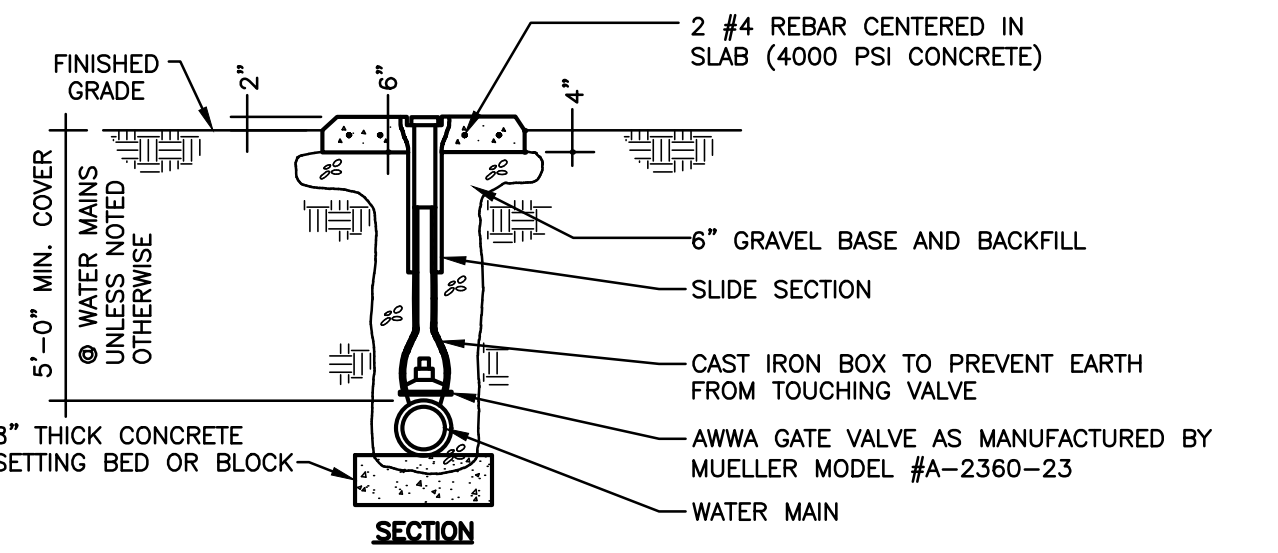
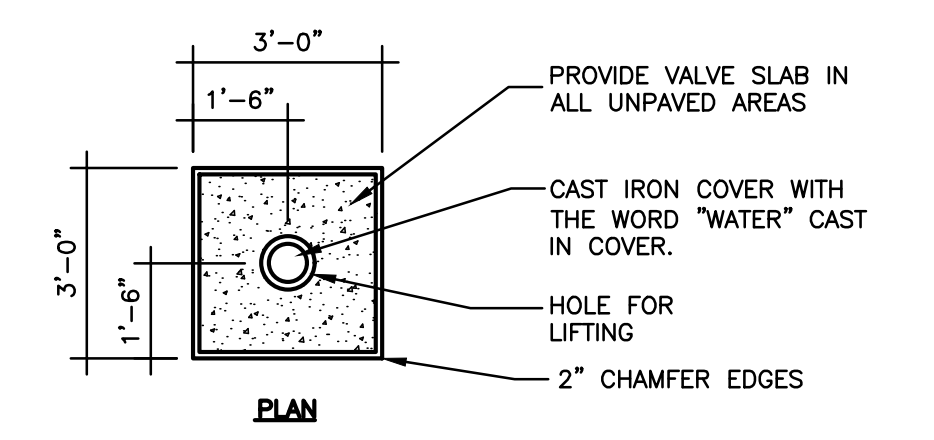
**NOTE:**  
 1. RETAINER GLANDS SHALL BE EBBA IRON MEGALUG SERIES 1100 OR APPROVED EQUIVALENT



**4 TYPICAL TRENCH - WATER MAIN DETAIL**  
N.T.S.



**1 TAPPING SLEEVE & GATE VALVE DETAIL**  
N.T.S.



**3 VALVE BOX AND VALVE SLAB**  
N.T.S.

**NOTE:**  
 1. ALL VALVES TO INCLUDE MEGA-LUG RETAINER GLANDS AND BE RODDED BACK TO ADJACENT TEE IN THE WATER MAIN WITH 3/4" GALVANIZED STEEL RODS.

| REV # | DATE    | REMARKS:                | ISSUE # | DATE | ISSUED FOR: |
|-------|---------|-------------------------|---------|------|-------------|
| 2     | 4/21/23 | REVISED PER PB COMMENTS |         |      |             |
| 1     | 1/18/23 | REVISED PER PB COMMENTS |         |      |             |

REFERENCE SCALE

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 1 845-343-1481 fx 845-343-4986

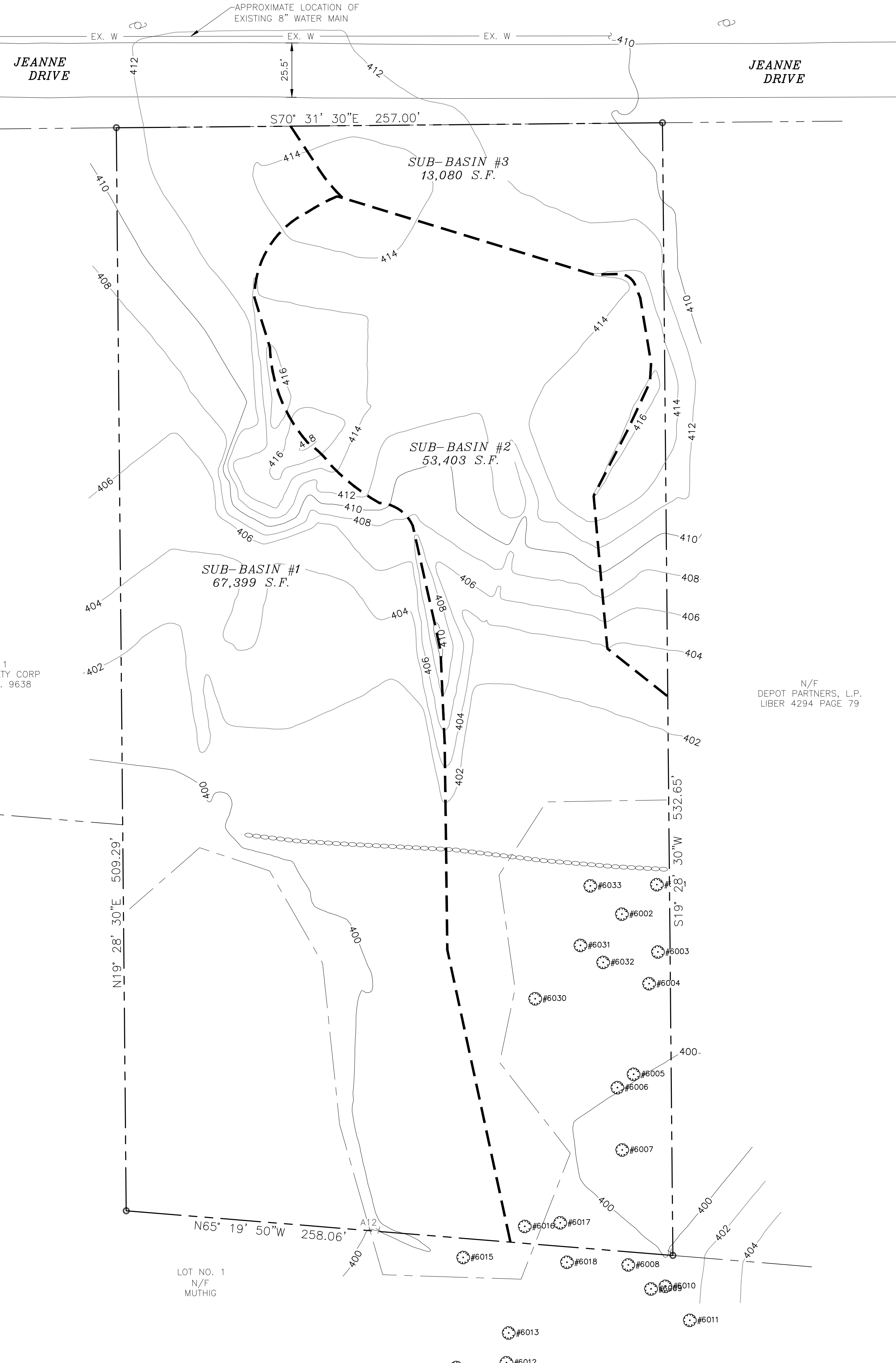
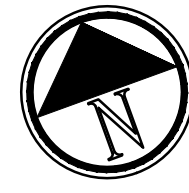
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 1 845-454-9704 fx 855-320-8735

|   |           |                   |                     |
|---|-----------|-------------------|---------------------|
| STAMP:  |           | PROJECT TITLE:    |                     |
| <b>JEANNE DRIVE</b><br><b>SITE PLAN</b><br>SECTION 34, BLOCK 2, LOT 66. |           | DRAWING TITLE:    |                     |
|   |           | <b>SITE PLAN</b>  |                     |
| DESIGNED BY:  | DRAWN BY: | APPROVED BY P.M.: | APPROVED BY P.I.C.: |
| DATE:   | SCALE:    | FE PROJECT #:     | DRAWING #:          |
| 11/01/2022  | AS SHOWN  | 19-049            | C-101               |
|   |           |                   | PAGE 4 OF 10        |

File Name: F:\2019\19-049 Jeanne Drive Site Plan\C-101.dwg (Layout: C-011)  
 Date: Fri, Apr 21, 2023 - 10:03 AM (Name: vmb)



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**LEGEND**

- EXISTING PROPERTY LINE
- PROPERTY LINE SETBACK
- EXISTING MAJOR CONTOUR ELEVATION
- EXISTING MINOR CONTOUR ELEVATION
- EXISTING WETLAND BOUNDARY
- EXISTING HYDROLOGIC SUB BASIN BOUNDARY
- WATER LINE
- STORM LINE
- SUB-BASIN
- EXISTING STONE WALL
- SILT FENCE
- TREELINE
- EXISTING WETLAND FLAG
- EXISTING UTILITY POLE
- CATCH BASIN
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED

File Name: F:\2019\19-049 Jeanne Drive Site Plan\C-401.dwg (Layout: C-401)  
Date: Fri, Apr 21, 2023 - 10:03 AM (Name: vmb)

**1 PRE-DEVELOPMENT STORMWATER BASINS**  
1"=30'

| 2     | 4/21/23 | REVISED PER PB COMMENTS |         |      |             |
|-------|---------|-------------------------|---------|------|-------------|
| 1     | 1/18/23 | REVISED PER PB COMMENTS |         |      |             |
| REV # | DATE    | REMARKS:                | ISSUE # | DATE | ISSUED FOR: |

REFERENCE SCALE

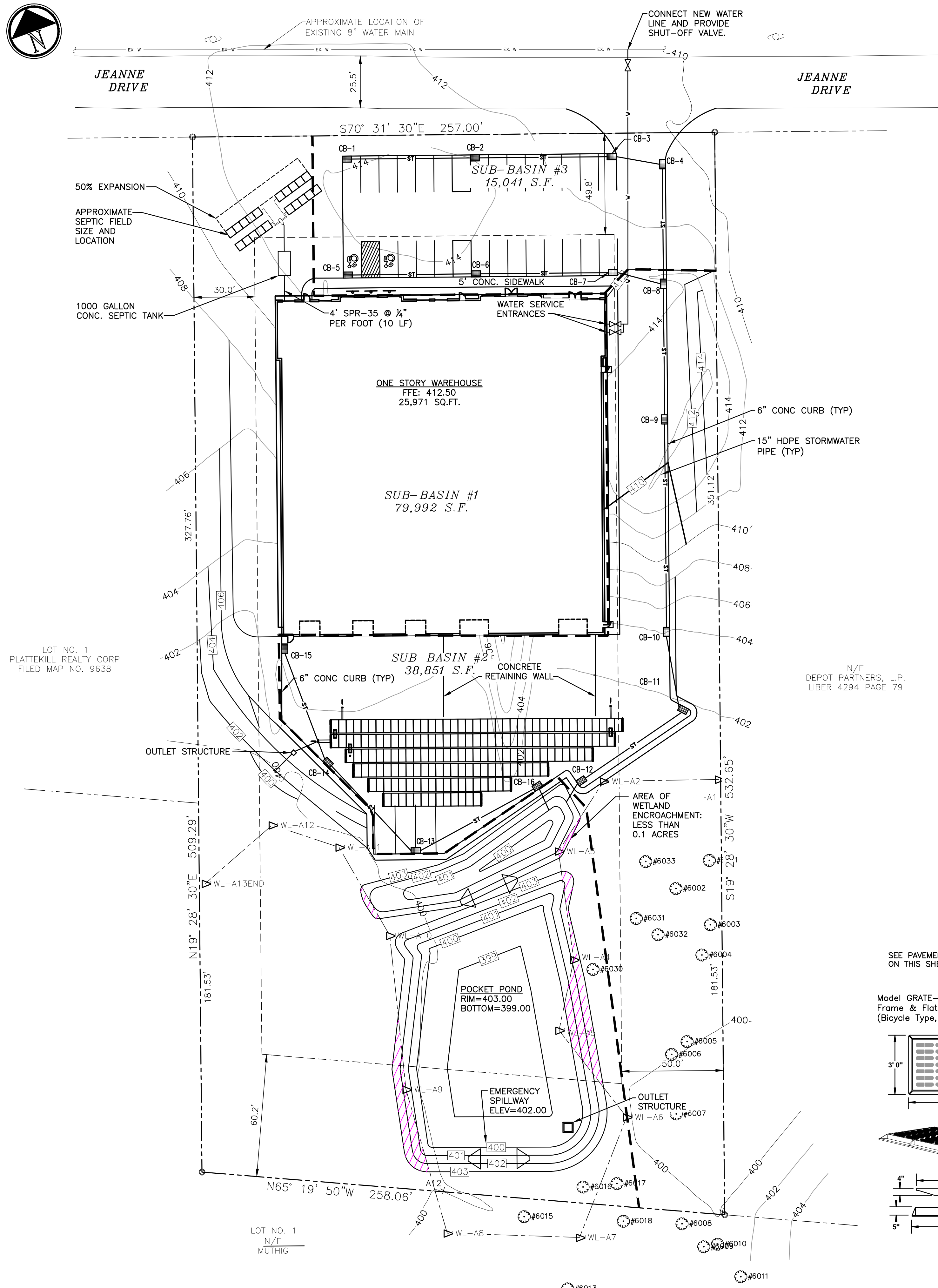
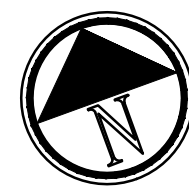
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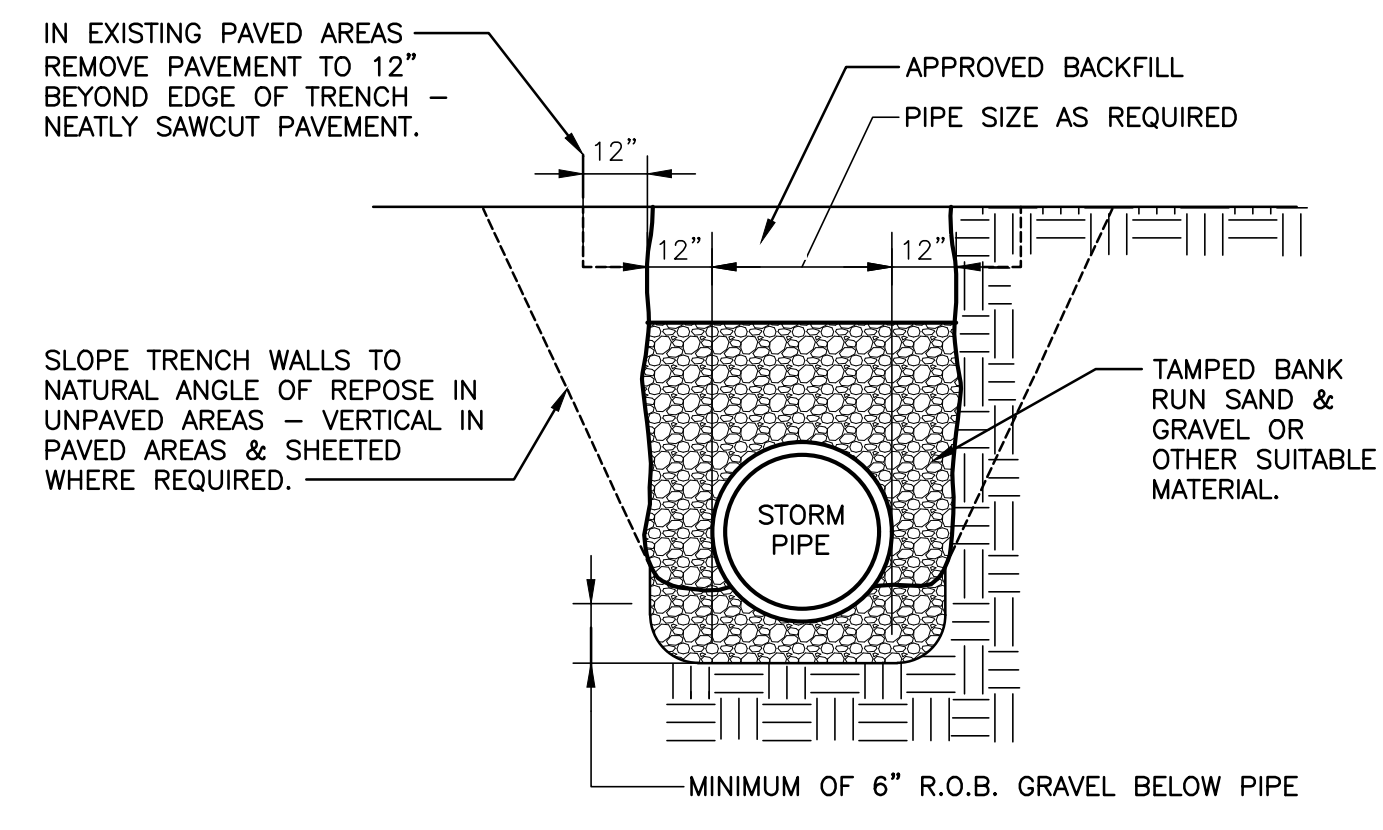
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|---|-----------------|--|----------------------|-------------------------|--|
| STAMP:  |                 | PROJECT TITLE: <b>JEANNE DRIVE SITE PLAN</b><br>SECTION 34, BLOCK 2, LOT 66. |                      |                         |  |
| DRAWING TITLE: <b>PRE-DEVELOPMENT STORMWATER BASINS</b> |                 |  |                      |                         |  |
| DESIGNED BY: JB   | DRAWN BY: VMB   | APPROVED BY PM: RDF  | APPROVED BY PIC: MDF | DRAWING #: <b>C-401</b> |  |
| DATE: 11/01/2022  | SCALE: AS SHOWN | FE PROJECT #:  |                      | PAGE 5 OF 10            |  |



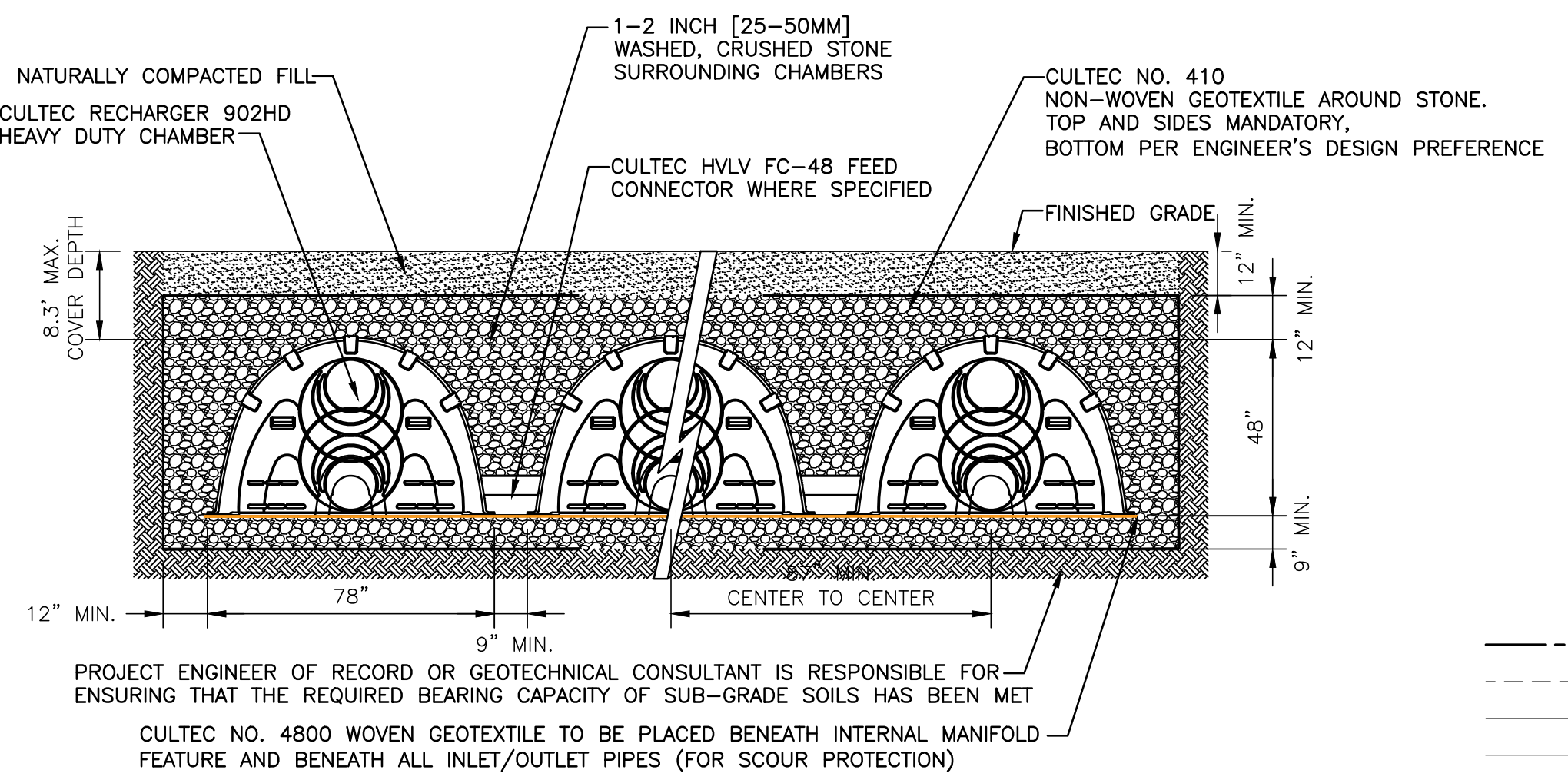
PROGRESS PRINT  
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**1 STORMWATER PLAN**  
1"=30'

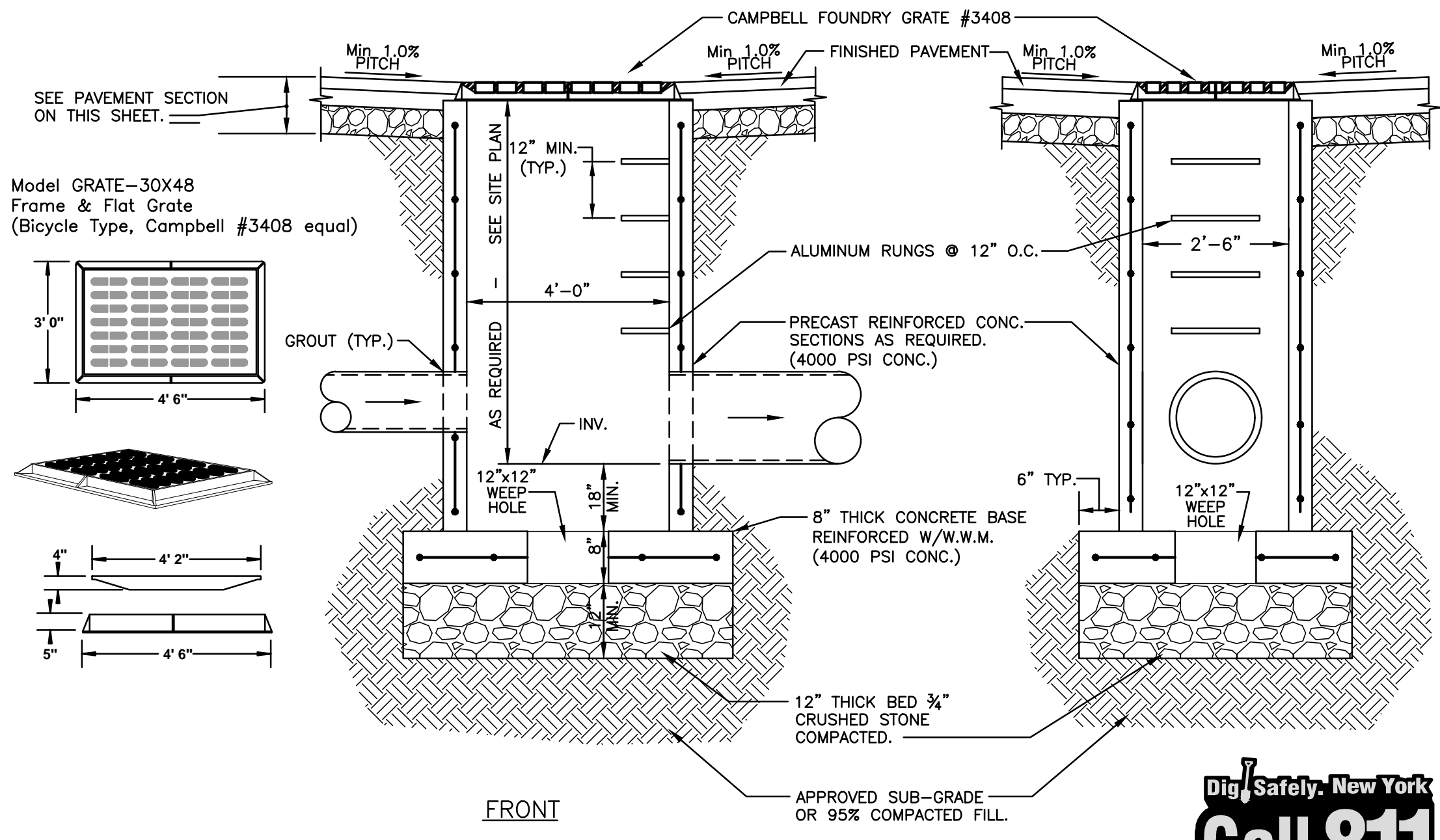


**1 TYPICAL TRENCH - STORM DRAINAGE**  
N.T.S.




- PROJECT ENGINEER OF RECORD OR GEOTECHNICAL CONSULTANT IS RESPONSIBLE FOR ENSURING THAT THE REQUIRED BEARING CAPACITY OF SUB-GRADE SOILS HAS BEEN MET
- CULTEC NO. 4800 WOVEN GEOTEXTILE TO BE PLACED BENEATH INTERNAL MANIFOLD FEATURE AND BENEATH ALL INLET/OUTLET PIPES (FOR SCOUR PROTECTION)
- NOTES:
- THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS." THE LOAD CONFIGURATION SHALL INCLUDE:
    - INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER
    - MAXIMUM PERMANENT (50-YEAR) COVER LOAD
    - 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD
  - THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"
  - THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING:
    - THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430
    - THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75
    - THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95

**2 CULTEC STORMTECH CHAMBERS CROSS SECTION**  
N.T.S.



**3 TYPICAL YARD TYPE CATCH BASIN**  
N.T.S.

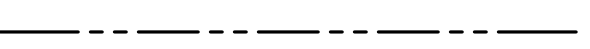

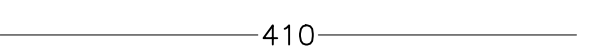
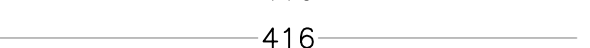
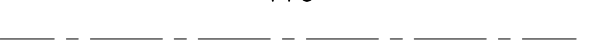

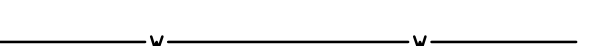



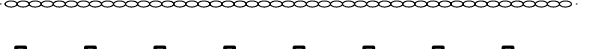

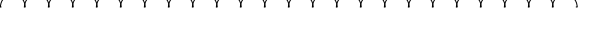


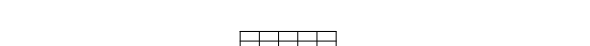
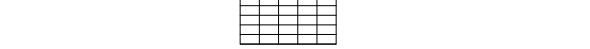
**IMPERVIOUS COVERAGE CALCULATIONS:**  
 BUILDING AREA = 25,971 SQFT  
 PAVEMENT AREA = 28,901 SQFT  
 TOTAL IMPERVIOUS COVERAGE = 54,872 SQFT

**WETLAND DISTURBANCE CALCULATIONS:**  
 WETLAND AREA = 1,128FT<sup>2</sup> = 0.03 ACRES

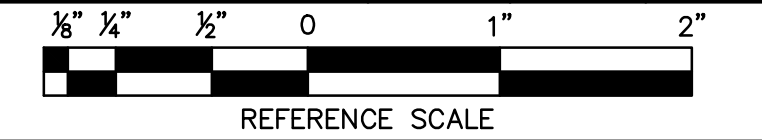
**CATCH BASIN ELEVATION SCHEDULE**

| CB-#/MH-# | RIM    | INV IN (A) | INV IN (B) | INV OUT |
|-----------|--------|------------|------------|---------|
| CB-1      | 413.0  | ---        | ---        | 411.0   |
| CB-2      | 413.0  | 410.30     | ---        | 410.0   |
| CB-3      | 411.0  | 409.30     | ---        | 409.0   |
| CB-4      | 411.0  | 408.70     | ---        | 408.50  |
| CB-5      | 413.0  | ---        | ---        | 411.0   |
| CB-6      | 413.0  | 410.30     | ---        | 410.0   |
| CB-7      | 411.0  | 409.30     | ---        | 409.0   |
| CB-8      | 412.0  | 408.75     | 407.90     | 407.60  |
| CB-9      | 410.50 | 407.0      | ---        | 406.75  |
| CB-10     | 409.0  | 406.0      | ---        | 405.75  |
| CB-11     | 408.0  | 405.35     | ---        | 405.10  |
| CB-12     | 408.0  | 404.50     | ---        | 403.50  |
| CB-13     | 408.0  | 405.10     | ---        | 404.90  |
| CB-14     | 408.25 | 405.90     | ---        | 405.70  |
| CB-15     | 408.50 | 408.0      | ---        | 406.50  |
| CB-16     | 408.0  | 404.30     | ---        | 403.50  |

**LEGEND**

-  EXISTING PROPERTY LINE
-  PROPERTY LINE SETBACK
-  EXISTING MAJOR CONTOUR ELEVATION
-  EXISTING MINOR CONTOUR ELEVATION
-  EXISTING WETLAND BOUNDARY
-  EXISTING HYDROLOGIC SUB BASIN BOUNDARY
-  WATER LINE
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-  SUB-BASIN
-  EXISTING STONE WALL
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-  EXISTING WETLAND FLAG
-  EXISTING UTILITY POLE
-  CATCH BASIN
-  EXISTING TREE TO REMAIN
-  EXISTING TREE TO BE REMOVED

| REV # | DATE    | REMARKS:                | ISSUE # | DATE | ISSUED FOR: |
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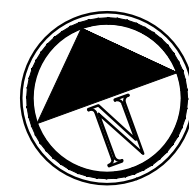
PROJECT TITLE: **JEANNE DRIVE SITE PLAN SECTION 34, BLOCK 2, LOT 66.**

DRAWING TITLE: **STORMWATER PLAN**

DESIGNED BY: JB    DRAWN BY: VMB    APPROVED BY: PMF    APPROVED BY: PIC: MDF    DRAWING #: **C-402**

DATE: 11/01/2022    SCALE: AS SHOWN    FE PROJECT #: 19-049    PAGE 6 OF 10

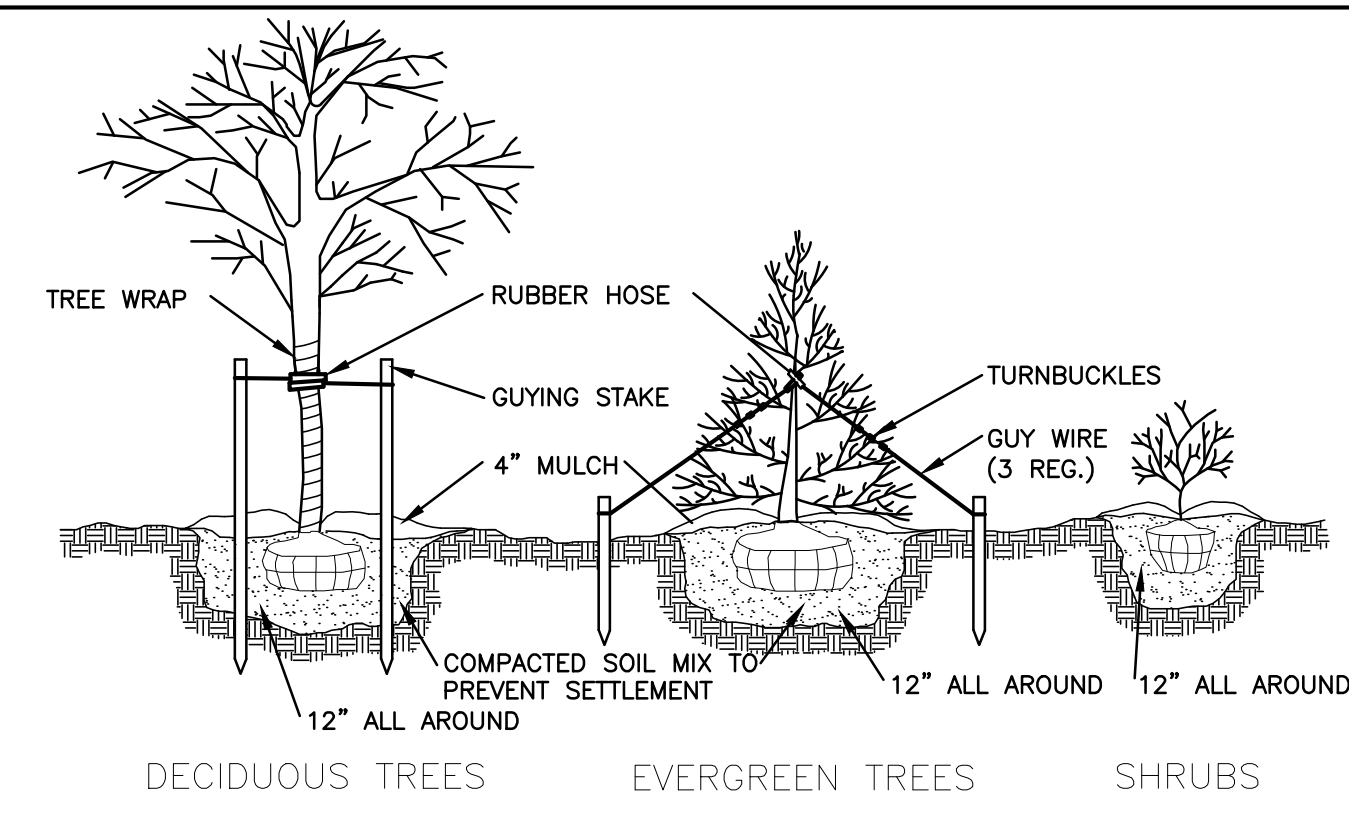
File Name: F:\2019\19-049 Jeanne Drive Site Plan\C-402.dwg (Layout: C-402)  
Date: Fri, Apr 21, 2023 - 10:03 AM (Name: vmb)



### LAWN RESTORATION SCHEDULE & NOTES

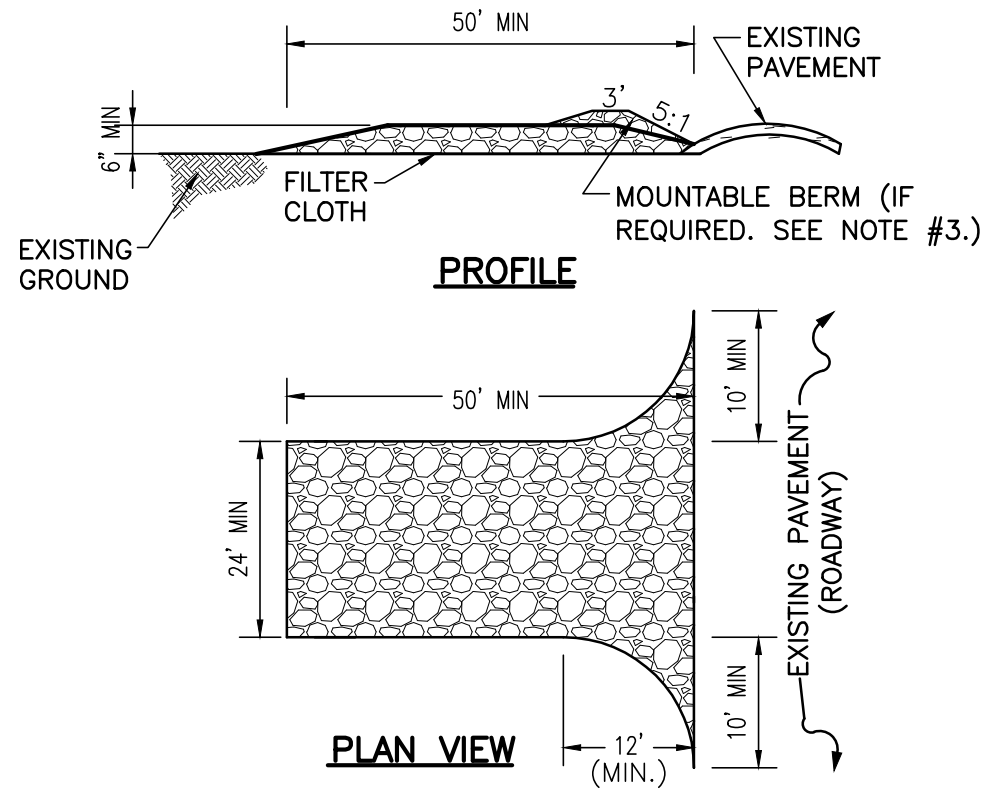
| SPECIES                |  |
|------------------------|--|
| PERMANENT SEED MIXTURE | PT 769 R&R ECO-TURF MIX WITH MICROCLOVER |

- NOTE:** OPTIMUM PERMANENT SEEDING SCHEDULE: SPRING OR EARLY FALL
- REMOVE ALL DEBRIS (STICKS, STONES, ETC.) FROM AREA, AND PREPARE SOIL BY TILLING TO A 3"-4" DEPTH.
  - RAKE SURFACE LEVEL TO PREVENT WATER FROM POOLING IN ONE AREA. AREAS LOCATED ON A SLOPE SHALL BE RAKED PARALLEL WITH CONTOURS TO PREVENT MOISTURE RUN-OFF.
  - FERTILIZER SHALL BE APPLIED TO THE TILLED SOIL AT RATE OF 6 LBS. PER 1,000 sq.ft. FERTILIZER SHALL BE A COMMERCIAL 10-0-10 MIXTURE.
  - AREA SHALL BE LIGHTLY SPRAYED WITH WATER TO ALLOW SOIL TO SETTLE.
  - PERMANENT SEED MIXTURE SHALL BE SPREAD BY HAND, LAWN SPREADER OR MECHANICAL SEEDER (AS APPROPRIATE FOR SIZE OF AREA) AT A RATE OF 5 lbs. OF SEED MIXTURE PER 1,000 sq.ft. DO NOT OVERSEED, OR OVER CROWDING OF THE SEEDLINGS MAY OCCUR, AND HAMPER PROPER LAWN GROWTH.
  - LIGHTLY COVER SEEDED AREA WITH 1/4"-3/4" OF SOIL. (ROLLING OF SEEDBED TO PROMOTE SOIL TO SEED CONTACT IS OPTIONAL) AND COVER WITH A MULCH OF HAY OR STRAW AT A RATE OF 90 lbs (APPROX 2 BALES) PER 1,000 sq.ft.
  - SEEDED AREA SHALL BE COVERED WITH A MULCH OF STRAW OR HAY AT THE RATE OF 90 lbs. (APPROX. 2 BALES) PER 1,000 S.F. TO HELP MAINTAIN SOIL MOISTURE LEVEL.
  - LIGHTLY WATER SEED BED DAILY TO KEEP IT MOIST, WHILE TAKING CARE NOT TO SATURATE.
  - NEW GRASS SHALL NOT BE MOWED UNTIL IT HAS REACHED A MINIMUM HEIGHT OF 2"-2 1/2".
  - PRACTICE REGULAR MAINTENANCE & WATER REGULARLY AS CONDITIONS REQUIRE.



### 1 PLANTING AND GUYING DETAIL

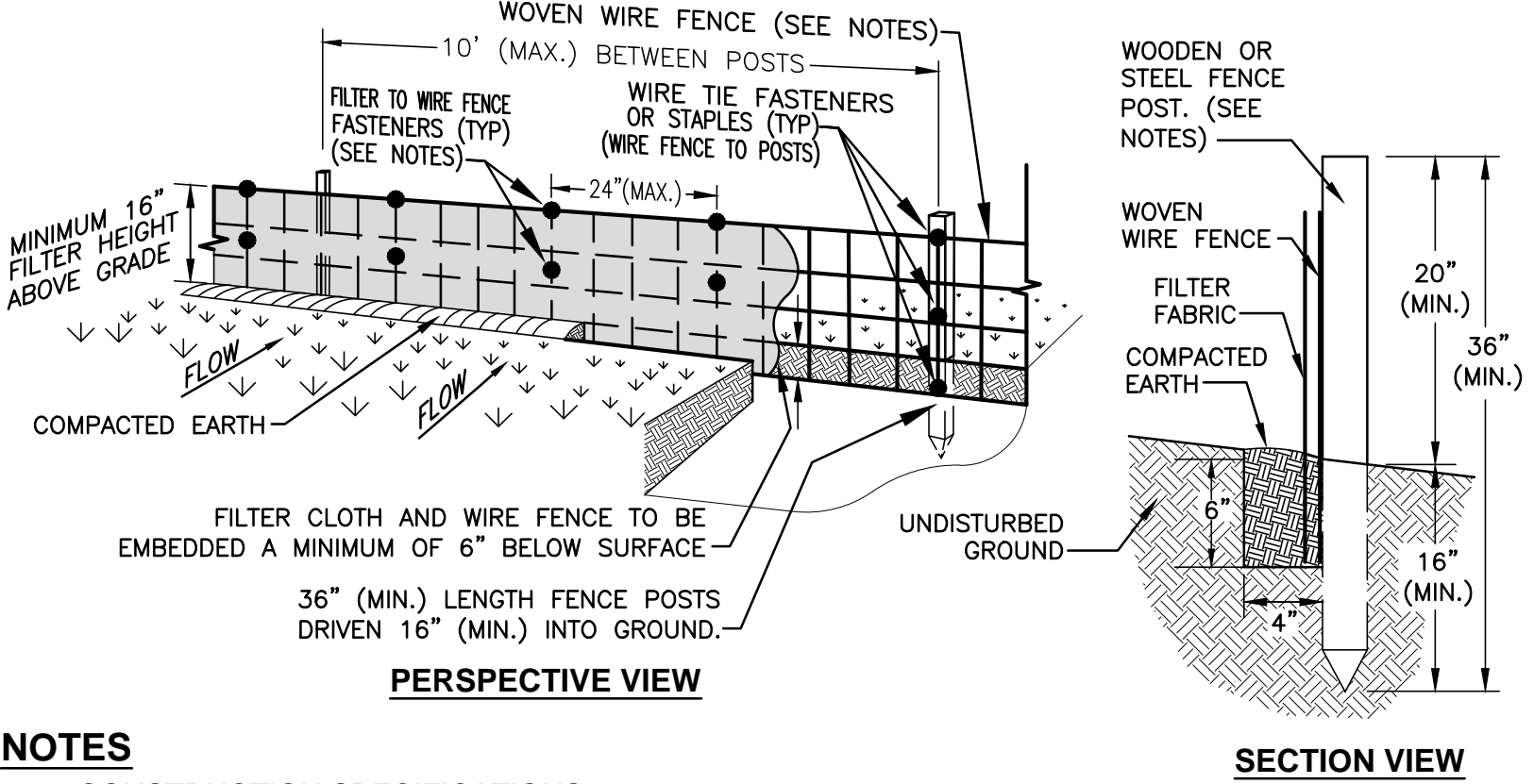
N.T.S.  
NOTE:  
1. NO MULCH SHALL BE WITHIN 6" OF THE BASE FOR TREES AND SHRUBS.



- NOTES:**
- SUBGRADE OF ENTRANCE AREA TO BE COMPACTED, AND FILTER CLOTH INSTALLED OVER THE ENTIRE STABILIZED ENTRANCE AREA PRIOR TO PLACING OF STONE. FILTER FABRIC SHALL BE TREVIRA #1127 OR APPROVED EQUAL.
  - STONE SHALL BE MIN OF 6" OF 2" CRUSHED GRAVEL. USE OF A RECLAIMED OR RECYCLED CONCRETE EQUIVALENT IS ALSO ACCEPTABLE.
  - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED UNDER AND ACROSS THE ENTRANCE. IF PIPING IS NOT POSSIBLE OR IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
  - STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT THE TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED IMMEDIATELY.
  - WHEN WASHING OF VEHICLE TIRES IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
  - ALL INGRESS AND EGRESS POINTS TO JOB SITE SHALL HAVE A STABILIZED CONSTRUCTION ENTRANCE

### 2 STABILIZED CONSTRUCTION ENTRANCE DETAIL

N.T.S. FOR MULTI-RESIDENTIAL OR COMMERCIAL SITES



- NOTES**
- CONSTRUCTION SPECIFICATIONS:**
- WOVEN WIRE FENCE SHALL BE 12 GAUGE WITH A MAXIMUM MESH OPENING OF 6", AND SHALL BE FASTENED SECURELY TO FENCE POSTS WITH STAPLES, WIRE TIES OR NYLON "ZIP" TIES.
  - FENCE POSTS SHALL BE EITHER STEEL ("I" OR "U" TYPE) OR HARDWOOD (2"x2"). POSTS SHALL BE MINIMUM 36" IN LENGTH AND INSTALLED WITH A MINIMUM 16" OF EMBEDMENT, WITH A MAXIMUM OF 10' O.C. BETWEEN POSTS.
  - FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA 1140N, OR AN APPROVED EQUAL, AND SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH WIRE TIES OR NYLON "ZIP" TIES SPACED EVERY 24" AT TOP AND MID SECTION OF FILTER FABRIC.
  - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED, WITH THE OVER-LAP BEING SECURELY FASTENED TO THE WOVEN WIRE FENCE AS PER NOTE #3 ABOVE.
  - AT END POSTS OF SILT FENCE, THE FILTER FABRIC SHALL BE WRAPPED AROUND THE POST AND APPROPRIATELY FASTENED AS PER NOTE #3 ABOVE.
  - PREFABRICATED SILT FENCE UNITS SHALL BE GEOTAB, ENVIROFENCE, OR AN APPROVED EQUAL.
  - MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL (SEDIMENT) REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

### 3 SILT FENCE W/ WIRE REINFORCEMENT DETAIL

N.T.S.

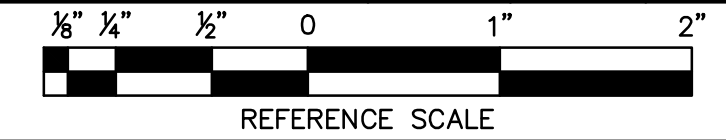
### LEGEND

|     |  |
|-----|--|
| --- | EXISTING PROPERTY LINE                 |
| --- | PROPERTY LINE SETBACK                  |
| --- | EXISTING MAJOR CONTOUR ELEVATION       |
| --- | EXISTING MINOR CONTOUR ELEVATION       |
| --- | EXISTING WETLAND BOUNDARY              |
| --- | EXISTING HYDROLOGIC SUB BASIN BOUNDARY |
| --- | WATER LINE                             |
| --- | STORM LINE                             |
| --- | SUB-BASIN                              |
| --- | EXISTING STONE WALL                    |
| --- | SILT FENCE                             |
| --- | TREELINE                               |
| --- | EXISTING WETLAND FLAG                  |
| --- | EXISTING UTILITY POLE                  |
| --- | CATCH BASIN                            |
| --- | EXISTING TREE TO REMAIN                |
| --- | EXISTING TREE TO BE REMOVED            |

### PLANTS LIST

| TYPE        | SYM. | QTY. | BOTANICAL NAME            | COMMON NAME          | MIN. SIZE    |
|-------------|------|------|---------------------------|----------------------|--------------|
| SHADE TREES | 41   | 41   | Acer Rubrum "Red Sunsets" | Red Sunset Red Maple | 2-1/2"-3" C  |
|             | 2    | 2    | ILEX Opulu                | American Holly       | 2-1/2"-3" C  |
|             | 11   | 11   | Quercus Bicolor           | Swamp White Oak      | 2-1/2"-3" C  |
| SHRUBS      | 12   | 12   | Viburnum Rhytidophyllum   | Leatherleaf Viburnum | 5' - 6' hgt  |
|             | 18   | 18   | Pieris Japonica           | Japanese Andromeda   | 9' - 10' hgt |

| REV # | DATE    | REMARKS:                | ISSUE # | DATE | ISSUED FOR: |
|-------|---------|-------------------------|---------|------|-------------|
| 2     | 4/21/23 | REVISED PER PB COMMENTS |         |      |             |
| 1     | 1/18/23 | REVISED PER PB COMMENTS |         |      |             |



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**FELLENZER**  
ENGINEERING LLP

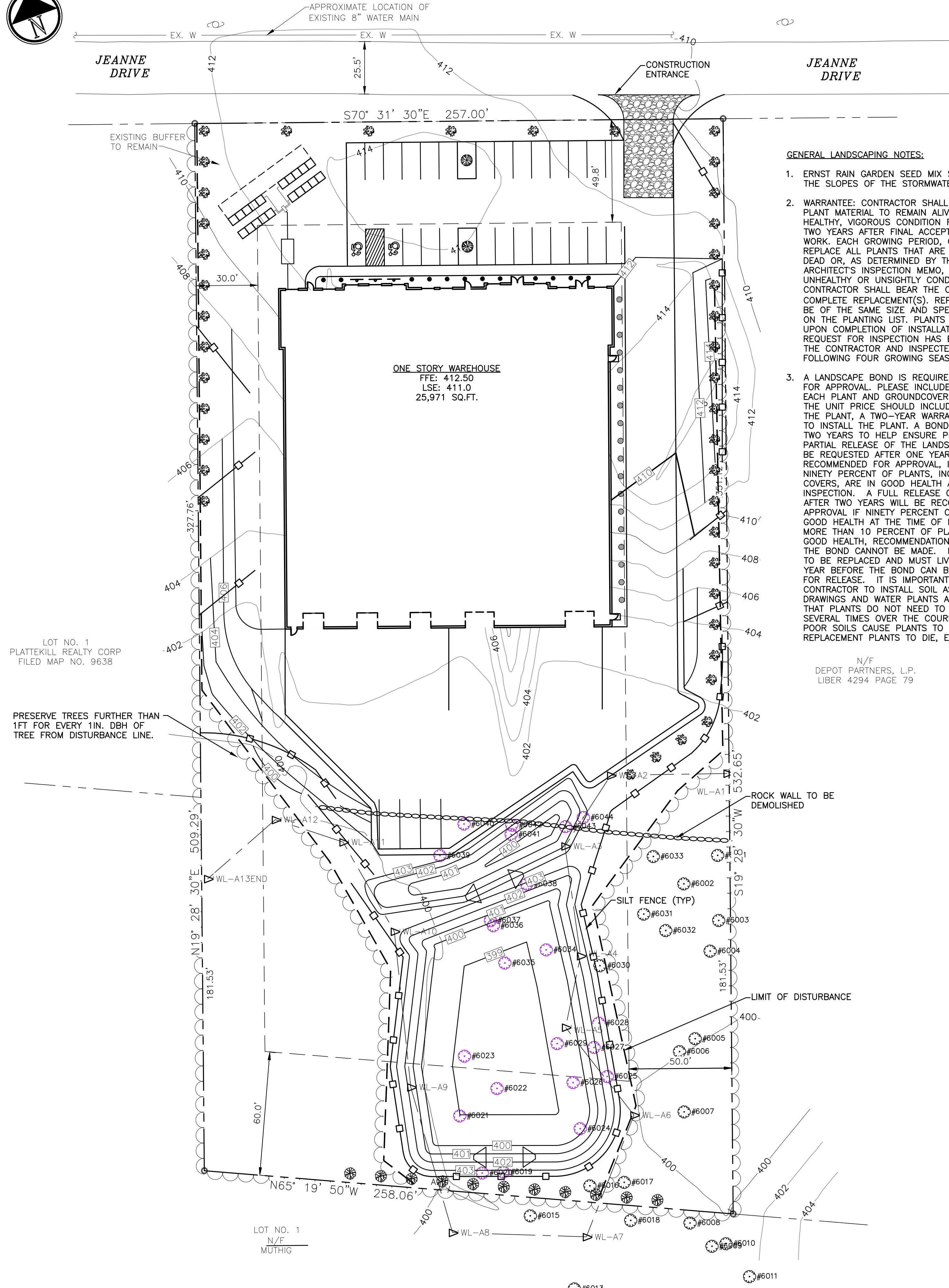
22 Mulberry St., Suite 2A, Middletown, NY 10940  
1 845-343-1481 fx 845-343-4986

181 Church St., Suite 100, Poughkeepsie, NY 12601  
1 845-454-9704 fx 855-320-8735

| DESIGNED BY: | DRAWN BY: | APPROVED BY P.M.: | APPROVED BY P.I.C.: | DRAWING #:   |
|--------------|-----------|-------------------|---------------------|--------------|
| JB           | VMB       | RDF               | MDF                 | C-701        |
| DATE:        | SCALE:    | FE PROJECT #:     |                     | PAGE 7 OF 10 |
| 11/01/2022   | AS SHOWN  | 19-049            |                     |              |



**PROGRESS PRINT**  
4/21/23  
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### 1 LANDSCAPING PLAN & EROSION & SEDIMENT CONTROL PLAN

1"=30'

LOT NO. 1 PLATTEKILL REALTY CORP FILED MAP NO. 9638

LOT NO. 1 N/F MUTHIG

ONE STORY WAREHOUSE  
FFE: 412.50  
LSE: 411.0  
25,971 SQ.FT.

CONSTRUCTION ENTRANCE

JEANNE DRIVE

JEANNE DRIVE

APPROXIMATE LOCATION OF EXISTING 8" WATER MAIN

EXISTING BUFFER TO REMAIN

PRESERVE TREES FURTHER THAN 1FT FOR EVERY 1IN. DBH OF TREE FROM DISTURBANCE LINE.

ROCK WALL TO BE DEMOLISHED

LIMIT OF DISTURBANCE

EXISTING TREE TO REMAIN

EXISTING TREE TO BE REMOVED

EXISTING PROPERTY LINE

PROPERTY LINE SETBACK

EXISTING MAJOR CONTOUR ELEVATION

EXISTING MINOR CONTOUR ELEVATION

EXISTING WETLAND BOUNDARY

EXISTING HYDROLOGIC SUB BASIN BOUNDARY

WATER LINE

STORM LINE

SUB-BASIN

EXISTING STONE WALL

SILT FENCE

TREELINE

EXISTING WETLAND FLAG

EXISTING UTILITY POLE

CATCH BASIN

EXISTING TREE TO REMAIN

EXISTING TREE TO BE REMOVED

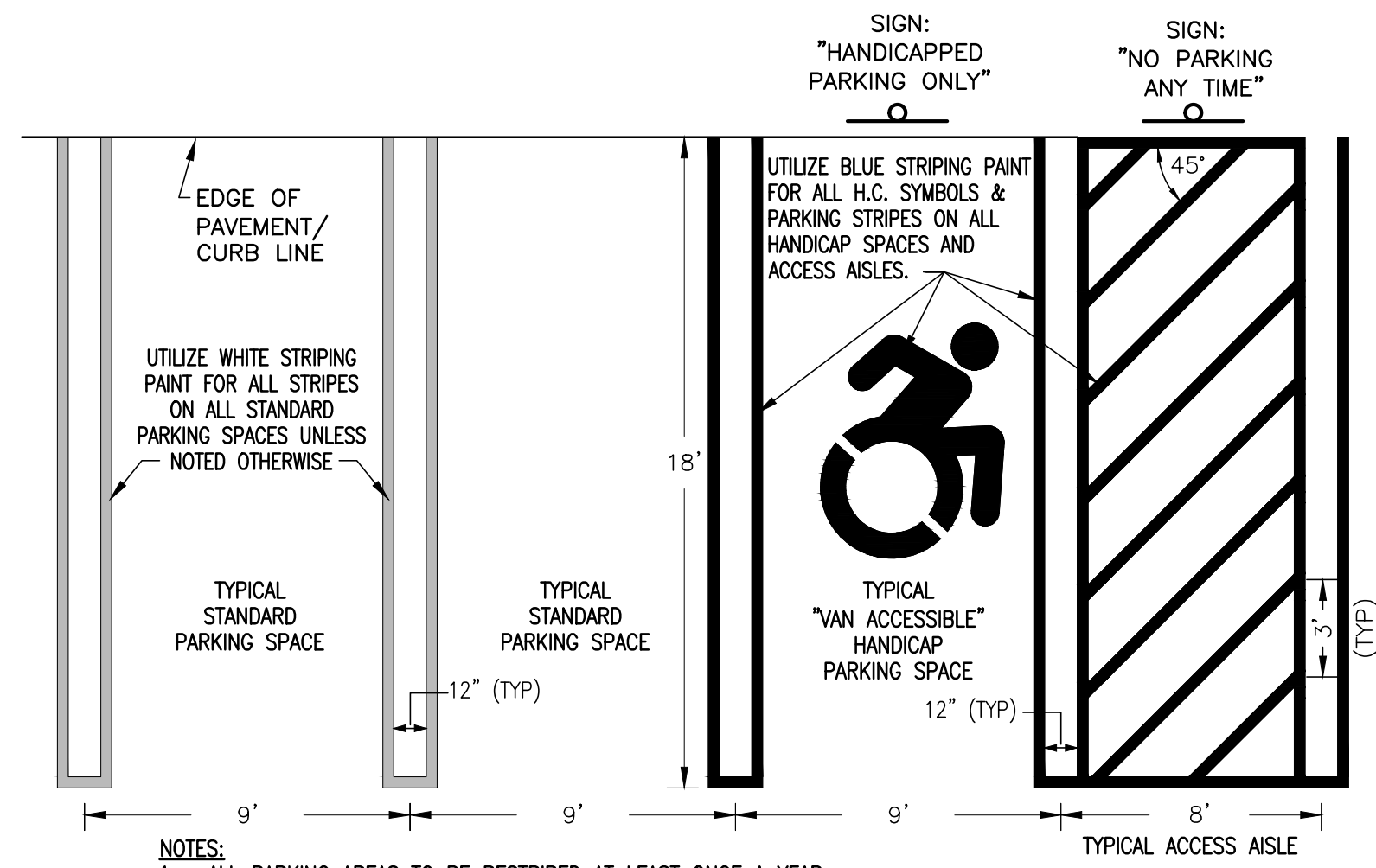
GENERAL LANDSCAPING NOTES:

- ERNST RAIN GARDEN SEED MIX SHALL BE USED ON THE SLOPES OF THE STORMWATER POND.
- WARRANTEE: CONTRACTOR SHALL WARRANTEE ALL PLANT MATERIAL TO REMAIN ALIVE AND BE IN A HEALTHY, VIGOROUS CONDITION FOR A PERIOD OF TWO YEARS AFTER FINAL ACCEPTANCE OF PLANTING WORK. EACH GROWING PERIOD, CONTRACTOR SHALL REPLACE ALL PLANTS THAT ARE MORE THAN 25% DEAD OR, AS DETERMINED BY THE LANDSCAPE ARCHITECT'S INSPECTION MEMO, ARE IN AN UNHEALTHY OR UNSIGHTLY CONDITION. CONTRACTOR SHALL BEAR THE COST OF THE COMPLETE REPLACEMENT(S). REPLACEMENTS SHALL BE OF THE SAME SIZE AND SPECIES AS SPECIFIED ON THE PLANTING LIST. PLANTS WILL BE INSPECTED UPON COMPLETION OF INSTALLATION ONCE A REQUEST FOR INSPECTION HAS BEEN SUBMITTED BY THE CONTRACTOR AND INSPECTED AGAIN THE FOLLOWING FOUR GROWING SEASONS.
- A LANDSCAPE BOND IS REQUIRED TO BE SUBMITTED FOR APPROVAL. PLEASE INCLUDE UNIT PRICES FOR EACH PLANT AND GROUNDCOVER INSTALLATION. THE UNIT PRICE SHOULD INCLUDE THE COST OF THE PLANT, A TWO-YEAR WARRANTY, AND LABOR TO INSTALL THE PLANT. A BOND WILL BE HELD FOR TWO YEARS TO HELP ENSURE PLANTS LIVE. A PARTIAL RELEASE OF THE LANDSCAPE BOND CAN BE REQUESTED AFTER ONE YEAR, AND WILL BE RECOMMENDED FOR APPROVAL, IF MORE THAN NINETY PERCENT OF PLANTS, INCLUDING GROUND COVERS, ARE IN GOOD HEALTH AT THE TIME OF INSPECTION. A FULL RELEASE OF THE BOND AFTER TWO YEARS WILL BE RECOMMENDED FOR APPROVAL IF NINETY PERCENT OF PLANTS ARE IN GOOD HEALTH AT THE TIME OF INSPECTION. IF MORE THAN NINETY PERCENT OF PLANTS ARE NOT IN GOOD HEALTH, RECOMMENDATION FOR RELEASE OF THE BOND CANNOT BE MADE. PLANTS WILL NEED TO BE REPLACED AND MUST LIVE FOR ANOTHER YEAR BEFORE THE BOND CAN BE RECOMMENDED FOR RELEASE. IT IS IMPORTANT FOR THE CONTRACTOR TO INSTALL SOIL AS DEFINED ON THE DRAWINGS AND WATER PLANTS APPROPRIATELY SO THAT PLANTS DO NOT NEED TO BE REPLACED SEVERAL TIMES OVER THE COURSE OF THE BOND. POOR SOILS CAUSE PLANTS TO DIE, THEN REPLACEMENT PLANTS TO DIE, ETC.

N/F DEPOT PARTNERS, L.P. LIBER 4294 PAGE 79

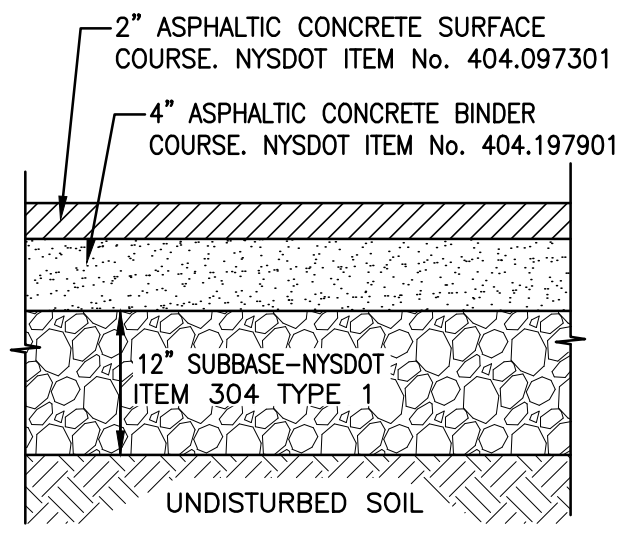
File Name: F:\2019\19-049 Jeanne Drive Site Plan\C-701.dwg (Layout: C-701)  
Date: Fri, Apr 21, 2023 - 10:03 AM (Name: vmb)



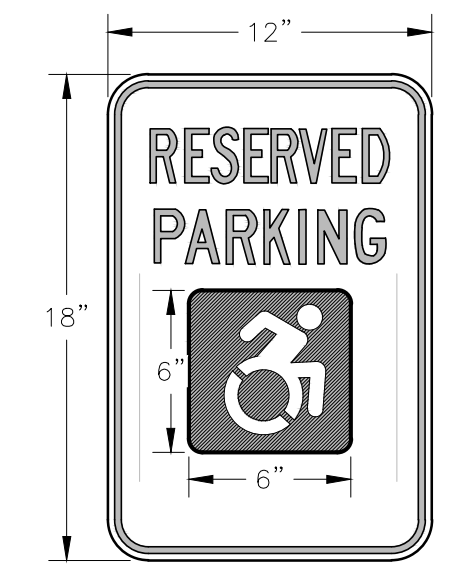


**1 VAN ACCESSIBLE HANDICAP PARKING - STRIPING DETAIL**  
N.T.S.

NOTES:  
1. ALL PARKING AREAS TO BE RESTRIPTED AT LEAST ONCE A YEAR.  
2. ALL STRIPING TO BE 4" WIDE UNLESS NOTED OTHERWISE.  
3. SEE SIGN DETAILS FOR SIGN MOUNTING AND SIGN HEIGHT REQUIREMENTS.  
4. AT LEAST 1 (ONE) SPACE OF EVERY 8 (EIGHT) REQUIRED HANDICAP SPACES SHALL BE "VAN ACCESSIBLE", WITH A MINIMUM REQUIREMENT OF 1 (ONE) "VAN ACCESSIBLE" SPACE, IF LESS THAN 8 HANDICAP SPACES ARE REQUIRED.



**2 HEAVY DUTY ASPHALTIC PAVEMENT DETAIL**  
N.T.S.

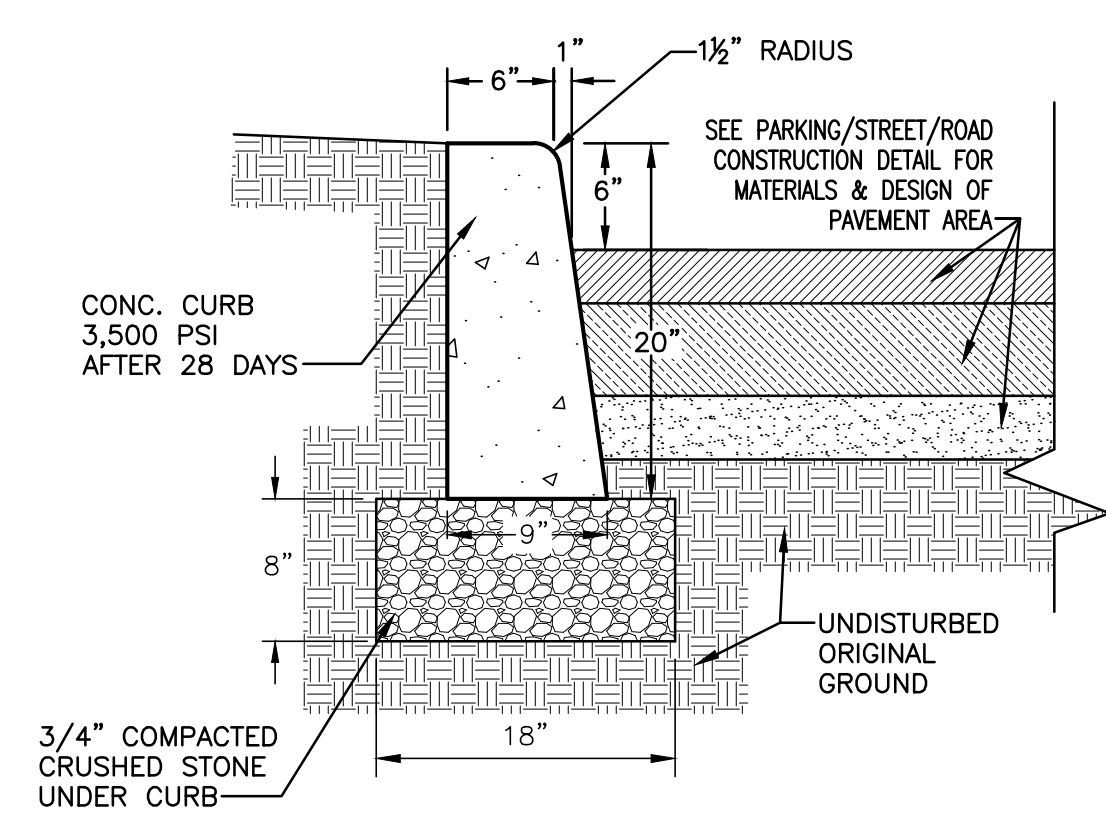


**3 HANDICAP RESERVED PARKING SIGN**  
N.T.S.

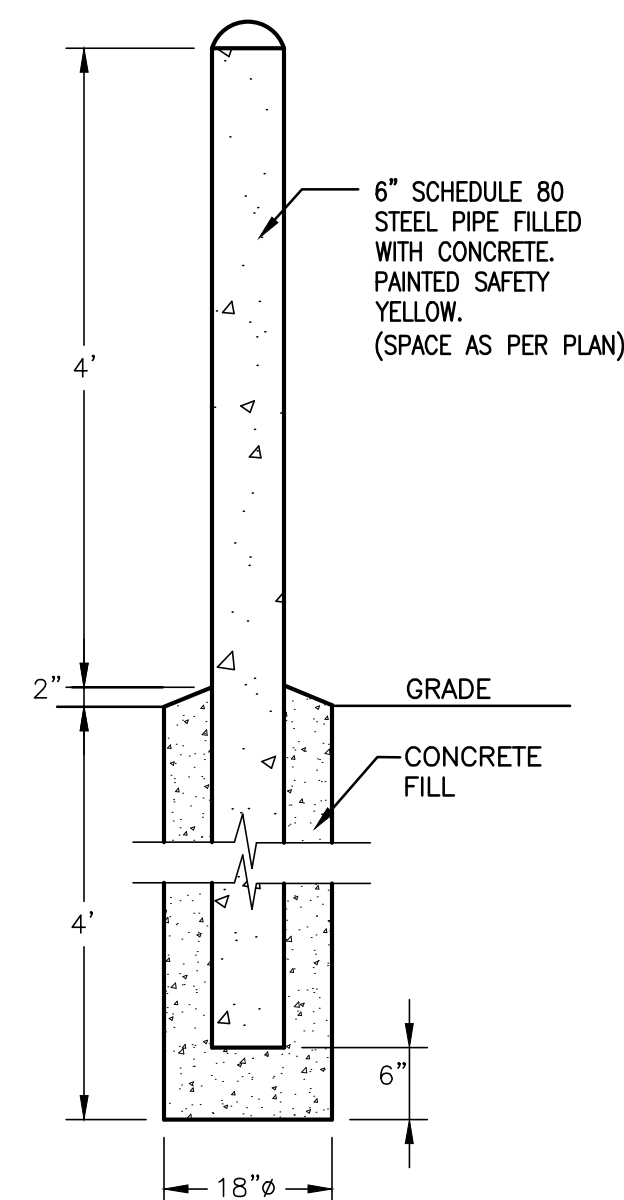
LETTERING AND BORDER: GREEN  
SYMBOL: WHITE WITH BLUE FIELD  
SIGN BACKGROUND: WHITE



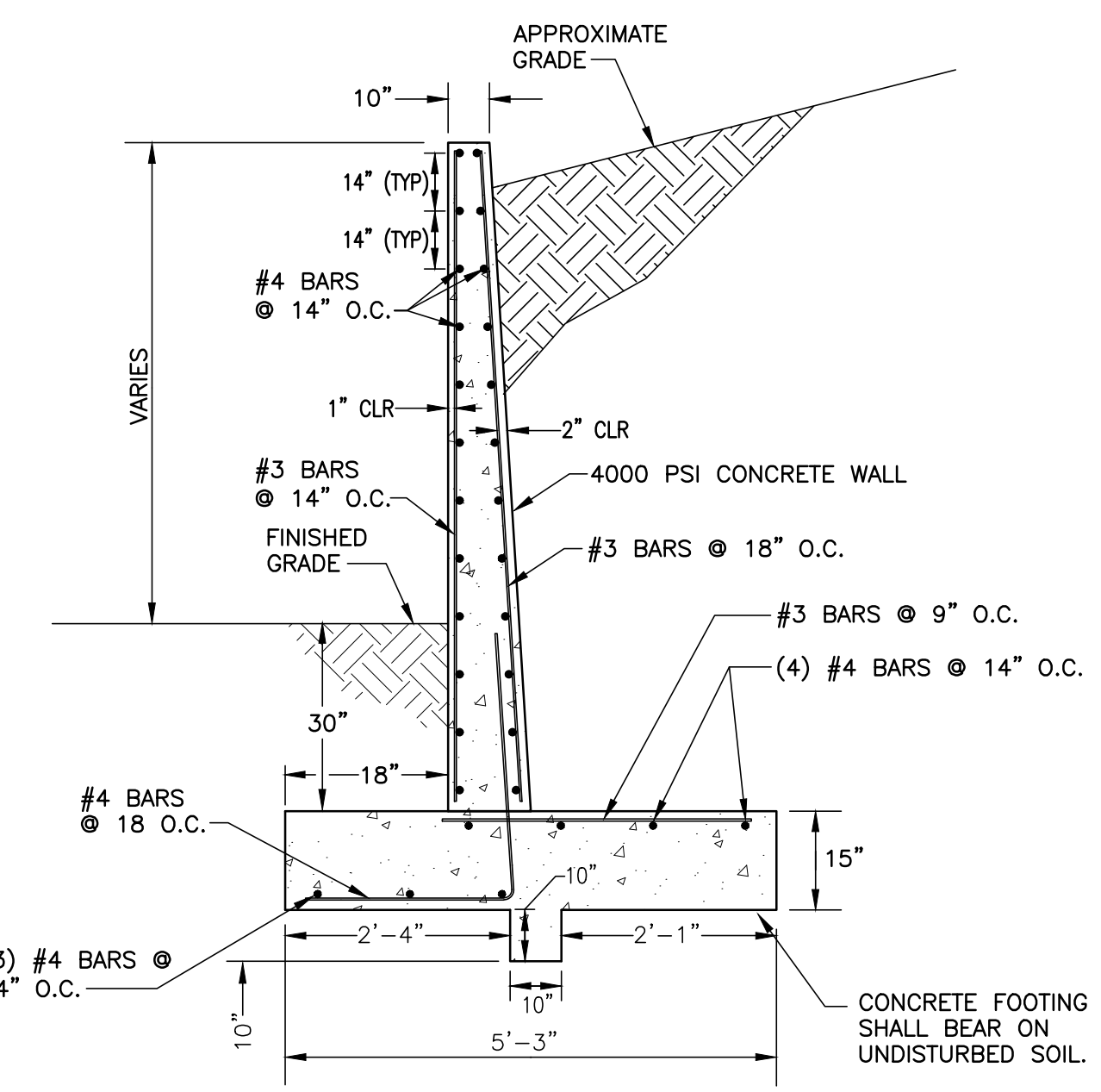
**4 NO PARKING ANYTIME SIGN**  
N.T.S.



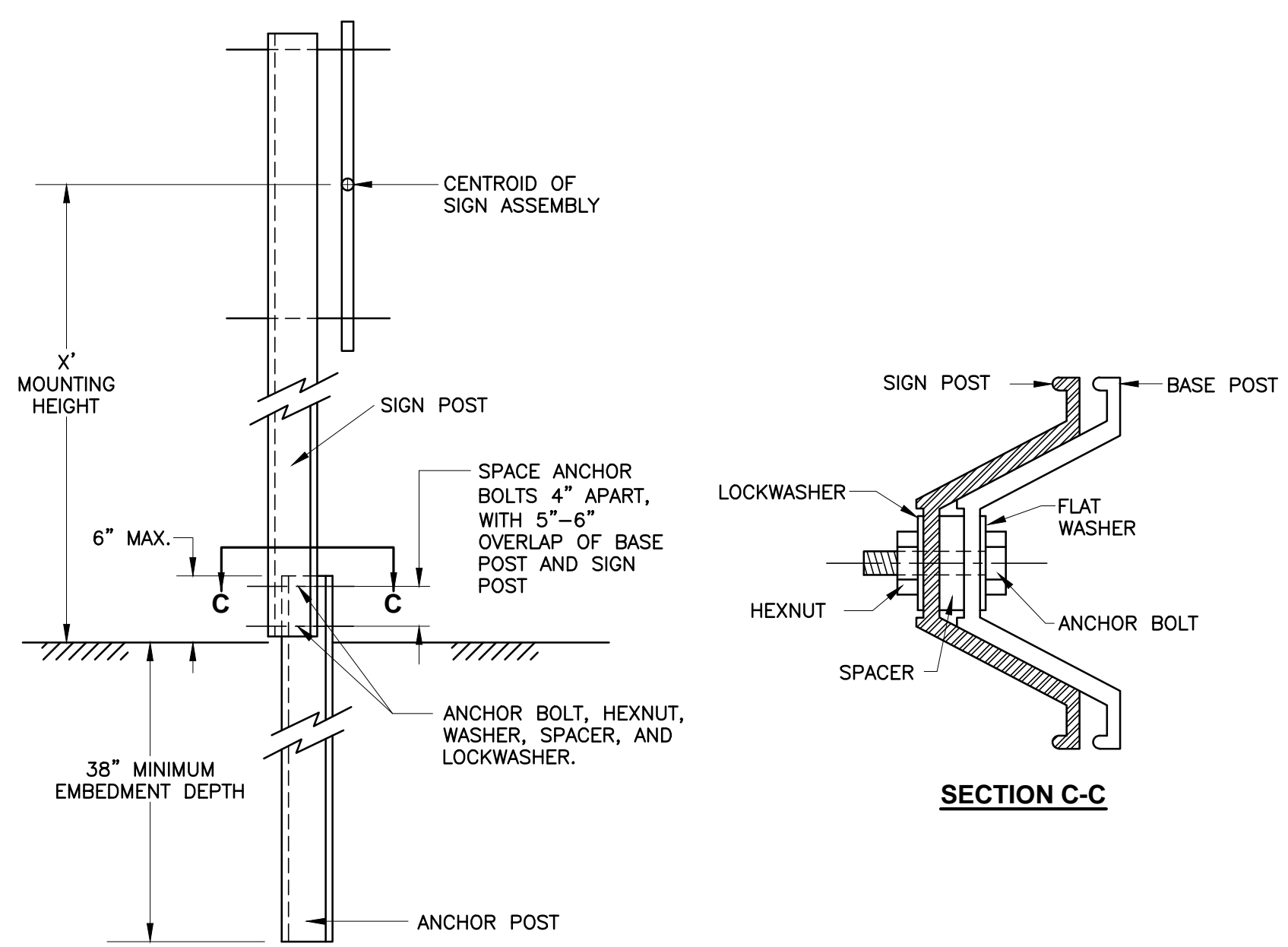
**5 CONCRETE CURB DETAIL**  
N.T.S.



**6 BOLLARD POST DETAIL**  
N.T.S.

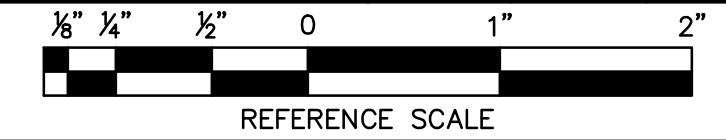


**7 CONCRETE RETAINING WALL DETAIL**  
N.T.S.



**8 BREAKAWAY STYLE SIGN POST DETAIL**  
N.T.S.

| REV # | DATE    | REMARKS:                | ISSUE # | DATE | ISSUED FOR: |
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www.feltp.com

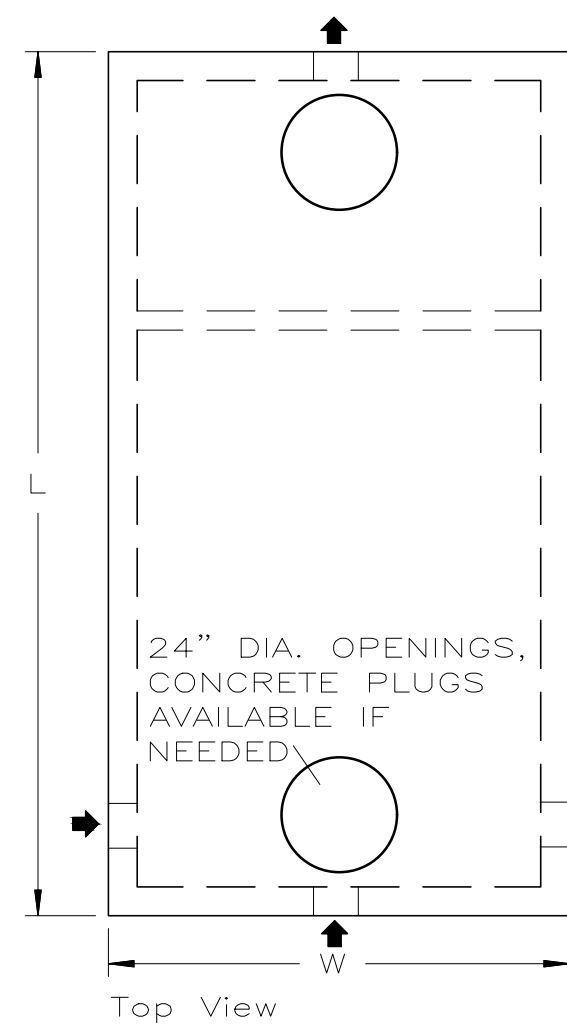
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181 Church St., Suite 100, Poughkeepsie, NY 12601  
t 845-454-9704 fx 855-320-8735

|                  |  |                 |  |                      |  |                       |  |                  |  |
|------------------|--|-----------------|--|----------------------|--|-----------------------|--|------------------|--|
| DESIGNED BY: JB  |  | DRAWN BY: VMB   |  | APPROVED BY: PM: RDF |  | APPROVED BY: PIC: MDF |  | DRAWING #: C-901 |  |
| DATE: 11/01/2022 |  | SCALE: AS SHOWN |  | FE PROJECT #:        |  | 19-049                |  | PAGE 8 OF 10     |  |

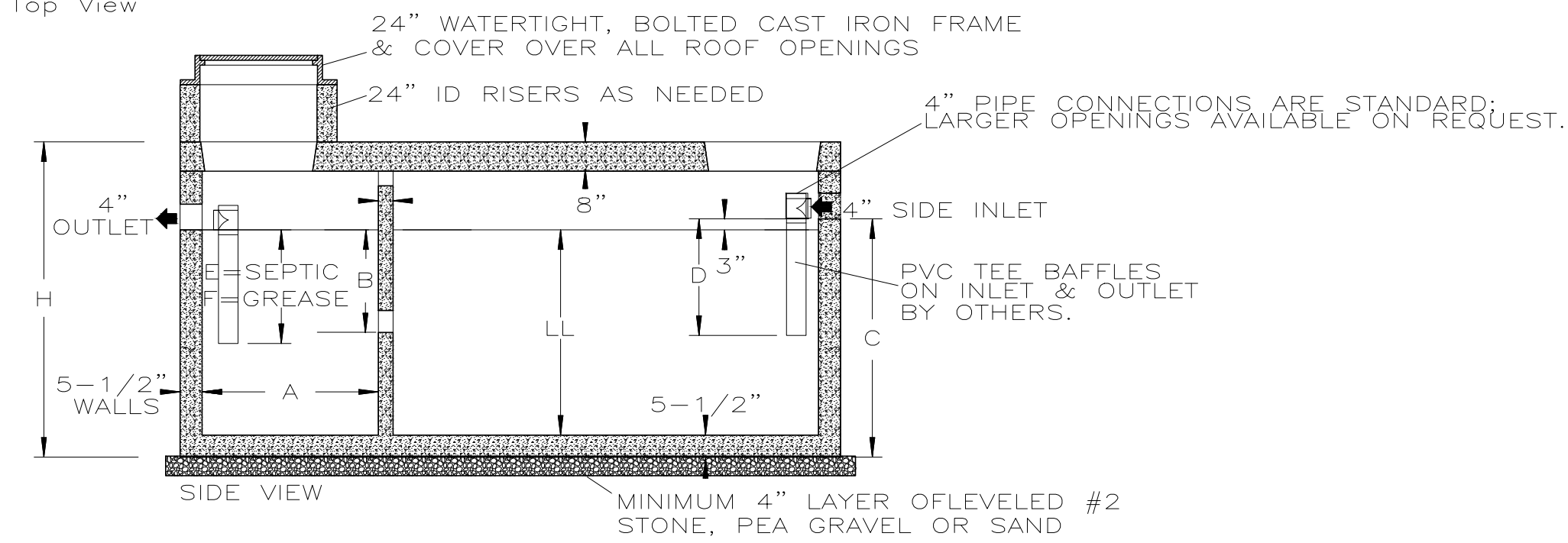
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| GALLONS | L      | W      | H     | LL  | A   | B   | C   | D   | E   | F   |
|---------|--------|--------|-------|-----|-----|-----|-----|-----|-----|-----|
| 1,000   | 10'-9" | 5'-11" | 4'-8" | 35" | 38" | 16" | 43" | 21" | 18" | 23" |

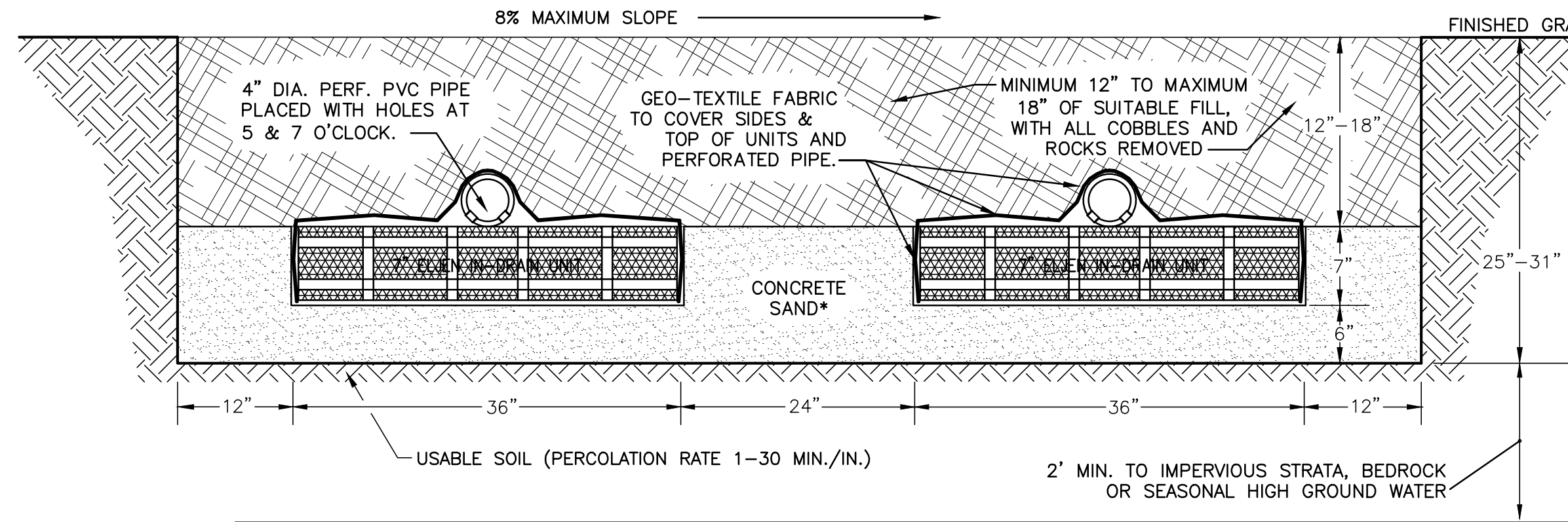
- NOTES:  
 1. EFFLUENT OUTLET FILTERS ARE AVAILABLE AS WELL AS HIGH LEVEL ALARMS.  
 2. GAS DEFLECTORS ARE AVAILABLE FOR 4" OUTLET PIPES.  
 3. TANK DESIGNS BASED ON THE 2014 NYSDEC DESIGN STANDARDS.  
 4. 1,000, 1,250, AND 1,500 TANKS ARE TWO-PIECE DESIGN WITH CENTER SEAM.



| SPECIFICATIONS  | PRECAST TRAFFIC DUTY TANKS<br>1,000 GALLON<br>SEPTIC TANK  |
|---|--|
| CONCRETE MIN. STRENGTH: 4,000 PSI AT 28 DAYS<br>REINFORCEMENT: #4 & #5 REBAR / ASTM A615 AIR<br>ENTRAINMENT: 6%<br>CONSTRUCTION JOINT: BUTYL RUBBER SEALANT PIPE<br>CONNECTION: POLYLOK SEAL OR AS NEEDED LOAD<br>RATING: HS20-44 + 30% / ASTM C857 | WOODARD'S CONCRETE PRODUCTS, INC.<br>629 LYBOLT ROAD, BULLVILLE, NY 10915<br>(845) 361-3471 / FAX 361-1050 |
|   | PAGE 4A 7/28/20  |

www.woodardsconcrete.com

**1 1,000 GALLON SEPTIC TANK**  
N.T.S.



\*NOTE: "CONCRETE SAND" SHALL BE ASTM C33 SAND WITH <10% PASSING #100 SIEVE AND LESS THAN 5% PASSING #200 SIEVE WITH COEFFICIENT OF PERMEABILITY >5 FEET

**2 ELJEN IN-DRAIN ABSORPTION CROSS SECTION**  
N.T.S.

PERC TEST 1

| DEPTH 24" | TOTAL (MIN/MIN) |
|-----------|-----------------|
| RUN 1     | 00:18:02        |
| RUN 2     | 00:22:31        |
| RUN 3     | 00:24:26        |
| RUN 4     | 00:25:26        |
| RUN 5     | 00:26:27        |

DATE PERFORMED: 2-8-2023  
PERFORMED BY: FELLENER ENGINEERING LLP

PERC TEST 2

| DEPTH 24" | TOTAL (MIN/MIN) |
|-----------|-----------------|
| RUN 1     | 00:26:36        |
| RUN 2     | 00:32:40        |
| RUN 3     | 00:38:42        |
| RUN 4     | 00:40:58        |
| RUN 5     | 00:42:20        |

DATE PERFORMED: 2-8-2023  
PERFORMED BY: FELLENER ENGINEERING LLP

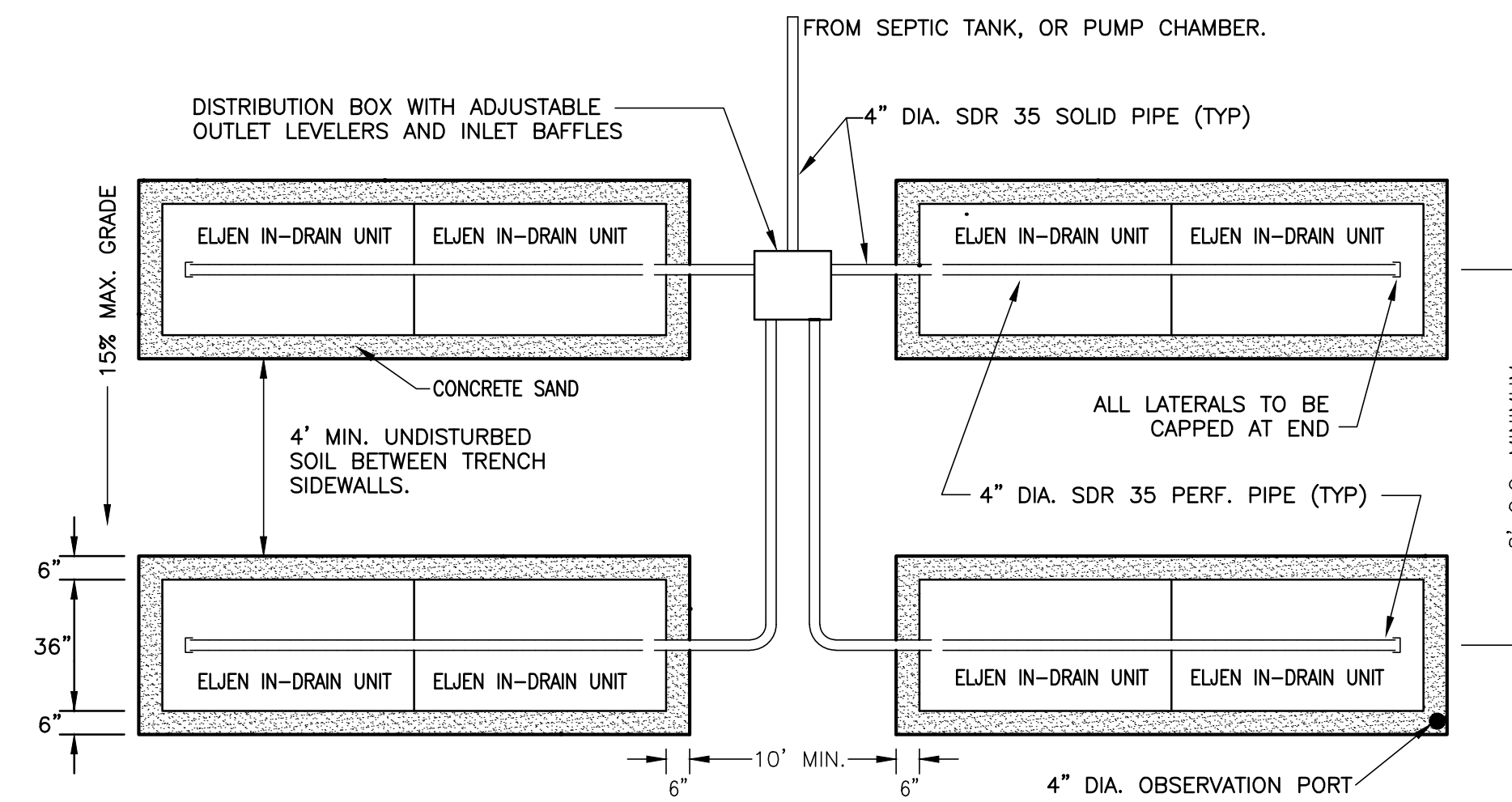
| DEEP TEST 1 | DEPTH=8" | DEPTH (IN.) | DEEP TEST 2 | DEPTH=8" |
|-------------|----------|-------------|-------------|----------|
|             | TOP SOIL | 6           |             | TOP SOIL |
|             |          | 12          |             |          |
|             |          | 18          |             |          |
|             |          | 24          |             |          |
|             |          | 30          |             |          |
|             |          | 36          |             |          |
|             |          | 42          |             |          |
|             |          | 48          |             |          |
|             |          | 54          |             |          |
|             |          | 60          |             |          |
|             |          | 66          |             |          |
|             |          | 72          |             |          |
|             |          | 78          |             |          |
|             |          | 84          |             |          |
|             |          | 90          |             |          |

TRACE MOTTLING @ 4' & 8' 6"-12" COBBLES THROUGHOUT DARK BROWN CLAY LOAM. NO WATER. NO SEEPAGE. NO LEDGE.

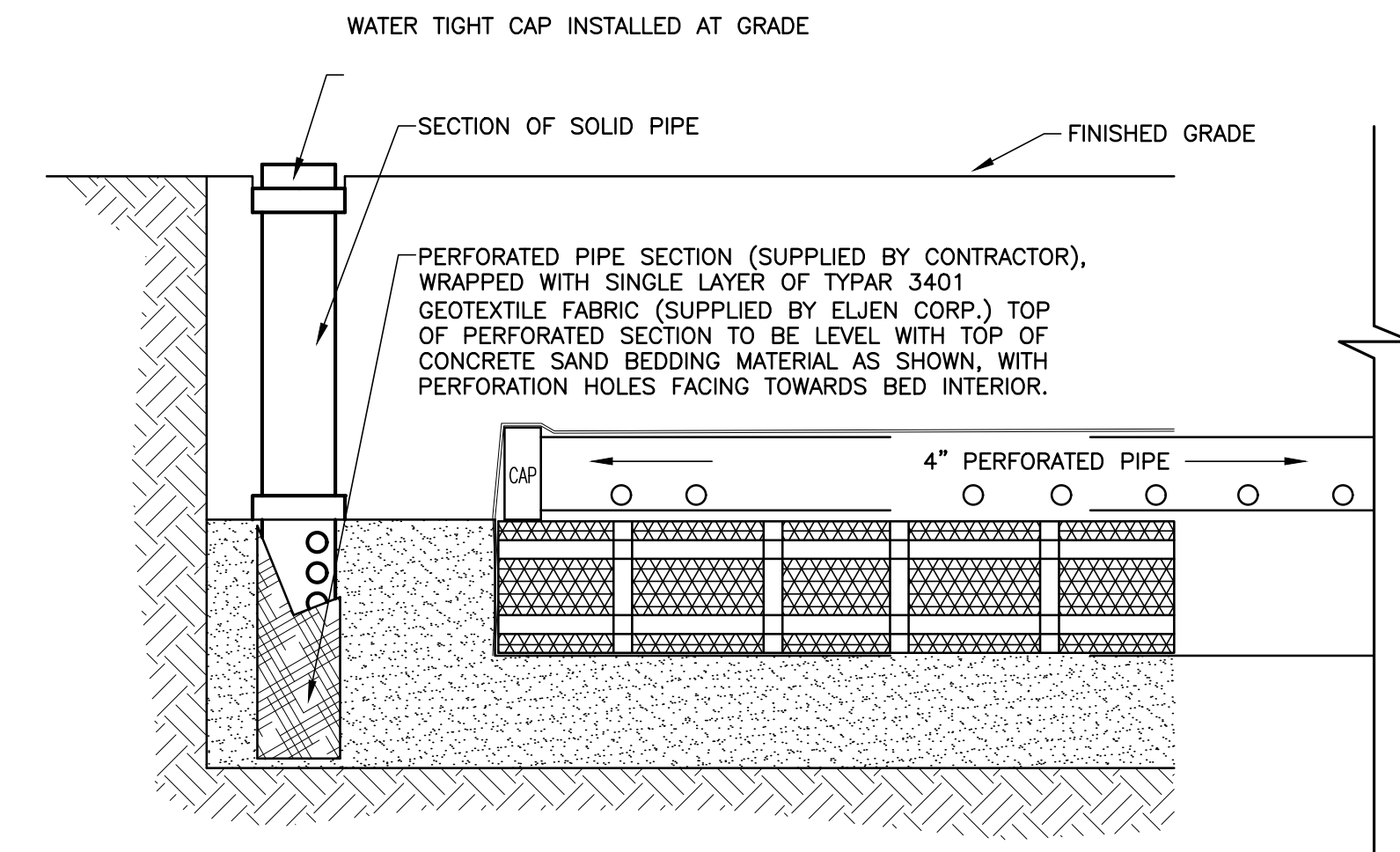
TRACE MOTTLING @ 6' 6"-8" COBBLES THROUGHOUT DARK BROWN GRAVELLY LOAM.

**SEPTIC DESIGN DATA TABLE - ELJEN "IN DRAIN" SYSTEM**

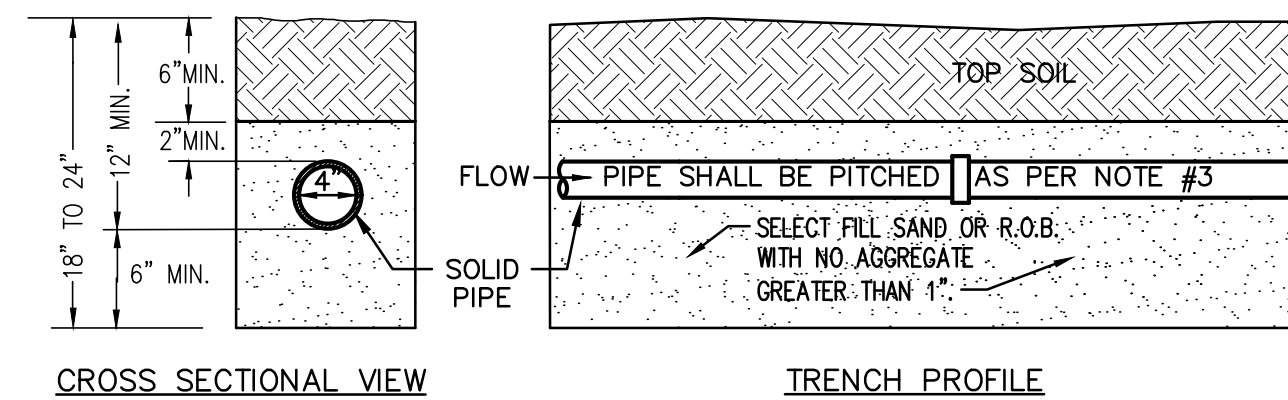
| RESULTS | DESIGN RATE (MIN/IN) | REQUIRED LINEAL FEET OF STANDARD TRENCH REQUIRED FOR 16 EMPLOYEE WAREHOUSE (240 GPD,TOTAL) | DESIGN CALCULATIONS & QTY'S FOR SYSTEM (240 LF / 3 (ELJEN SYTEM MULTIPLIER)=80 LF ELJEN UNITS) | TOTAL UNITS REQUIRED:  |
|---------|----------------------|--|--|------------------------|
| #1      | #2                   |  | # LINES LINE LENGTH TOTAL LENGTH SYSTEM PROVIDED   |                        |
| 26:27   | 42:20                | 31-45  | 240 LF STD TRENCH 4 X 20' = 80'  | (20) "B43" ELJEN UNITS |



**3 ELJEN ABSORPTION TRENCH CONFIGURATION**  
N.T.S.

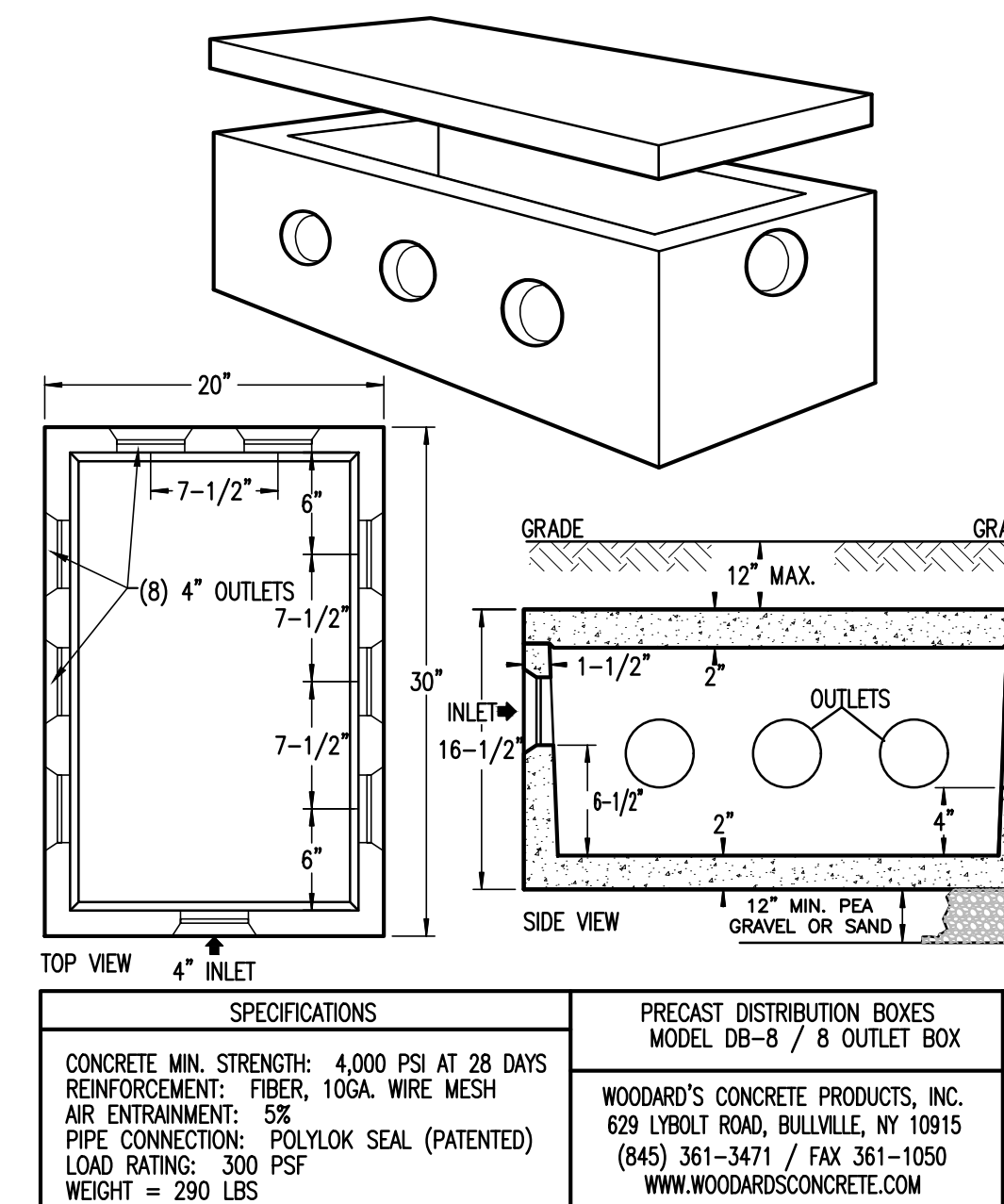


**4 OBSERVATION PORT INSTALLATION DETAIL**  
N.T.S.



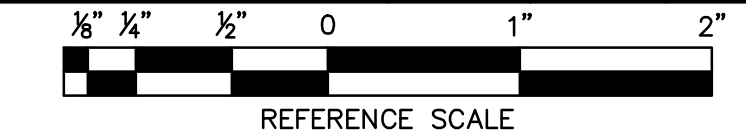
- NOTES:  
 1. TRENCH RUN FROM HOUSE TO SEPTIC TANK AND DISTRIBUTION BOX OR PUMP TANK.  
 2. PIPING FROM HOUSE TO SEPTIC TANK, AND FROM SEPTIC TANK TO DISTRIBUTION BOX OR PUMP TANK SHALL BE 4" PVC SOLID PIPING HAVING A MINIMUM 3000# CRUSH RATING.  
 3. PIPING FROM HOUSE TO SEPTIC TANK SHALL A MINIMUM PITCH OF 1/4" PER FOOT. PIPING FROM SEPTIC TANK TO DB BOX OR PUMP CHAMBER SHALL HAVE MINIMUM PITCH OF 1/8" PER FOOT.

**5 SOLID PIPE TRENCH DETAIL FOR SEPTIC SYSTEMS**  
N.T.S.



**6 DISTRIBUTION BOX DETAIL - DB-8**  
N.T.S.

| REV # | DATE    | REMARKS:                | ISSUE # | DATE | ISSUED FOR: |
|-------|---------|-------------------------|---------|------|-------------|
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| 1     | 1/18/23 | REVISED PER PB COMMENTS |         |      |             |



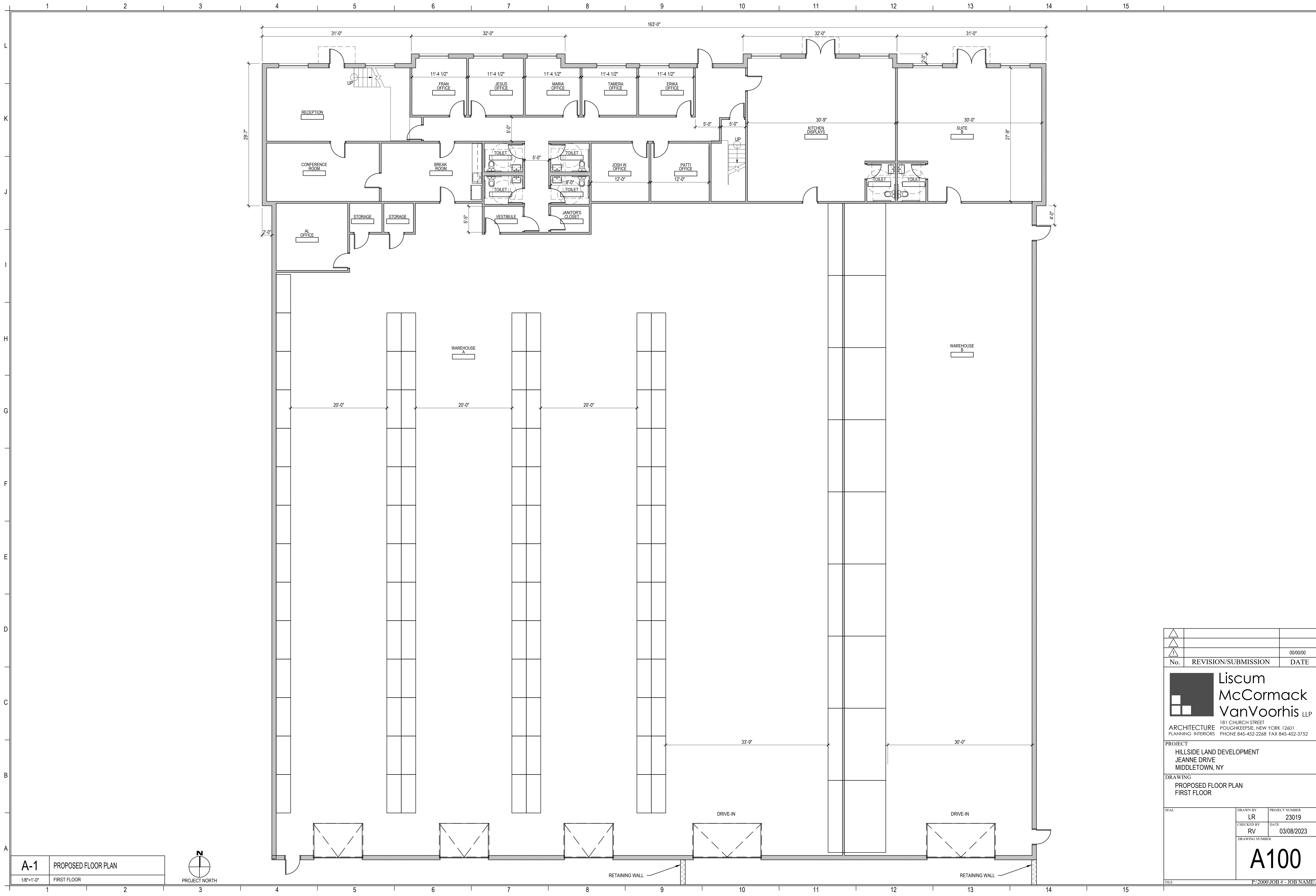
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| STAMP:   | PROJECT TITLE:<br><b>JEANNE DRIVE<br/>SITE PLAN</b><br>SECTION 34, BLOCK 2, LOT 66.    |
| DESIGNED BY: JB  | DRAWN BY: VMB  |
| APPROVED BY: PM: RDF   | APPROVED BY: PIC: MDF  |
| DATE: 11/01/2022   | SCALE: AS SHOWN  |
|  | FE PROJECT #: 19-049   |
|  | DRAWING #: <b>C-902</b>  |
|  | PAGE 9 OF 10   |

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**A-1** PROPOSED FLOOR PLAN  
1/8"=1'-0" FIRST FLOOR



|     |  |                     |          |
|-----|--|---------------------|----------|
| No. |  | REVISION/SUBMISSION | DATE     |
|     |  |                     | 00/00/00 |

**Liscum McCormack VanVoorhis LLP**  
 ARCHITECTURE 181 CHURCH STREET  
 PLANNING INTERIORS Poughkeepsie, New York 12601  
 PHONE 845-452-2268 FAX 845-452-3752

PROJECT  
 HILLSIDE LAND DEVELOPMENT  
 JEANNE DRIVE  
 MIDDLETOWN, NY

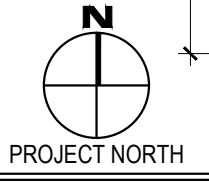
DRAWING  
 PROPOSED FLOOR PLAN  
 FIRST FLOOR

|      |                               |                         |
|------|-------------------------------|-------------------------|
| SEAL | DRAWN BY<br>LR                | PROJECT NUMBER<br>23019 |
|      | CHECKED BY<br>RV              | DATE<br>03/08/2023      |
|      | DRAWING NUMBER<br><b>A100</b> |                         |

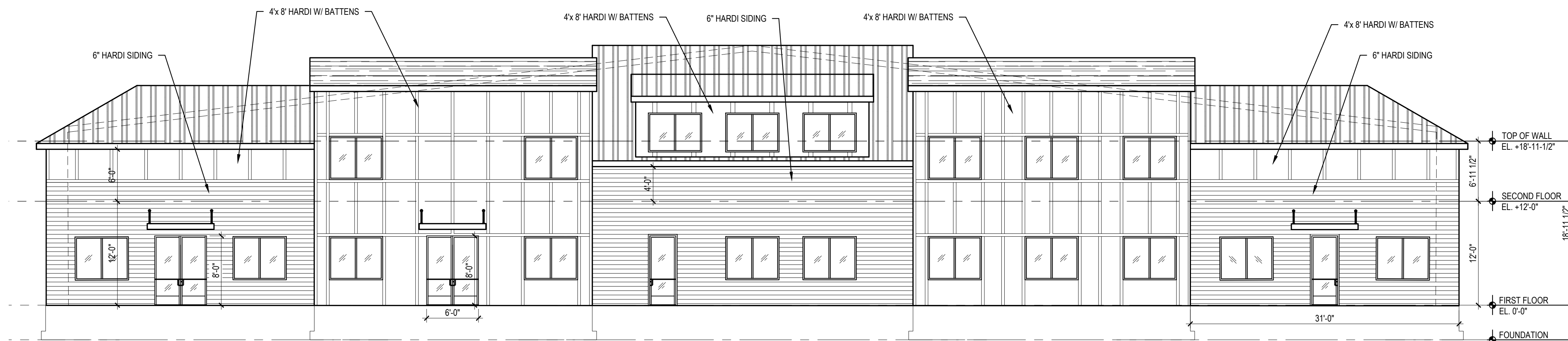
FILE P:\2000\JOB # - JOB NAME



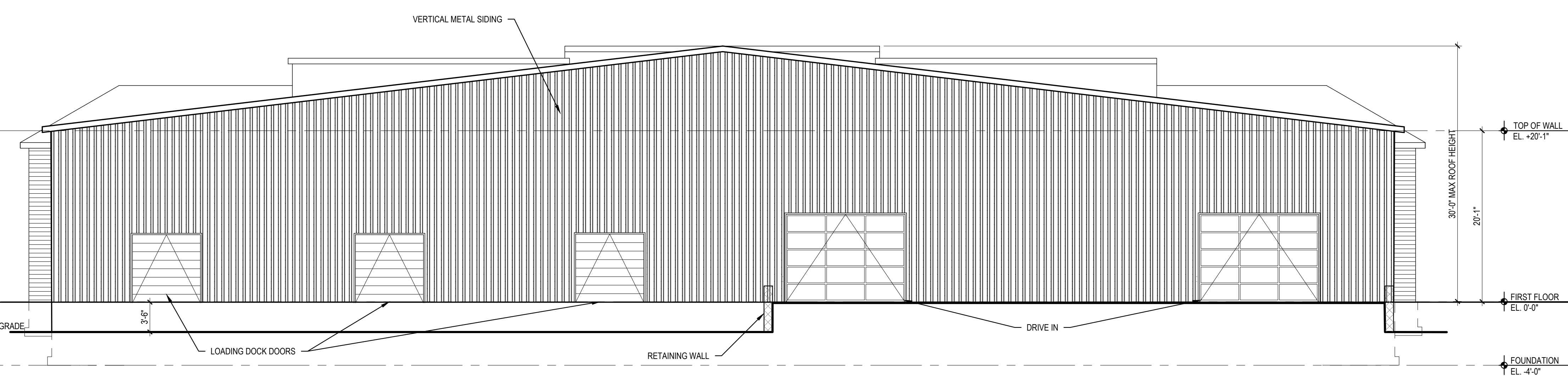
**A-1** PROPOSED FLOOR PLAN  
1/8"=1'-0" SECOND FLOOR



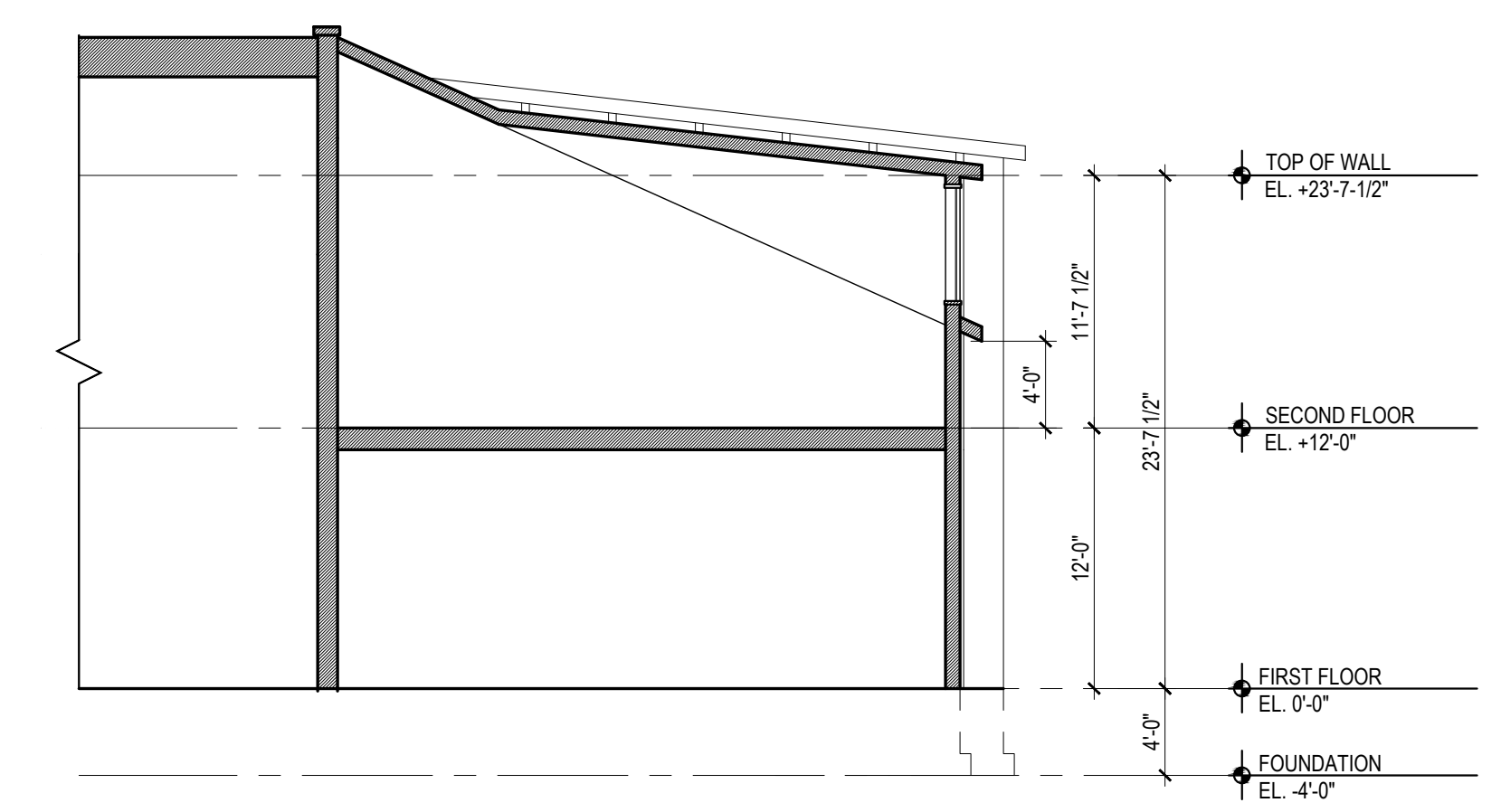
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| No.  | REVISION/SUBMISSION           | DATE                    |
|  |                               |                         |
| <p><b>Liscum McCormack VanVoorhis LLP</b><br/>181 CHURCH STREET<br/>POUGHKEEPSIE, NEW YORK 12601<br/>ARCHITECTURE PLANNING INTERIORS PHONE 845-452-2268 FAX 845-452-3752</p> |                               |                         |
| <p>PROJECT<br/>HILLSIDE LAND DEVELOPMENT<br/>JEANNE DRIVE<br/>MIDDLETOWN, NY</p>   |                               |                         |
| <p>DRAWING<br/>PROPOSED FLOOR PLAN<br/>SECOND FLOOR</p>  |                               |                         |
| SEAL   | DRAWN BY<br>LR                | PROJECT NUMBER<br>23019 |
|  | CHECKED BY<br>RV              | DATE<br>03/08/2023      |
|  | DRAWING NUMBER<br><b>A101</b> |                         |
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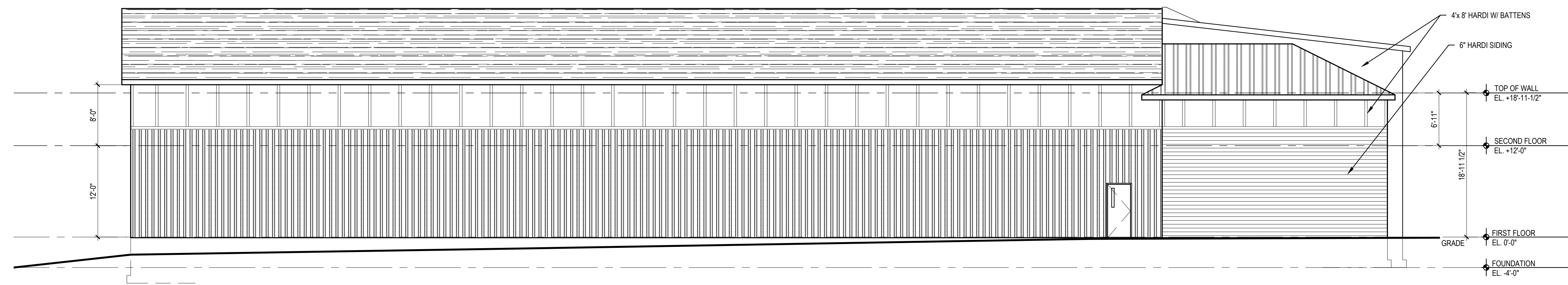
**H-1** EXTERIOR ELEVATION  
1/8"=1'-0" FRONT VIEW



**G-1** EXTERIOR ELEVATION  
1/8"=1'-0" REAR VIEW



**G-13** BUILDING SECTION  
1/8"=1'-0" SECTION THRU DORMER



**A-1** EXTERIOR ELEVATION  
1/8"=1'-0"

|     |                     |          |
|-----|---------------------|----------|
| No. | REVISION/SUBMISSION | DATE     |
|     |                     | 00/00/00 |

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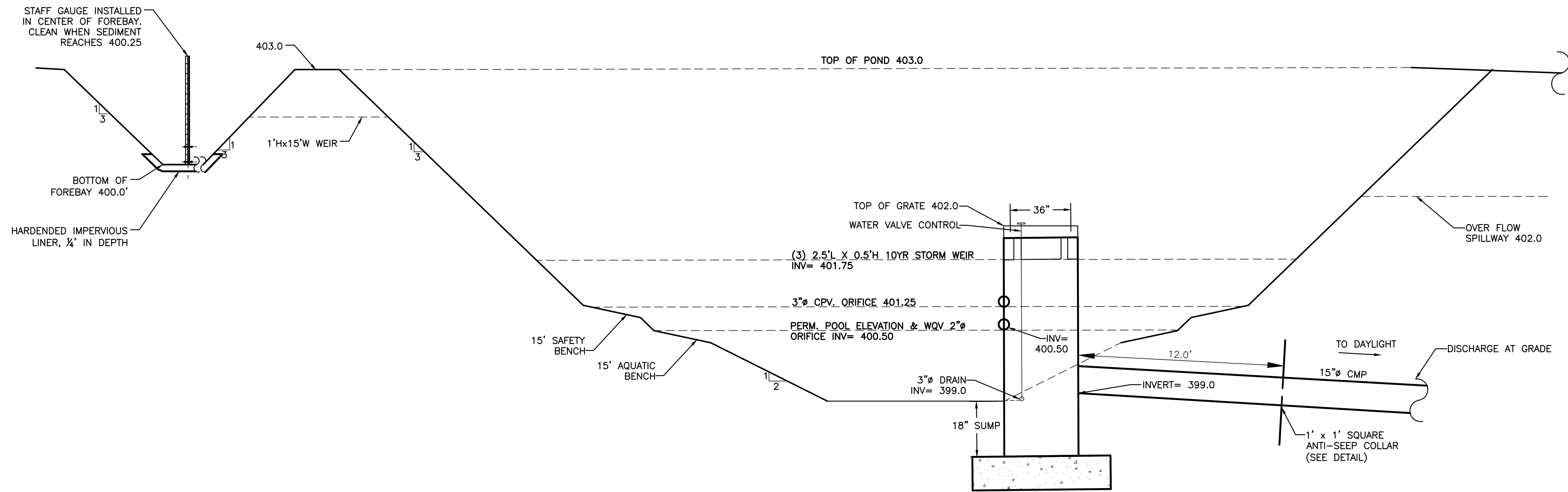
PROJECT  
HILLSIDE LAND DEVELOPMENT  
JEANNE DRIVE  
MIDDLETOWN, NY

DRAWING  
EXTERIOR ELEVATIONS & BLDG SECTION

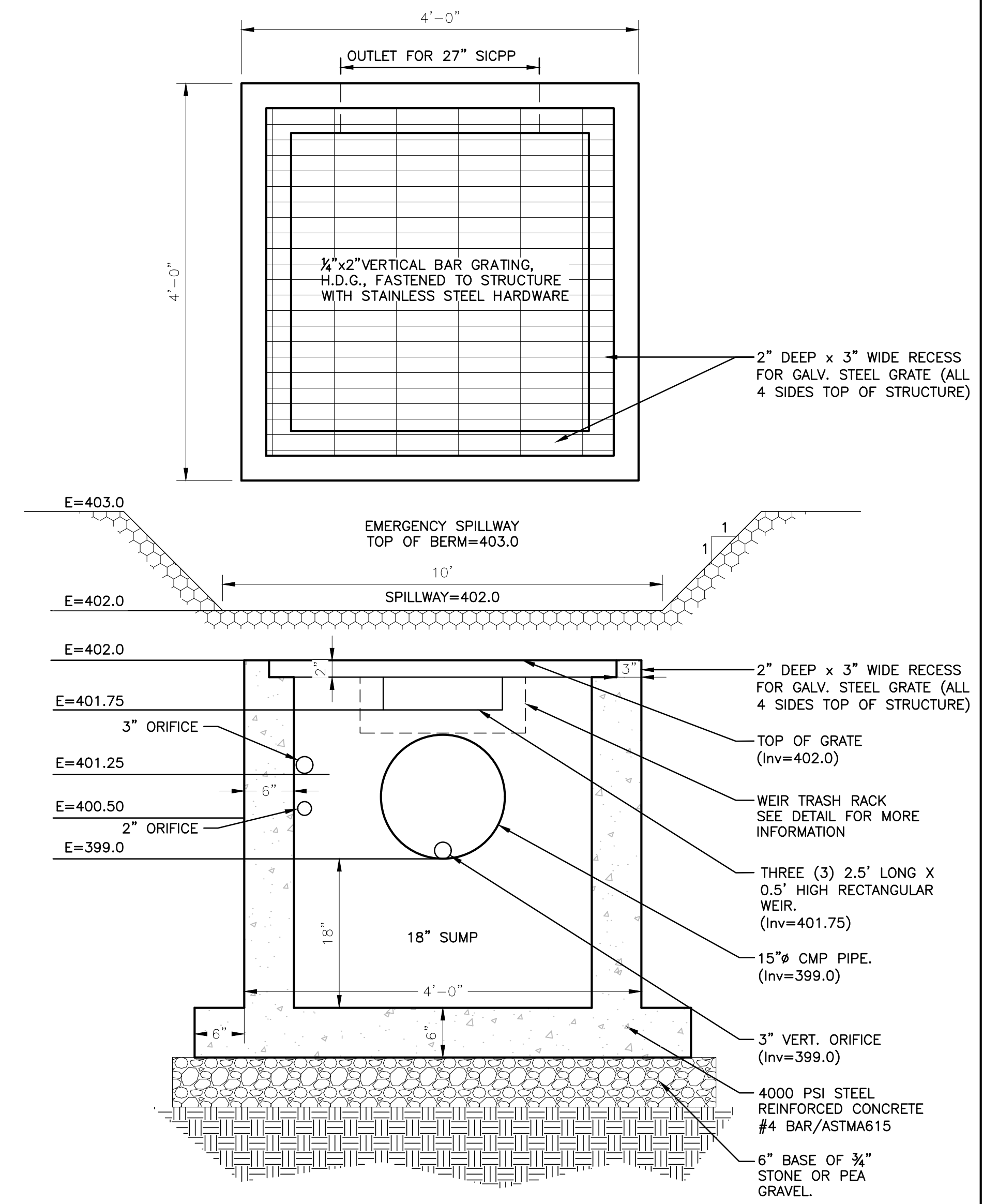
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|      | CHECKED BY<br>RV              | DATE<br>03/08/2023      |
|      | DRAWING NUMBER<br><b>A200</b> |                         |

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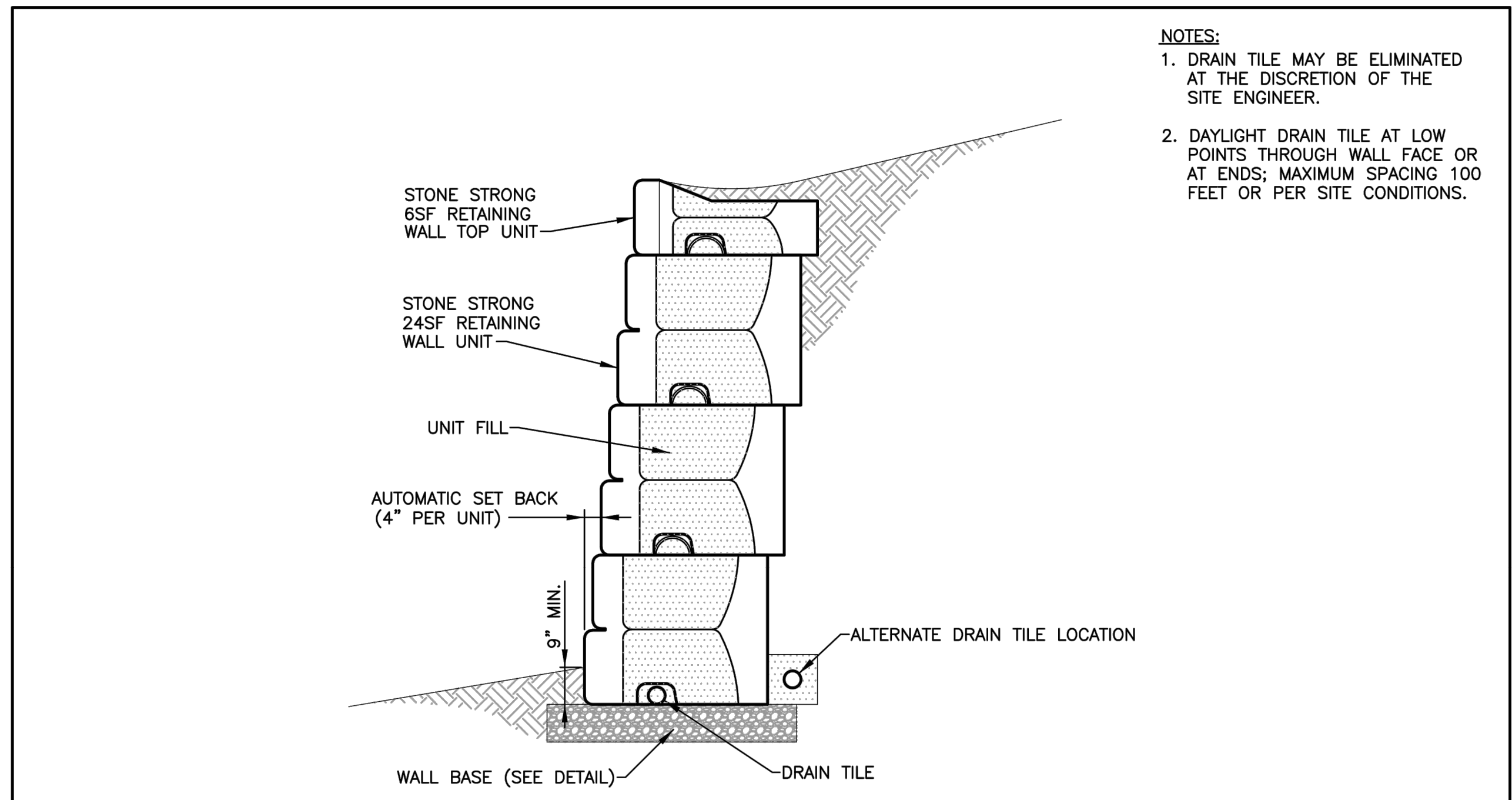




**1 DETENTION POND**  
N.T.S.



**2 DETENTION POND OUTLET STRUCTURE**  
N.T.S.



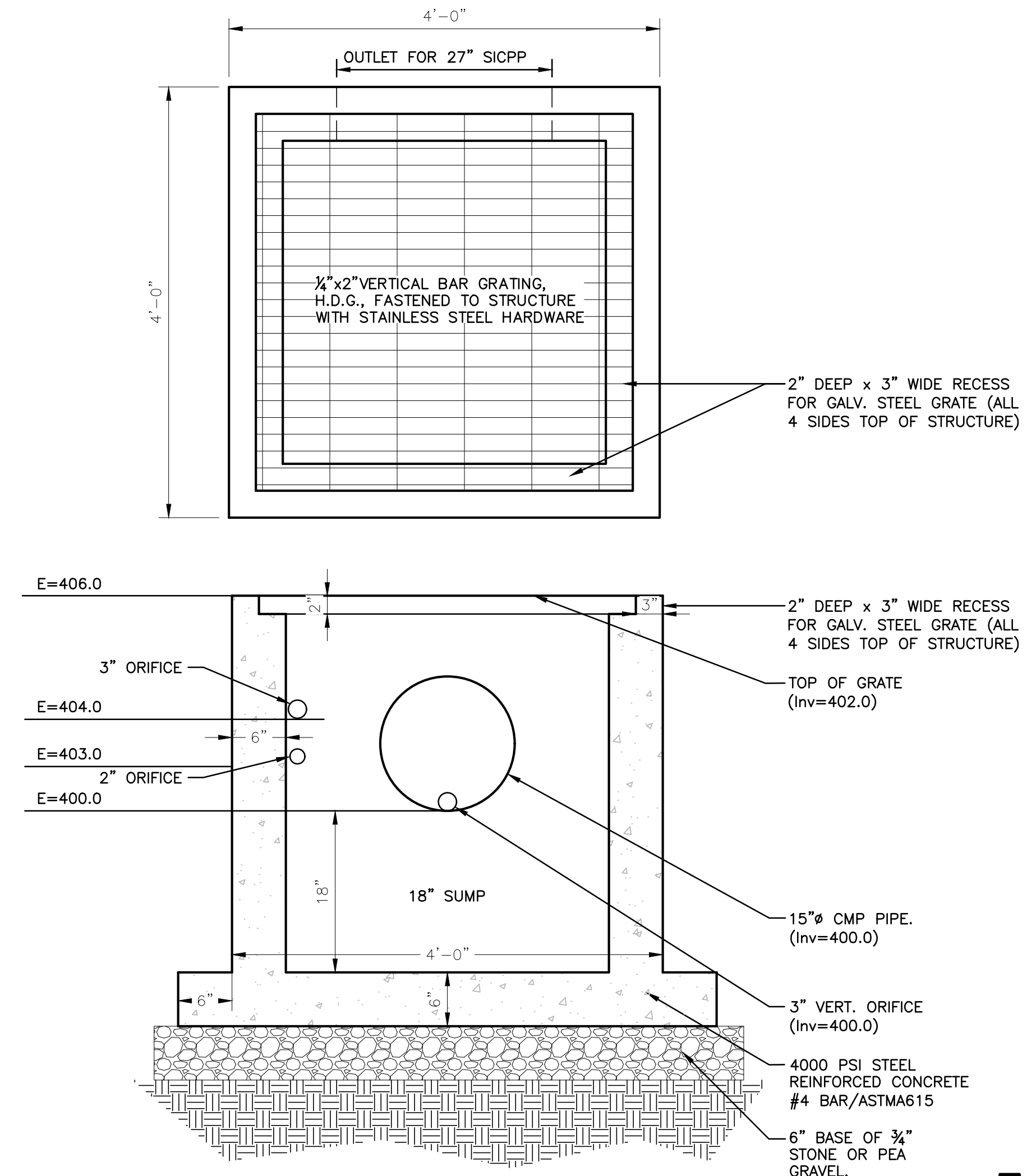
**3 GRAVITY WALL CROSS SECTION**  
NOT TO SCALE

**DISCLAIMER:**  
These typical details are preliminary and conceptual in nature. They are provided for general information purposes only. Anyone making use of these details and related information does so at their own risk and assumes all liability for such use. Site specific design should be performed by a licensed Professional Engineer based on actual site conditions, materials, and local practices.  
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PROJECT: CROSS SECTIONS  
STONE STRONG SYSTEMS

DATE: 6/29/18 FILE: 01\_24sf.XSec.Grav



**4 CULTEC CHAMBER OUTLET STRUCTURE**  
N.T.S.

|       |         |                         |         |      |             |
|-------|---------|-------------------------|---------|------|-------------|
| REV # | DATE    | REMARKS:                | ISSUE # | DATE | ISSUED FOR: |
| 2     | 4/21/23 | REVISED PER PB COMMENTS |         |      |             |
| 1     | 1/18/23 | REVISED PER PB COMMENTS |         |      |             |

1/8" 1/4" 1/2" 0 1" 2"  
REFERENCE SCALE

UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A LICENSED PROFESSIONAL ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2 OF THE N.Y. STATE EDUCATION LAW.

**FELLENZER ENGINEERING LLP**  
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STAMP: PROJECT TITLE: **JEANNE DRIVE SITE PLAN**  
SECTION 34, BLOCK 2, LOT 66.

DRAWING TITLE: **DETAILS**

|                  |                 |                      |                       |                         |
|------------------|-----------------|----------------------|-----------------------|-------------------------|
| DESIGNED BY: JB  | DRAWN BY: VMB   | APPROVED BY: PM: RDF | APPROVED BY: PIC: MDF | DRAWING #: <b>C-903</b> |
| DATE: 11/01/2022 | SCALE: AS SHOWN | FE PROJECT #:        | 19-049                | PAGE 10 OF 10           |

File Name: F:\2019\19-049\_Jeanne Drive Site Plan\C-901 - C-903.dwg (Layout: C-903)  
Date: Fri, Apr 21, 2023 - 10:03 AM (Name: vmb)



PROGRESS PRINT  
4/21/23  
NOT FOR CONSTRUCTION

HILLSIDE LAND DEVELOPMENT INC.

## STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

JEANNE DRIVE  
NEWBURGH, NY 12550



TAX LOT SECTION 34, BLOCK 2, LOT 66, 3 ACRES+/-  
TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

**PREPARED BY:**

FELLENZER ENGINEERING  
22 MULBERRY STREET SUITE 2A  
MIDDLETOWN, NEW YORK 10940  
RYAN D. FELLENZER, PE  
PROJECT 19-049

**REPRESENTING:**

HILLSIDE LAND DEVELOPMENT INC.  
PO BOX 2758  
NEWBURGH, NY 12550  
PAUL HOFFNER, PRESIDENT

APRIL 21, 2023





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## APPENDICES:

- A. USDA WEB SOIL SURVEY
- B. CONSTRUCTION SITE LOG BOOK
  - OPERATOR'S CERTIFICATION
  - QUALIFIED PROFESSIONAL'S CERTIFICATION
  - PRE-CONSTRUCTION SITE ASSESSMENT CHECKLIST
  - CONSTRUCTION DURATION INSPECTIONS
  - MONTHLY SUMMARY OF INSPECTION ACTIVITIES
- C. STORMWATER POND CHECKLIST
- D. PRE AND POST-DEVELOPMENT – TR-55 – 1, 10, 25 & 100 YR
- E. MS4 FORM

## **NARRATIVE**

The applicant, Hillside Land Development, Inc. is proposing improvements on the existing site located at 24 Jeanne Drive in the Town of Newburgh, NY. Lot 34-2-66 is approximately 3 acres, within the IB District.

Existing site features include access onto Jeanne Drive and no structures. The site is mostly cleared except for the rear of the property that is covered with trees and contains federal wetlands. A new wetland delineation has been performed and is shown on the site plan.

Total project disturbance will be greater than one (1) acre; therefore, the New York State Department of Environmental Conservation requires that a Stormwater Pollution Prevention Plan (SWPPP) be completed.

To maintain runoff at or below the pre-development levels, water quality control measures and water quantity control measures will be implemented as well as provisions for soil erosion control and sediment control during construction

### EXISTING SITE –

- 3.0 acre lot
- Municipal water along Jeanne Drive
- Combination of cleared land and tree coverage
- USACE wetlands located at the rear of the property

### PROPOSED SITE –

- One-story warehouse (26,000 sq.ft. +/-)
- Entrance onto Jeanne Drive
- On-site septic system

- Connection to municipal water for domestic and fire suppression services
- Parking for up to (24) vehicles
- Loading spaces for (3) commercial trucks
- Stormwater detention pond and subsurface chambers
- Wetland disturbance less than 0.1 acres

The total proposed impervious coverage within the tax parcel is 55,641 sq. ft., or 41.6%. Building coverage is 19.4%.

The total area of disturbance is approximately 2.3 acres, including grading. Soil remediation will be utilized in these areas per NYSDEC. Stormwater HDPE piping, Cultech storage chambers, pre-cast catch basins and outlet structures will be used in conjunction with an on-site detention pond for storage of storm run-off. The conveyance/storage system will maintain post development storm event peak flows equal to or below those of pre-development storm events. The development of the project will also reduce total volume of run-off compared to the pre-developed site, thus fulfilling the Rrv requirement.

## SOILS

The provided USDA Web Soil Survey Map (appendix B) shows that the underlying soils of the project area are:

- Erie Channery Silt Loam (EsB)
- Bourne Fine Sandy Loam (BnB)
- Udorthents (Uh)
- Mardin Silt Loam (MdB)

Areas of cut and fill to be restored per the NYSDEC “Deep Ripping and De-compaction” Requirements, January, 2015.

## SPDES

As a result of the proposed improvements an area of greater than 1 acre of disturbance will be created. The SPDES General Permit for Stormwater Discharges during Construction GP-0-20-001 cover disturbances of up to 5 acres.

The following sections will identify a methodology for mitigating post construction site conditions, erosion and sediment control and construction practices, existing and post construction hydrologic data, and Erosion & Sediment Control objectives to address during construction activity. These implemented practices should limit erosion & sediment runoff and discharge impacts within the project site and the area surrounding the project site to the maximum extent practicable.

## **RUNOFF REDUCTION**

$$RRv \text{ (in acre-feet of storage)} = [(P)(Rv^*)( A_i)(S)] /12$$

$$P = 1.4$$

$$Rv^* = 0.05+0.009(I) \text{ where } I \text{ is } 100\% \text{ impervious} = 0.95$$

$$A_{ic} = 1.3 \text{ acres}$$

$$S = \text{Hydrologic Soil Group (HSG) Specific Reduction Factor (S)} = 0.2 \text{ for D}$$

### Required RRv

$$RRv \text{ (in acre-feet of storage)} = [(P)(Rv^*)( A_i)] /12 = 0.03 \text{ ac ft} = 1,307 \text{ cu ft}$$

Per the NYS Stormwater Management Design Manual, Chapter 4, Section 4.3, page 4-5, we will calculate Runoff Reduction Volume based on the Reduction of Runoff Volume by Storage Capacity of the practice.

Provided RRv

Total pond storage = 32,458 cu ft to permanent pool elevation

Therefore, at a minimum the complete project will accommodate storage of the required 1,307 cu ft.

Furthermore, the following Green Infrastructure Techniques per Chapter 5 of the New York State Stormwater Management Design Manual will be applied for additional mitigation:

**Table 5.7 Green Infrastructure Techniques for Runoff Reduction**

| Practice                                       | Description  | Project Application  |
|--|--|--|
| 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        | The project site contains portions of NWI PF01E, which is to be preserved as a buffer with minor disturbance allowed by a national permit (less than 0.1 acres).                                 |
| Sheetflow 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 some areas of a | Similar to “Conservation of Natural Areas” the PF01E acts as an undisturbed natural buffer and vegetated filter strip to further enhance the treatment of stormwater within the detention ponds. |

|                          |  |  |
|--------------------------|--|--|
|                          | development project  |  |
| 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, conservation areas and erosion and sediment control | Landscaping in the form of numerous plants, trees, and shrubs of varying species are proposed to help with visual buffering of the site as well as increasing the nutrient uptake of the site and increased runoff infiltration. |

**SOIL RESTORATION**

1. Soil Restoration as defined by "Deep Ripping and Compaction" (January 2015 NYSDEC) shall be performed in all areas to be re-graded (areas of cut/fill).
2. Soil restoration is not required in areas of minimal soil disturbance, such as clearing and grubbing, as per Table 5.3, NYSDEC Stormwater Design Manual, January 2015.
3. Regrading of site shall result in a balanced site, with equal cut/fill volumes.

## **EROSION AND SEDIMENT CONTROL**

The erosion and sediment control practices and the design of erosion and sediment control plans were prepared in accordance with “New York State Standards and Specifications for Erosion and Sediment Control, 11/16 ed.”

### 1. Planned Erosion and Sedimentation Control Practices

#### a. Overall Objectives:

- (1) The overall objective of any erosion and sediment control plan is to control erosion to the maximum extent practicable at the source.
- (2) Existing vegetative cover shall be maintained to the maximum extent practicable and site disturbance shall be controlled to prevent soil disturbance beyond the “limits of disturbance” indicated on the site grading plans.
- (3) Where necessary, appropriate sediment control measures shall be installed at all existing project area drainage ways or stormwater management structures prior to the installation of erosion control measures within the project site.
- (4) All temporary erosion and sediment control measures shall be installed prior to any disturbance in any portion of the project site.
- (5) All permanent erosion and sediment control measures shall be installed as early as possible or as directed by the site engineer. The only permanent measure proposed is permanent seeding.



(6) Unless specified elsewhere below, during construction activities at the project site, all erosion and sediment control measures shall be inspected and, if necessary, maintenance performed, on a weekly basis.

b. Existing Stormwater Management Facilities:

(1) All existing stormwater management facilities, if present, shall be protected at all times. Maintenance of existing facilities is the responsibility of the owner of record.

c. Limits of Disturbance and Tree Preservation and Protection:

(1) Site disturbance shall be limited to the maximum extent practicable to "Limits of Disturbance" identified on the plans.

(2) Site conditions encountered during construction activities that point toward a need to disturb areas beyond the "Limits of Disturbance" shall be brought to the attention of the site engineer before undertaken. Engineer shall verify that the appropriate erosion & sediment control measures and BMPs are in place prior to start of work.

d. Filter Fabric Silt Fence or Silt Socks:

(1) Silt fences with woven wire backing for added support to prevent collapse are to be installed prior to the disturbance of any upslope areas, and around the entire perimeter of soil stockpiles at the end of the work day to prevent sediment from entering the drainage courses.

(2) A silt fence may be used subject to the following conditions:

a) Maximum allowable slope lengths contributing runoff to a silt fence placed on a slope are:

| Slope Maximum  | Steepness Length (ft.) |
|----------------|------------------------|
| 2:1            | 25                     |
| 3:1            | 50                     |
| 4:1            | 75                     |
| 5:1 or flatter | 100                    |

b) Maximum drainage area for overland flow to a silt fence shall not exceed  $\frac{1}{4}$  acre per 100 feet of fence, with maximum ponding depth of 1.5 feet behind the fence;

c) Erosion would occur in the form of sheet erosion;

d) There is no concentration of water flowing to the barrier.

(3) Inspection and maintenance shall be performed on a weekly basis and sediment material removed when “bulges” develop.

(4) Silt fences shall be removed when they are no longer needed or as directed by the site engineer.

e. Dust Control:

(1) At site access and other disturbed areas surface dust movement and dust blowing shall be controlled to the maximum extent practicable, and especially where off-site damage may occur or create a nuisance condition if dust is not controlled.

- (2) Construction operations should be scheduled to minimize the amount of area disturbed at one time.
  - (3) Buffer areas of vegetation should be left where practical.
  - (4) Temporary or permanent stabilization measures shall be installed.
  - (5) Should excessive dust be generated, it should be controlled by sprinkling.
  - (6) Dust control measures shall be continue through dry weather periods and/or until all disturbed areas are stabilized.
- f. Stabilized Construction Entrance:
- (1) A stabilized construction entrance(s) is/are to be completed prior to the start of construction activities.
  - (2) Installation Criteria:
    - a) Aggregate Size: Use a matrix of 1-4 inch stone, or reclaimed or recycled concrete equivalent.
    - b) Thickness: Not less than six (6) inches.
    - c) Width: 24-foot minimum
    - d) Length: Not less than 50 feet or as directed by the site engineer
    - e) Geotextile: To be placed over the entire area to be covered with aggregate. Piping of surface water under entrance shall be provided as required. If piping is impossible, a mountable berm with 5:1 slopes will be permitted.

- (3) The entrance shall be maintained in a condition which will prevent the tracking or flowing of sediment onto public rights-of-way or streets. This may require periodic top dressing with addition aggregate.
  - (4) All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
  - (5) When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way.
  - (6) When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device.
  - (7) All sediment shall be prevented from entering storm drains, ditches, or watercourses.
  - (8) Inspection shall be performed weekly and needed maintenance shall be made promptly.
  - (9) The stabilized construction entrance shall be removed when it is no longer needed or as directed by the site engineer.
- g. Diversion Swales, none are proposed at this time, but if required by the construction period engineer:
- (1) Temporary swales are to be constructed to:
    - a) To divert flows from entering a disturbed area.
    - b) Intermittently across disturbed areas to shorten overland flow distances.
    - c) To direct sediment laden water along the base of slopes to a trapping device.

- d) To transport offsite flows across disturbed areas such as rights-of-way.
- (2) Swales collecting runoff from disturbed areas shall remain in place until the disturbed areas are permanently stabilized.
- (3) Where necessary, diversion swales are to be installed prior to the disturbance of areas.
- (4) Stabilization of the swale shall be completed within 7 days of installation in accordance with the appropriate standard and specifications for vegetative stabilization or stabilization with mulch as determined by the time of year.
- (5) The flow channel shall be stabilized as per the following criteria:

| Channel Grade | Type of Treatment  |
|---------------|--|
| 0.5 - 5.0%    | Seed and straw mulch   |
| 5.0 – 8.0%    | Seed and cover with RECP, sod, or line with plastic or 2 in. stone |
| 8.1 to 20%    | Line with 4-8 in. stone or or geotextile                           |

- (6) Inspection and maintenance shall be performed on a weekly basis and repairs made promptly.
- (7) Swales shall be filled in or graded when they are no longer needed or as directed by the site engineer.

h. Check Dams

i. Soil Stockpile Areas:

- (1) Soil stockpile areas shall be established as soon as erodible material is excavated or collected.
- (2) Soil stockpile areas shall be located where shown on the plans or as directed by the site engineer.
- (3) Silt filter fencing shall be in place around the entire perimeter of the stockpile at the end of each workday.
- (4) Depending on time of year stockpiles shall be stabilized by seeding or mulch as directed by the site engineer.

j. Stabilization of Disturbed Areas:

- (1) Temporary stabilization of disturbed areas: depending on time of year shall include seeding and/or mulching applied to disturbed areas as soon as practicable or as directed by the site engineer.
- (2) Temporary stabilization of disturbed areas: type of seed and the application rates for seeding and mulching shall be as specified on the plans.
- (3) Temporary stabilization of disturbed areas: must be used on areas not under construction that will be exposed for more than 14 days.

- (4) Permanent stabilization of disturbed areas: shall include seeding and munching, and may include soil augmentation and the application of fertilizer as directed by the site engineer.
  - (5) Permanent stabilization of disturbed areas: type of seed and the application rates for seeding and mulching shall be as specified on the plans, and soil augmentation and the application rate of fertilizer shall be as directed by the site engineer.
  - (6) Permanent stabilization of disturbed areas: shall be completed as soon as possible after construction activities in an area are completed.
  - (7) Permanent stabilization of disturbed areas with seed and mulch should be undertaken from March to May and September to October 15, and temporary stabilization can be utilized through November.
- k. Permanent Erosion and Sediment Control Measures:
- (1) Permanent erosion and sediment control measure to stabilize the project site (stabilization seeding) as indicated on the site development plans should be performed as soon as possible after completion of grading.
  - (2) All permanent erosion and sediment control measures designed and implemented must be properly maintained in order to remain functional.

**1. Construction Schedule**

- a. Obtain plan approval and other applicable permits.
- b. Hold pre-construction conference at least one week prior to starting construction, which is to be attended by the owner and the owner's contractor and site engineer.
- c. A mailbox or other means to store the SWPPP, drawings and Inspection Reports, shall be installed on site.
- d. At least 7 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the New York One Call System Incorporated at 1-800-962-7962 for buried utilities locations.
- e. Construct stabilized construction entrance(s), as required.
- f. Sediment control measures shall be installed at all existing project area drainage ways or stormwater management structures prior to the installation of erosion control measure within the project site.
- g. Flag the limits of disturbance and vegetation to be preserved and protected.
- h. Install filter fabric silt fencing or silt soxx.
- i. Tree clearing and grubbing.
- j. Rough grade site, stockpile topsoil
- k. Soil remediation per NYSDEC



- l. Finish grading as soon as rough grading is complete. Leave the surface slightly roughened and vegetate and mulch immediately.
- m. Construction of proposed building.
- n. Inspections per schedule.
- o. Construction of utility services and lighting.
- p. Pave access drives and parking areas..
- q. Complete final grading
- r. Complete final grading of grounds, topsoil critical areas, and permanently vegetate, landscape, and mulch.
- s. After the site is stabilized, remove all temporary measures
- t. Estimated time before final stabilization—3-4 months.

NOTES:

1. The operator shall assure that the approved stormwater management plan is properly and completely implemented.
2. Construction vehicles and equipment may neither enter directly nor exit directly from the site without a construction entrance. Measures must be taken to prevent soil and sediment from a vehicle's tires from being deposited onto the public road.
3. Before initiating any revisions to the approved stormwater management plan or revisions to other plans that may affect the effectiveness of the approved

plan, the operator must receive approval of the revisions from the design engineer

5. The operator shall assure that the stormwater management plan has been prepared, approved by the design engineer, and is being implemented and maintained for all soil and/or rock spoil and borrow areas, regardless of their locations.
6. The stormwater management plan mapping must display a NY ONE CALL SYSTEM INCORPORATED symbol including the site identification number. (This is a numbered symbol not a note.)
7. Immediately after earth disturbance activities cease, within 14 days, the operator shall stabilize any areas disturbed by the activities. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade and which will be redistributed within 1 year must be stabilized in accordance with the temporary vegetative stabilization specifications. Disturbed areas which are at finished grade or which will not be redistributed within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.
8. The operator shall remove from the site, recycle, or dispose of all building materials and wastes in accordance with all applicable state and local codes. The contractor shall not illegally bury, dump, or discharge any building material or wastes at the site.

## **STORMWATER MANAGEMENT PLAN**

### **OVERALL OBJECTIVES**

The Erosion & Sediment control practices of the SWPPP / Erosion & Sediment Control Plan were prepared in accordance with requirements of the “New York State Standards & Specifications for Erosion & Sediment Control, November 2016”, also known as the “Blue Book”.

The only permanent erosion and sediment control measures that are to be converted into a permanent measure is the permanent stabilization / seed mixture.

### **RUNOFF SUMMARY**

| <b>PRE-DEVELOPMENT<br/>CONDITION</b>  | 1-yr           | 10-yr           | 25-yr           | 100-yr           |
|---------------------------------------|----------------|-----------------|-----------------|------------------|
| Precipitation (in) (type II rainfall) | 2.9            | 5.5             | 6.5             | 8.0              |
| Design Point                          | Q1-yr<br>(cfs) | Q10-yr<br>(cfs) | Q25-yr<br>(cfs) | Q100-yr<br>(cfs) |
| Subbasin 1                            | 1.67           | 5.01            | 6.38            | 8.46             |
| Subbasin 2                            | 0.64           | 2.40            | 3.17            | 4.36             |
| Subbasin 3                            | 0.0            | 0.01            | 0.04            | 0.18             |

| <b>POST-DEVELOPMENT<br/>CONDITION</b> | 1-yr           | 10-yr           | 25-yr           | 100-yr           |
|---------------------------------------|----------------|-----------------|-----------------|------------------|
| Precipitation (in) (type II rainfall) | 2.9            | 5.5             | 6.5             | 8.0              |
| Design Point                          | Q1-yr<br>(cfs) | Q10-yr<br>(cfs) | Q25-yr<br>(cfs) | Q100-yr<br>(cfs) |
| Pond #1                               | 0.0            | 0.07            | 0.10            | 0.23             |
| Cultec Chambers                       | 1.25           | 2.65            | 3.15            | 3.83             |

| <b>PRE VS. POST<br/>REDUCTION IN CFS SHOWN<br/>IN PARENTHESES</b> | 1-yr           | 10-yr           | 25-yr           | 100-yr           |
|---|----------------|-----------------|-----------------|------------------|
| Precipitation (in) (type II rainfall)                             | 2.9            | 5.5             | 6.5             | 8.0              |
| Design Point  | Q1-yr<br>(cfs) | Q10-yr<br>(cfs) | Q25-yr<br>(cfs) | Q100-yr<br>(cfs) |
| Pond #1   | (0.64)         | (2.34)          | (3.11)          | (4.31)           |
| Cultec Chambers   | (0.42)         | (2.36)          | (3.23)          | (4.63)           |

**NO ADVERSE IMPACT**

The proposed stormwater peak flow will successfully convey the 1,10, & 100 year storm events at a rate which is less than or equal to, the pre-development rates at the design point where it leaves our property. Thus, it can be reasonably concluded that there is no adverse impact to the site.

## **HYDROLOGICAL MODELING**

HydroCAD 10.0, employing the SCS TR-20 runoff calculation method was used to model this project.

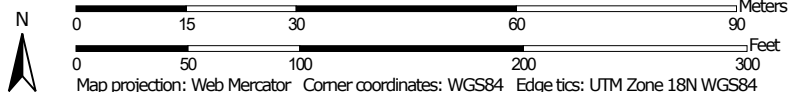
**APPENDIX A**

**WEB SOIL SURVEY**

Soil Map—Orange County, New York  
(HILLSIDE LAND DEVELOPMENT)



Map Scale: 1:1,030 if printed on A portrait (8.5" x 11") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84




## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County, New York

Survey Area Data: Version 23, Sep 10, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 31, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

| Map Unit Symbol                    | Map Unit Name  | Acres in AOI | Percent of AOI |
|------------------------------------|--|--------------|----------------|
| BnB                                | Bath-Nassau channery silt loams, 3 to 8 percent slopes | 1.0          | 26.6%          |
| ESB                                | Erie extremely stony soils, gently sloping             | 2.2          | 58.7%          |
| MdB                                | Mardin gravelly silt loam, 3 to 8 percent slopes       | 0.1          | 2.9%           |
| UH                                 | Udorthents, smoothed                                   | 0.4          | 11.8%          |
| <b>Totals for Area of Interest</b> |  | <b>3.7</b>   | <b>100.0%</b>  |

## Orange County, New York

### BnB—Bath-Nassau channery silt loams, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 9vtn

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 42 to 52 inches

*Mean annual air temperature:* 46 to 52 degrees F

*Frost-free period:* 135 to 215 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Bath and similar soils:* 50 percent

*Nassau and similar soils:* 30 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Bath

##### Setting

*Landform:* Drumlinoid ridges, till plains, hills

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

##### Typical profile

*H1 - 0 to 9 inches:* channery silt loam

*H2 - 9 to 29 inches:* channery silt loam

*H3 - 29 to 53 inches:* very channery silt loam

*H4 - 53 to 57 inches:* unweathered bedrock

##### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* 22 to 38 inches to fragipan; 40 to 60 inches to lithic bedrock

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)

*Depth to water table:* About 24 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Very low (about 2.8 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* C

*Ecological site:* F140XY030NY - Well Drained Dense Till  
*Hydric soil rating:* No

## Description of Nassau

### Setting

*Landform:* Till plains, ridges, benches  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Channery loamy till derived mainly from local slate  
or shale

### Typical profile

*H1 - 0 to 10 inches:* channery silt loam  
*H2 - 10 to 19 inches:* very channery silt loam  
*H3 - 19 to 23 inches:* unweathered bedrock

### Properties and qualities

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water*  
*(Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Very low (about 2.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3s  
*Hydrologic Soil Group:* D  
*Ecological site:* F144AY033MA - Shallow Dry Till Uplands  
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Orange County, New York  
Survey Area Data: Version 23, Sep 10, 2022

## Orange County, New York

### ESB—Erie extremely stony soils, gently sloping

#### Map Unit Setting

*National map unit symbol:* 9vvb

*Elevation:* 180 to 1,460 feet

*Mean annual precipitation:* 42 to 52 inches

*Mean annual air temperature:* 46 to 52 degrees F

*Frost-free period:* 135 to 215 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Erie, extremely stony, and similar soils:* 80 percent

*Minor components:* 5 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Erie, Extremely Stony

##### Setting

*Landform:* Drumlinoid ridges, till plains, hills

*Landform position (two-dimensional):* Summit, footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Parent material:* Loamy till derived from siltstone, sandstone, shale, and limestone

##### Typical profile

*H1 - 0 to 4 inches:* gravelly silt loam

*H2 - 4 to 18 inches:* channery silt loam

*H3 - 18 to 50 inches:* channery silt loam

*H4 - 50 to 70 inches:* channery silt loam

##### Properties and qualities

*Slope:* 3 to 8 percent

*Surface area covered with cobbles, stones or boulders:* 9.0 percent

*Depth to restrictive feature:* 10 to 21 inches to fragipan

*Drainage class:* Somewhat poorly drained

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 6 to 18 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 15 percent

*Available water supply, 0 to 60 inches:* Very low (about 2.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* D

*Ecological site:* F144AY037MA - Moist Dense Till Uplands

*Hydric soil rating:* No

### **Minor Components**

#### **Alden**

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

## **Data Source Information**

Soil Survey Area: Orange County, New York

Survey Area Data: Version 23, Sep 10, 2022

## Orange County, New York

### MdB—Mardin gravelly silt loam, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2v30j

*Elevation:* 330 to 2,460 feet

*Mean annual precipitation:* 31 to 70 inches

*Mean annual air temperature:* 39 to 52 degrees F

*Frost-free period:* 105 to 180 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Mardin and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Mardin

##### Setting

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Interfluve, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy till

##### Typical profile

*Ap - 0 to 8 inches:* gravelly silt loam

*Bw - 8 to 15 inches:* gravelly silt loam

*E - 15 to 20 inches:* gravelly silt loam

*Bx - 20 to 72 inches:* gravelly silt loam

##### Properties and qualities

*Slope:* 3 to 8 percent

*Surface area covered with cobbles, stones or boulders:* 0.0 percent

*Depth to restrictive feature:* 14 to 26 inches to fragipan

*Drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)

*Depth to water table:* About 13 to 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 3.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* D

*Ecological site:* F144AY008CT - Moist Till Uplands

*Hydric soil rating:* No

## Minor Components

### Lordstown

*Percent of map unit:* 5 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Mountaintop, interfluve, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

### Volusia

*Percent of map unit:* 5 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Summit, footslope

*Landform position (three-dimensional):* Interfluve, base slope, side slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* No

### Bath

*Percent of map unit:* 5 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Shoulder, backslope

*Landform position (three-dimensional):* Interfluve, side slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Orange County, New York

Survey Area Data: Version 23, Sep 10, 2022

## Orange County, New York

### UH—Udorthents, smoothed

#### Map Unit Setting

*National map unit symbol:* 9vxc

*Elevation:* 0 to 1,260 feet

*Mean annual precipitation:* 42 to 52 inches

*Mean annual air temperature:* 46 to 52 degrees F

*Frost-free period:* 135 to 215 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Udorthents and similar soils:* 75 percent

*Minor components:* 5 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Udorthents

##### Typical profile

*H1 - 0 to 4 inches:* channery loam

*H2 - 4 to 70 inches:* very gravelly sandy loam

##### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately low to high (0.06 to 5.95 in/hr)

*Depth to water table:* About 36 to 72 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 15 percent

*Available water supply, 0 to 60 inches:* Low (about 5.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

#### Minor Components

##### Alden

*Percent of map unit:* 5 percent

*Landform:* Depressions



*Hydric soil rating: Yes*

## **Data Source Information**

Soil Survey Area: Orange County, New York  
Survey Area Data: Version 23, Sep 10, 2022

**APPENDIX B**

**CONSTRUCTION SITE LOG BOOK**

**STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR  
CONSTRUCTION ACTIVITIES**

**CONSTRUCTION SITE LOG BOOK**

Table of Contents

- I. Pre-Construction Meeting Documents
  - a. Preamble to Site Assessment and Inspections
  - b. Operator's Certification
  - c. Qualified Professional's Credentials & Certification
  - d. Pre-Construction Site Assessment Checklist
- II. Construction Duration Inspections
  - a. Directions
  - b. Modification to the SWPPP
- III. Monthly Summary Reports
- IV. Monitoring, Reporting, and Three-Month Status Reports
  - a. Operator's Compliance Response Form

Properly completing forms such as those contained in this Appendix the inspection requirement of NYSDEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

**I. PRE-CONSTRUCTION MEETING DOCUMENTS**

**Project Name**

---

**Permit No.** \_\_\_\_\_ **Date of Authorization**

---

**Name of Operator**

---

**Prime Contractor**

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**a. Preamble to Site Assessment and Inspections**

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified professional<sup>1</sup> conduct an assessment of the site prior to the commencement of construction<sup>2</sup> and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization<sup>3</sup> using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

<sup>1</sup> "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

2 “Commencement of construction” means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

3 “Final stabilization” means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (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.

**b. Operators Certification**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law.

**Name (please print):**

\_\_\_\_\_

**Title** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Address:**

\_\_\_\_\_

**Phone:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Signature:**

\_\_\_\_\_

**c. Qualified Professional's Credentials & Certification**

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

**Name (please print):**

\_\_\_\_\_

**Title** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Address:**

\_\_\_\_\_

**Phone:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Signature:**

\_\_\_\_\_

**d. Pre-construction Site Assessment Checklist**

**(NOTE: Provide comments below as necessary)**

1. Notice of Intent, SWPPP, and Contractors Certification:

**Yes No NA**

- Has a Notice of Intent been filed with the NYS Department of Conservation?
- Is the SWPPP on-site? Where? \_\_\_\_\_
- Is the Plan current? What is the latest revision date? \_\_\_\_\_
- Is a copy of the NOI (with brief description) onsite? Where? \_\_\_\_\_
- Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

**Yes No NA**

- Are construction limits clearly flagged or fenced?
- Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
- Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

**Yes No NA**

- Clean stormwater runoff has been diverted from areas to be disturbed.
- Bodies of water located either on site or in the vicinity of the site have been identified and protected.
- Appropriate practices to protect on-site or downstream surface water are installed.
- Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Entrance

**Yes No NA**

- A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
- Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
- Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Perimeter Sediment Controls

**Yes No NA**

- Silt fence material and installation comply with the standard drawing and specifications.
- Silt fences are installed at appropriate spacing intervals
- Sediment/detention basin was installed as first land disturbing activity.
- Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

**Yes No NA**

- The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
- The plan is contained in the SWPPP on page \_\_\_\_\_
- Appropriate materials to control spills are onsite. Where? \_\_\_\_\_

## CONSTRUCTION DURATION INSPECTIONS

**a. Directions: Inspection Forms will be filled out during the entire construction phase of the project.**

Required Elements:

- (1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;
- (2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;
- (3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;
- (4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);
- (5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and
- (6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.



**CONSTRUCTION DURATION INSPECTIONS Page 1 of \_\_\_\_\_**

**SITE PLAN/SKETCH**

---

**Inspector (print name)**

**Date of Inspection**

---

**Qualified Professional (print name)**

**Qualified Professional Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

**CONSTRUCTION DURATION INSPECTIONS Page 2 of \_\_\_\_\_**

**Maintaining Water Quality**

**Yes No NA**

- Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
- Is there residue from oil and floating substances, visible oil film, or globules or grease?
- All disturbance is within the limits of the approved plans.
- Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

**Housekeeping**

1. General Site Conditions

**Yes No NA**

- Is construction site litter and debris appropriately managed?
- Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
- Is construction impacting the adjacent property?
- Is dust adequately controlled?

2. Temporary Stream Crossing

**Yes No NA**

- Maximum diameter pipes necessary to span creek without dredging are installed.
- Installed non-woven geotextile fabric beneath approaches.
- Is fill composed of aggregate (no earth or soil)?
- Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

**Runoff Control Practices**

1. Excavation Dewatering

**Yes No NA**

- Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
- Clean water from upstream pool is being pumped to the downstream pool.
- Sediment laden water from work area is being discharged to a silt-trapping device.
- Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader

**Yes No NA**

- Installed per plan.
- Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
- Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

**Yes No NA**

- Installed per plan with minimum side slopes 2H:1V or flatter.
  - Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
  - Sediment-laden runoff directed to sediment trapping structure
- New York Standards and Specifications Page H.8 August 2005 For Erosion and Sediment Control

**CONSTRUCTION DURATION INSPECTIONS Page 3 of \_\_\_\_\_**

**Runoff Control Practices (continued)**

4. Stone Check Dam

**Yes No NA**

Is channel stable? (flow is not eroding soil underneath or around the structure).

Check is in good condition (rocks in place and no permanent pools behind the structure).

Has accumulated sediment been removed?.

5. Rock Outlet Protection

**Yes No NA**

Installed per plan.

Installed concurrently with pipe installation.

**Soil Stabilization**

1. Topsoil and Spoil Stockpiles

**Yes No NA**

Stockpiles are stabilized with vegetation and/or mulch.

Sediment control is installed at the toe of the slope.

2. Revegetation

**Yes No NA**

Temporary seedings and mulch have been applied to idle areas.

4 inches minimum of topsoil has been applied under permanent seedings

**Sediment Control Practices**

1. Stabilized Construction Entrance

**Yes No NA**

Stone is clean enough to effectively remove mud from vehicles.

Installed per standards and specifications?

Does all traffic use the stabilized entrance to enter and leave site?

Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence

**Yes No NA**

Installed on Contour, 10 feet from toe of slope (not across conveyance channels).

Joints constructed by wrapping the two ends together for continuous support.

Fabric buried 6 inches minimum.

Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation is \_\_\_% of design capacity.

**CONSTRUCTION DURATION INSPECTIONS Page 4 of \_\_\_\_\_**  
**Sediment Control Practices (continued)**

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)

**Yes No NA**

- Installed concrete blocks lengthwise so open ends face outward, not upward.
  - Placed wire screen between No. 3 crushed stone and concrete blocks.
  - Drainage area is 1 acre or less.
  - Excavated area is 900 cubic feet.
  - Excavated side slopes should be 2:1.
  - 2" x 4" frame is constructed and structurally sound.
  - Posts 3-foot maximum spacing between posts.
  - Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
  - Posts are stable, fabric is tight and without rips or frayed areas.
- Sediment accumulation \_\_\_% of design capacity.

4. Temporary Sediment Trap

**Yes No NA**

- Outlet structure is constructed per the approved plan or drawing.
  - Geotextile fabric has been placed beneath rock fill.
- Sediment accumulation is \_\_\_% of design capacity.

5. Temporary Sediment Basin

**Yes No NA**

- Basin and outlet structure constructed per the approved plan.
- Basin side slopes are stabilized with seed/mulch.
- Drainage structure flushed and basin surface restored upon removal of sediment basin facility.

Sediment accumulation is \_\_\_% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

New York Standards and Specifications Page H.10 August 2005  
For Erosion and Sediment Control

**CONSTRUCTION DURATION INSPECTIONS Page 5 of \_\_\_\_**

**b. Modifications to the SWPPP (To be completed as described below)**

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
  - a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
  - b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

**Modification & Reason:**

### III. Monthly Summary of Site Inspection Activities

|   |                      |                                 |
|---|----------------------|---------------------------------|
| <b>Name of Permitted Facility:</b>                  | <b>Today's Date:</b> | <b>Reporting Month:</b>         |
| <b>Location:</b>                                    |                      | <b>Permit Identification #:</b> |
| <b>Name and Telephone Number of Site Inspector:</b> |                      |                                 |

| <b>Date of Inspection</b> | <b>Regular / Rainfall based Inspection</b> | <b>Name of Inspector</b> | <b>Items of Concern</b> |
|---------------------------|--|--------------------------|-------------------------|
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***Owner/Operator Certification:***

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

\_\_\_\_\_  
 Signature of Permittee or Duly Authorized Representative      Name of Permittee or Duly Authorized Representative  
 Date

Duly authorized representatives must have written authorization, submitted to DEC, to sign any permit documents.

**APPENDIX C**

**STORMWATER POND CHECKLIST**

STORMWATER POND MAINTENANCE, MANAGEMENT, INSPECTION  
 CHECKLIST

Project: \_\_\_\_\_

Location: \_\_\_\_\_

Site Status: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Inspector: \_\_\_\_\_

| Maintenance Item   | Satisfactory/<br>Unsatisfactory | Comments |
|--|---------------------------------|----------|
| <b>1. Embankment and emergency spillway (Annual, After Major Storms)</b> |                                 |          |
| 1. Vegetation and ground cover adequate                                  |                                 |          |
| 2. Embankment erosion  |                                 |          |
| 3. Animal burrows  |                                 |          |
| 4. Unauthorized planting   |                                 |          |
| 5. Cracking, bulging, or sliding of dam                                  |                                 |          |
| a. Upstream face   |                                 |          |
| b. Downstream face   |                                 |          |
| c. At or beyond toe  |                                 |          |
| downstream   |                                 |          |
| upstream   |                                 |          |
| d. Emergency spillway  |                                 |          |
| 6. Pond, toe & chimney drains clear and functioning                      |                                 |          |
| 7. Seeps/leaks on downstream face  |                                 |          |
| 8. Slope protection or riprap failure                                    |                                 |          |
| 9. Vertical/horizontal alignment of top of dam "As-Built"                |                                 |          |
| 10. Emergency spillway clear of obstructions and debris                  |                                 |          |
| 11. Other (specify)  |                                 |          |



| Maintenance Item  | Satisfactory/Unsatisfactory | Comments |
|---|-----------------------------|----------|
| <b>2. Riser and principal spillway (Annual)</b>                           |                             |          |
| Type: Reinforced concrete _____<br>Corrugated pipe _____<br>Masonry _____ |                             |          |
| 1. Low flow orifice obstructed  |                             |          |
| 2. Low flow trash rack.   |                             |          |
| a. Debris removal necessary   |                             |          |
| b. Corrosion control  |                             |          |
| 3. Weir trash rack maintenance  |                             |          |
| a. Debris removal necessary   |                             |          |
| b. corrosion control  |                             |          |
| 4. Excessive sediment accumulation<br>insider riser                       |                             |          |
| 5. Concrete/masonry condition riser<br>and barrels                        |                             |          |
| a. cracks or displacement   |                             |          |
| b. Minor spalling (<1" )  |                             |          |
| c. Major spalling (rebars<br>exposed)                                     |                             |          |
| d. Joint failures   |                             |          |
| e. Water tightness  |                             |          |
| 6. Metal pipe condition   |                             |          |
| 7. Control valve  |                             |          |
| a. Operational/exercised  |                             |          |
| b. Chained and locked   |                             |          |
| 8. Pond drain valve   |                             |          |
| a. Operational/exercised  |                             |          |
| b. Chained and locked   |                             |          |
| 9. Outfall channels functioning   |                             |          |
| 10. Other (specify)   | Page 39                     |          |

| Maintenance Item  | Satisfactory/Unsatisfactory | Comments |
|---|-----------------------------|----------|
| <b>3. Permanent Pool (Wet Ponds) (monthly)</b>                |                             |          |
| 1. Undesirable vegetative growth                              |                             |          |
| 2. Floating or floatable debris removal required              |                             |          |
| 3. Visible pollution  |                             |          |
| 4. Shoreline problem  |                             |          |
| 5. Other (specify)  |                             |          |
| <b>4. Sediment Forebays</b>                                   |                             |          |
| 1. Sedimentation noted  |                             |          |
| 2. Sediment cleanout when depth < 50% design depth            |                             |          |
| <b>5. Dry Pond Areas</b>                                      |                             |          |
| 1. Vegetation adequate  |                             |          |
| 2. Undesirable vegetative growth                              |                             |          |
| 3. Undesirable woody vegetation                               |                             |          |
| 4. Low flow channels clear of obstructions                    |                             |          |
| 5. Standing water or wet spots                                |                             |          |
| 6. Sediment and / or trash accumulation                       |                             |          |
| 7. Other (specify)  |                             |          |
| <b>6. Condition of Outfalls (Annual , After Major Storms)</b> |                             |          |
| 1. Riprap failures  |                             |          |
| 2. Slope erosion  |                             |          |
| 3. Storm drain pipes  |                             |          |
| 4. Endwalls/Headwalls   |                             |          |
| 5. Other (specify)  |                             |          |
| <b>7. Other ( Monthly)</b>                                    |                             |          |
| 1. Encroachment on pond, wetland or easement area             |                             |          |

| Maintenance Item   | Satisfactory/Unsatisfactory | Comments |
|--|-----------------------------|----------|
| 2. Complaints from residents   |                             |          |
| 3. Aesthetics  |                             |          |
| a. Grass growing required  |                             |          |
| b. Graffiti removal needed   |                             |          |
| c. Other (specify)   |                             |          |
| 4. Conditions of maintenance access routes.  |                             |          |
| 5. Signs of hydrocarbon build-up   |                             |          |
| 6. Any public hazards (specify)  |                             |          |
| <b>8. Wetland Vegetation (Annual)</b>  |                             |          |
| 1. Vegetation healthy and growing wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed) |                             |          |
| 2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?  |                             |          |
| 3. Evidence of invasive species  |                             |          |
| 4. Maintenance of adequate water depths for desired wetland plant species  |                             |          |
| 5. Harvesting of emergent plantings needed   |                             |          |
| 6. Have sediment accumulations reduced pool volume significantly or are plants “choked” with sediment  |                             |          |
| 7. Eutrophication level of the wetland.  |                             |          |
| 8. Other (specify)   |                             |          |

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**Comments:**

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**Actions to be Taken:**

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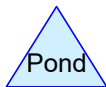
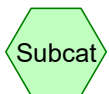
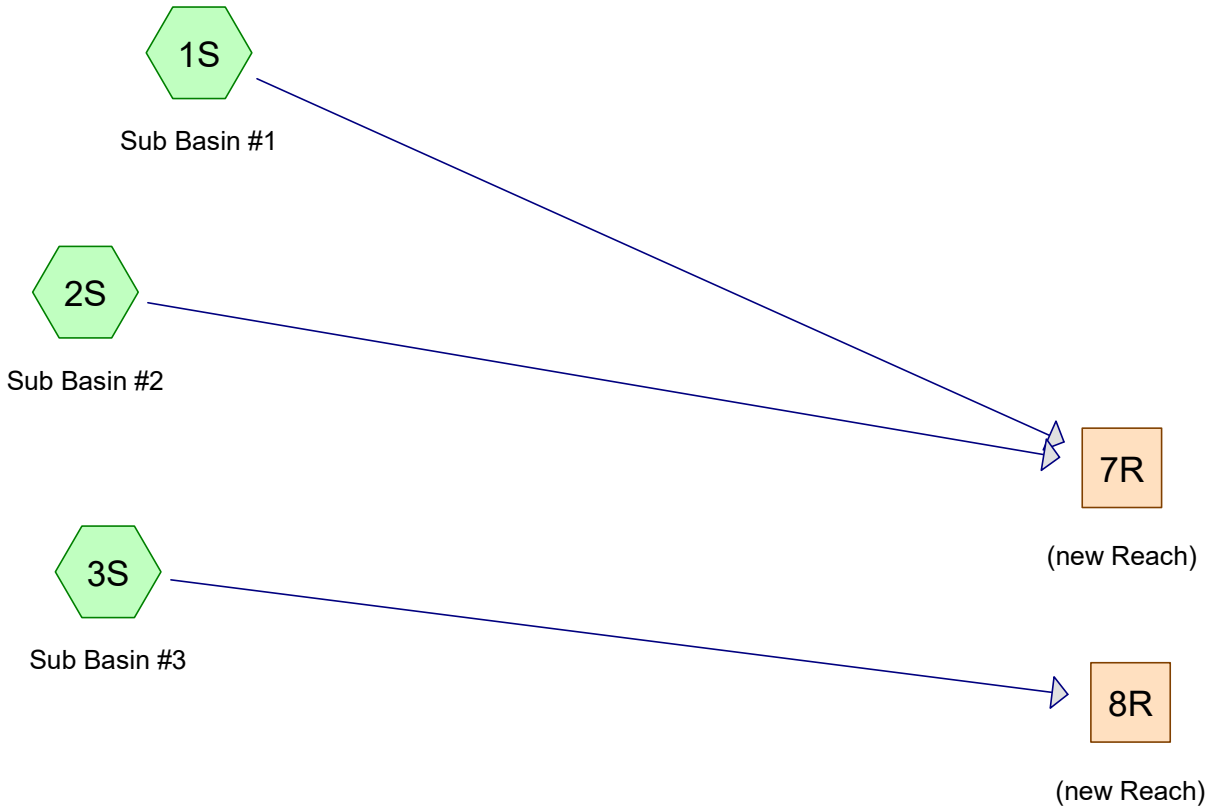
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**APPENDIX D**

**HYDROCAD PRE AND POST DEVELOPMENT RUNOFF**



## 19-049 PRE Development

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### Project Notes

Defined 9 rainfall events from NY-Newburgh IDF

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### Area Listing (all nodes)

| Area<br>(acres) | CN        | Description<br>(subcatchment-numbers) |
|-----------------|-----------|---------------------------------------|
| 0.300           | 36        | Woods, Fair, HSG A (3S)               |
| 1.226           | 73        | Woods, Fair, HSG C (2S)               |
| 1.547           | 79        | Woods, Fair, HSG D (1S)               |
| <b>3.074</b>    | <b>72</b> | <b>TOTAL AREA</b>                     |



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## Soil Listing (all nodes)

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>Numbers |
|-----------------|---------------|-------------------------|
| 0.300           | HSG A         | 3S                      |
| 0.000           | HSG B         |                         |
| 1.226           | HSG C         | 2S                      |
| 1.547           | HSG D         | 1S                      |
| 0.000           | Other         |                         |
| <b>3.074</b>    |               | <b>TOTAL AREA</b>       |

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## Ground Covers (all nodes)

| HSG-A<br>(acres) | HSG-B<br>(acres) | HSG-C<br>(acres) | HSG-D<br>(acres) | Other<br>(acres) | Total<br>(acres) | Ground<br>Cover   | Subcatchment<br>Numbers |
|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------------|
| 0.300            | 0.000            | 1.226            | 1.547            | 0.000            | 3.074            | Woods, Fair       | 1S, 2S, 3S              |
| <b>0.300</b>     | <b>0.000</b>     | <b>1.226</b>     | <b>1.547</b>     | <b>0.000</b>     | <b>3.074</b>     | <b>TOTAL AREA</b> |                         |

**19-049 PRE Development**

Type II 24-hr 1-yr Rainfall=2.90"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub Basin #1**

Runoff Area=67,399 sf 0.00% Impervious Runoff Depth>1.01"  
Flow Length=475' Tc=23.8 min CN=79 Runoff=1.67 cfs 0.130 af

**Subcatchment 2S: Sub Basin #2**

Runoff Area=53,403 sf 0.00% Impervious Runoff Depth>0.70"  
Flow Length=553' Tc=38.0 min CN=73 Runoff=0.64 cfs 0.072 af

**Subcatchment 3S: Sub Basin #3**

Runoff Area=13,080 sf 0.00% Impervious Runoff Depth=0.00"  
Flow Length=157' Tc=17.5 min CN=36 Runoff=0.00 cfs 0.000 af

**Reach 7R: (new Reach)**

Inflow=2.14 cfs 0.201 af  
Outflow=2.14 cfs 0.201 af

**Reach 8R: (new Reach)**

Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Total Runoff Area = 3.074 ac Runoff Volume = 0.201 af Average Runoff Depth = 0.79"**  
**100.00% Pervious = 3.074 ac 0.00% Impervious = 0.000 ac**

**19-049 PRE Development**

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Type II 24-hr 1-yr Rainfall=2.90"

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**Summary for Subcatchment 1S: Sub Basin #1**

Runoff = 1.67 cfs @ 12.18 hrs, Volume= 0.130 af, Depth> 1.01"

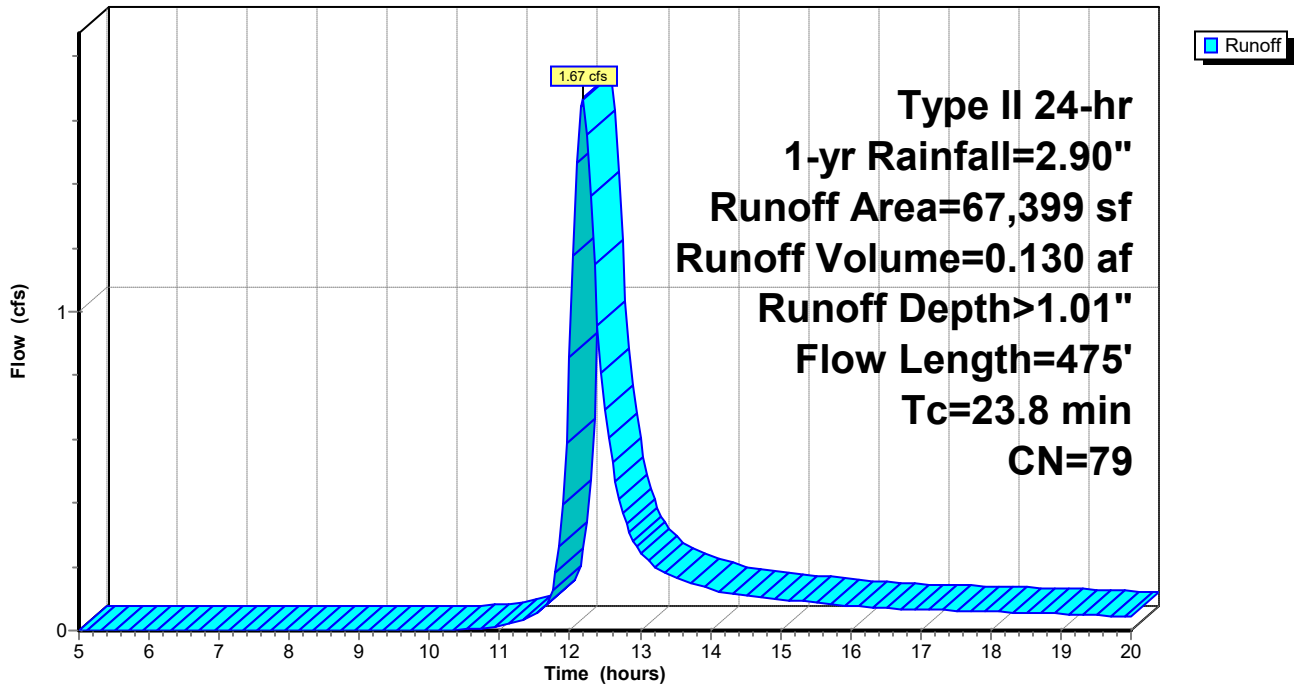
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 1-yr Rainfall=2.90"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 67,399    | 79 | Woods, Fair, HSG D    |
| 67,399    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.0     | 100           | 0.0500        | 0.11              |                | <b>Sheet Flow, Initiated from top of knoll @ 414'</b>  |
| 8.8      | 375           | 0.0200        | 0.71              |                | <b>Woods: Light underbrush n= 0.400 P2= 3.15'</b><br><b>Shallow Concentrated Flow, Shallow Conc. to wetland</b><br><b>Woodland Kv= 5.0 fps</b> |
| 23.8     | 475           | Total         |                   |                |  |

**Subcatchment 1S: Sub Basin #1**

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.90"

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## Summary for Subcatchment 2S: Sub Basin #2

Runoff = 0.64 cfs @ 12.38 hrs, Volume= 0.072 af, Depth> 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 1-yr Rainfall=2.90"

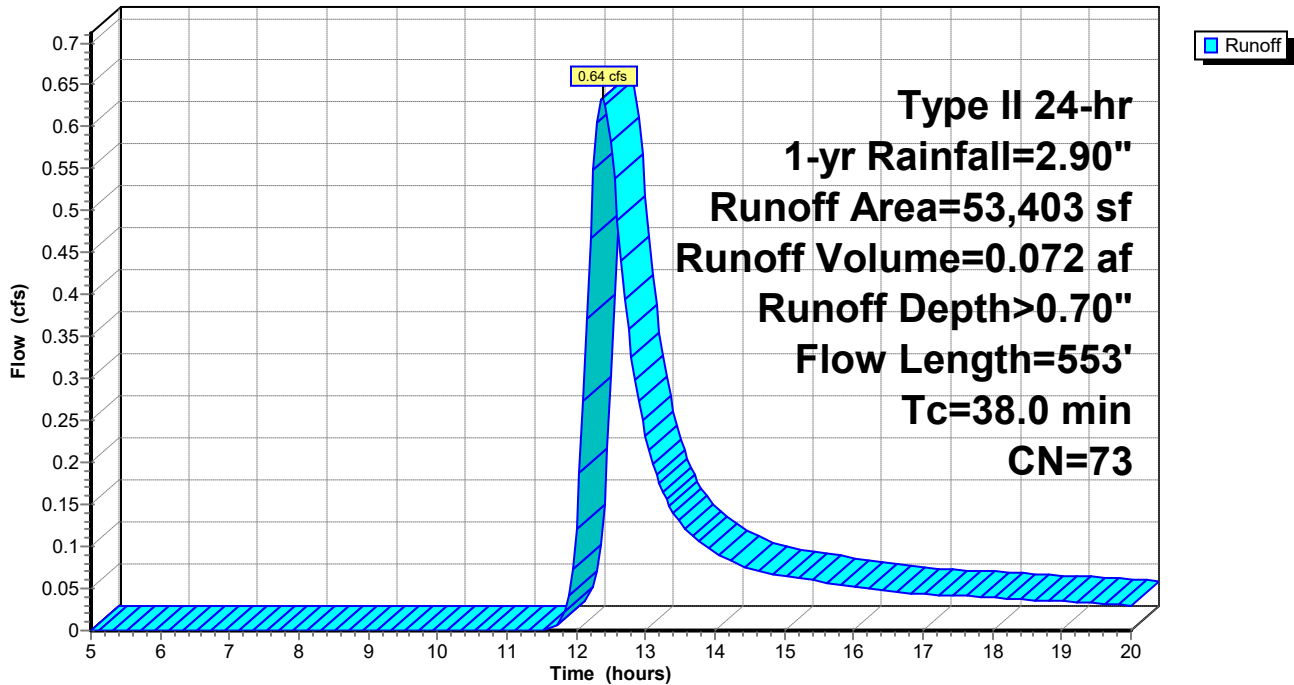
| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 53,403    | 73 | Woods, Fair, HSG C    |
| 53,403    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                                       |
|----------|---------------|---------------|-------------------|----------------|---|
| 28.6     | 100           | 0.0100        | 0.06              |                | <b>Sheet Flow, Initiated from knoll @ 414'</b>    |
| 9.4      | 453           | 0.0260        | 0.81              |                | <b>Woods: Light underbrush n= 0.400 P2= 3.15'</b> |
|          |               |               |                   |                | <b>Shallow Concentrated Flow, To wetland</b>      |
|          |               |               |                   |                | Woodland Kv= 5.0 fps                              |
| 38.0     | 553           | Total         |                   |                |   |

## Subcatchment 2S: Sub Basin #2

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.90"

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**Summary for Subcatchment 3S: Sub Basin #3**

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.90"

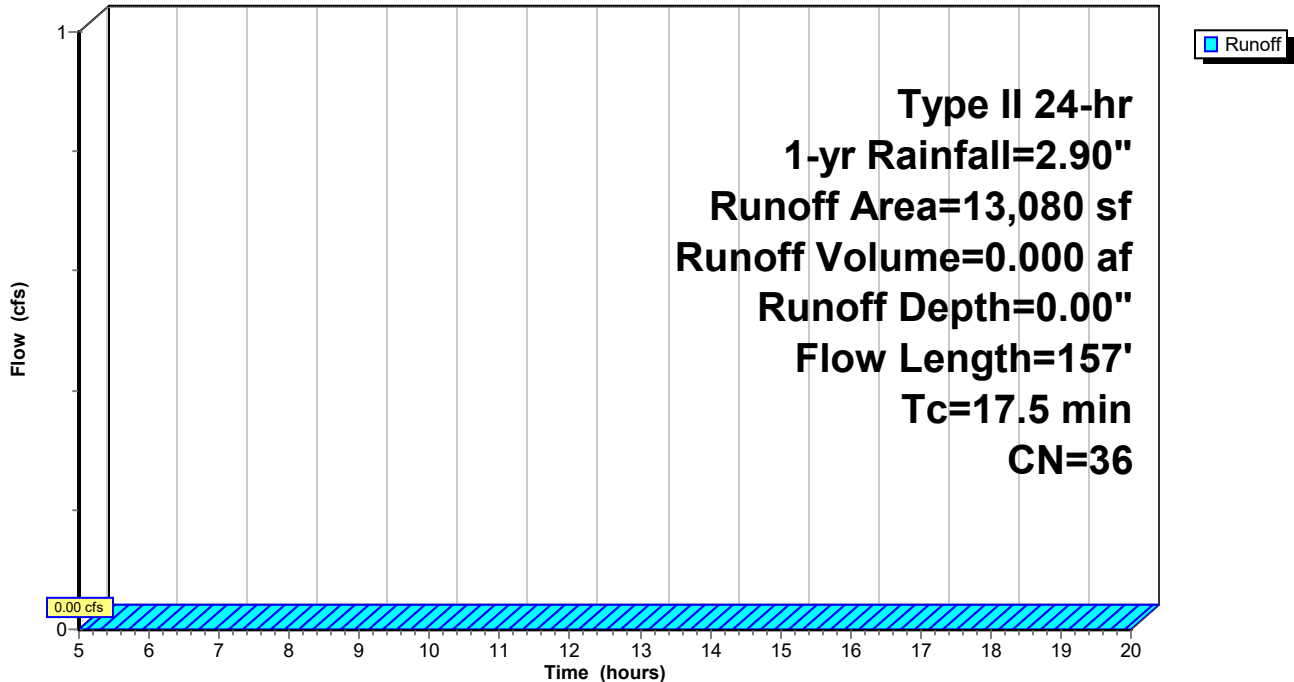
| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| * 13,080  | 36 | Woods, Fair, HSG A    |
| 13,080    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 16.4     | 100           | 0.0400        | 0.10              |                | <b>Sheet Flow, Initiated at knoll @ 414'</b>  |
| 1.1      | 57            | 0.0307        | 0.88              |                | Woods: Light underbrush n= 0.400 P2= 3.15"<br><b>Shallow Concentrated Flow, To Jeanne Dr.</b> |
| 17.5     | 157           | Total         |                   |                | Woodland Kv= 5.0 fps  |

**Subcatchment 3S: Sub Basin #3**

Hydrograph



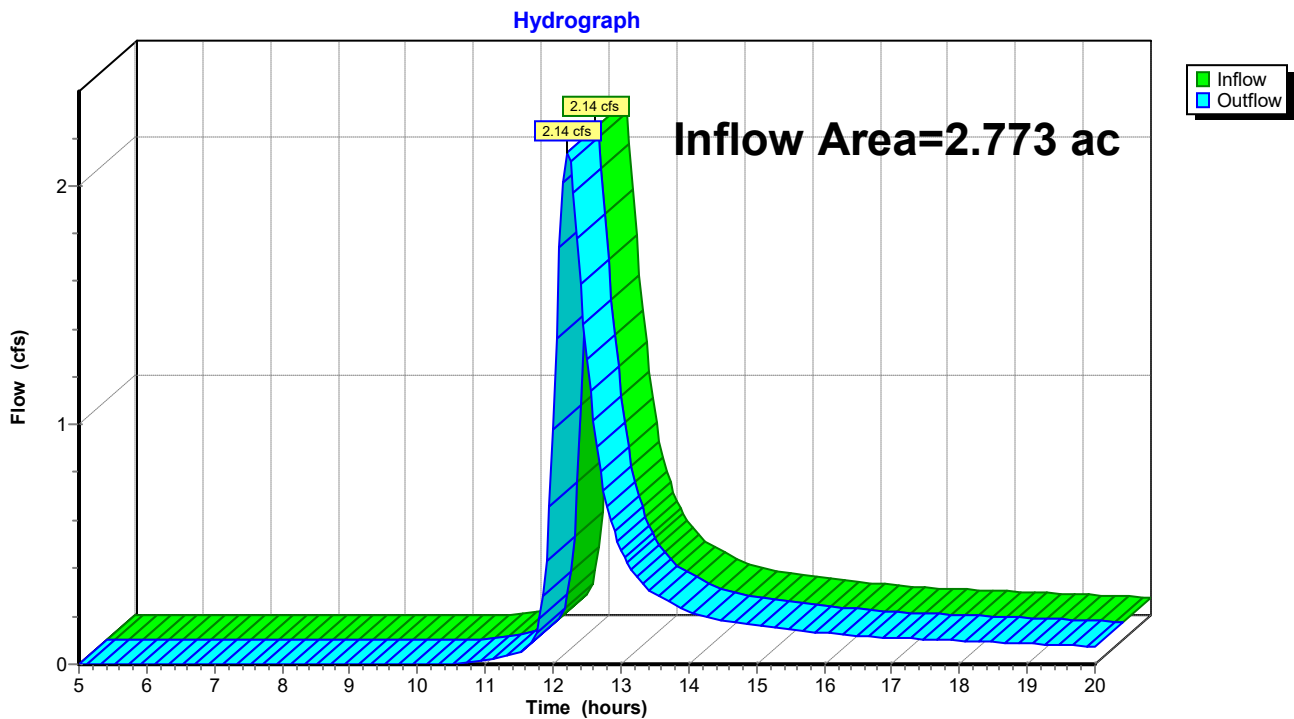
### Summary for Reach 7R: (new Reach)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.773 ac, 0.00% Impervious, Inflow Depth > 0.87" for 1-yr event  
Inflow = 2.14 cfs @ 12.21 hrs, Volume= 0.201 af  
Outflow = 2.14 cfs @ 12.21 hrs, Volume= 0.201 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

### Reach 7R: (new Reach)



### Summary for Reach 8R: (new Reach)

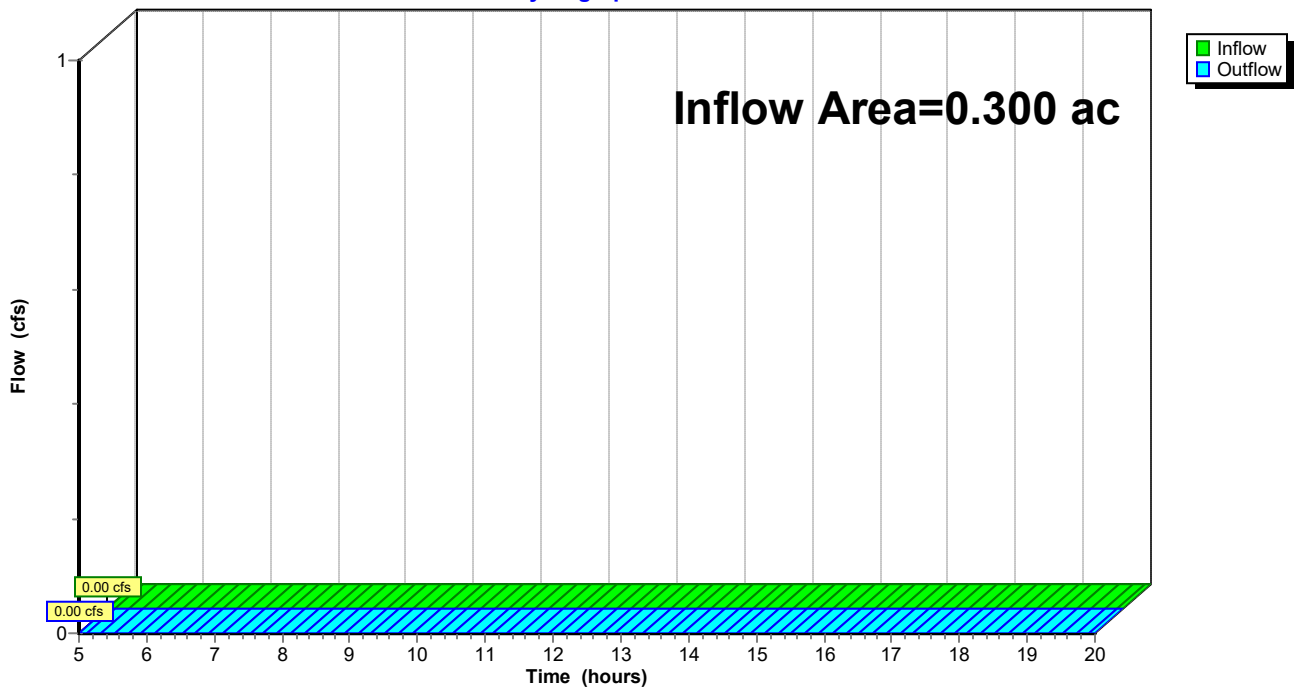
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.300 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-yr event  
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af  
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

### Reach 8R: (new Reach)

Hydrograph





**19-049 PRE Development**

Type II 24-hr 10-yr Rainfall=5.50"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub Basin #1**

Runoff Area=67,399 sf 0.00% Impervious Runoff Depth>2.98"  
Flow Length=475' Tc=23.8 min CN=79 Runoff=5.01 cfs 0.385 af

**Subcatchment 2S: Sub Basin #2**

Runoff Area=53,403 sf 0.00% Impervious Runoff Depth>2.43"  
Flow Length=553' Tc=38.0 min CN=73 Runoff=2.40 cfs 0.249 af

**Subcatchment 3S: Sub Basin #3**

Runoff Area=13,080 sf 0.00% Impervious Runoff Depth>0.14"  
Flow Length=157' Tc=17.5 min CN=36 Runoff=0.01 cfs 0.004 af

**Reach 7R: (new Reach)**

Inflow=6.90 cfs 0.633 af  
Outflow=6.90 cfs 0.633 af

**Reach 8R: (new Reach)**

Inflow=0.01 cfs 0.004 af  
Outflow=0.01 cfs 0.004 af

**Total Runoff Area = 3.074 ac Runoff Volume = 0.637 af Average Runoff Depth = 2.49"**  
**100.00% Pervious = 3.074 ac 0.00% Impervious = 0.000 ac**

**19-049 PRE Development**

Type II 24-hr 10-yr Rainfall=5.50"

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**Summary for Subcatchment 1S: Sub Basin #1**

Runoff = 5.01 cfs @ 12.17 hrs, Volume= 0.385 af, Depth> 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-yr Rainfall=5.50"

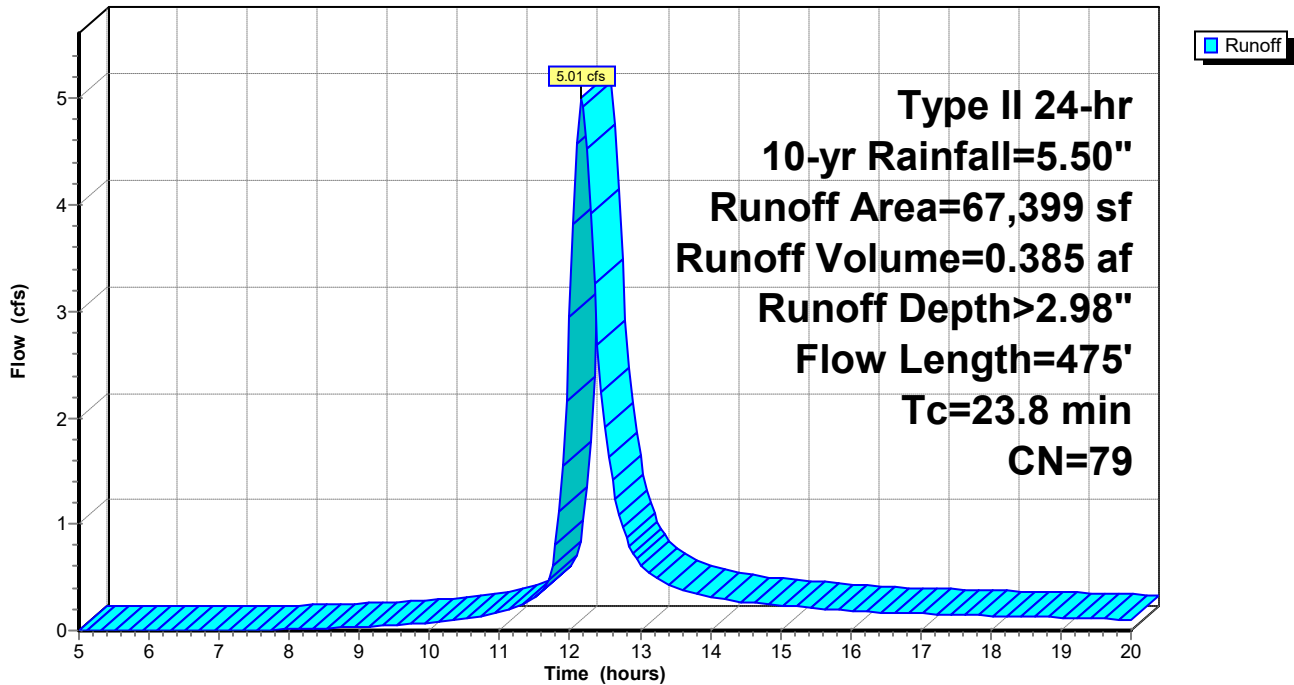
| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 67,399    | 79 | Woods, Fair, HSG D    |
| 67,399    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.0     | 100           | 0.0500        | 0.11              |                | <b>Sheet Flow, Initiated from top of knoll @ 414'</b>      |
| 8.8      | 375           | 0.0200        | 0.71              |                | <b>Shallow Concentrated Flow, Shallow Conc. to wetland</b> |
| 23.8     | 475           | Total         |                   |                | Woodland Kv= 5.0 fps                                       |

**Subcatchment 1S: Sub Basin #1**

Hydrograph



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Type II 24-hr 10-yr Rainfall=5.50"

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**Summary for Subcatchment 2S: Sub Basin #2**

Runoff = 2.40 cfs @ 12.35 hrs, Volume= 0.249 af, Depth> 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-yr Rainfall=5.50"

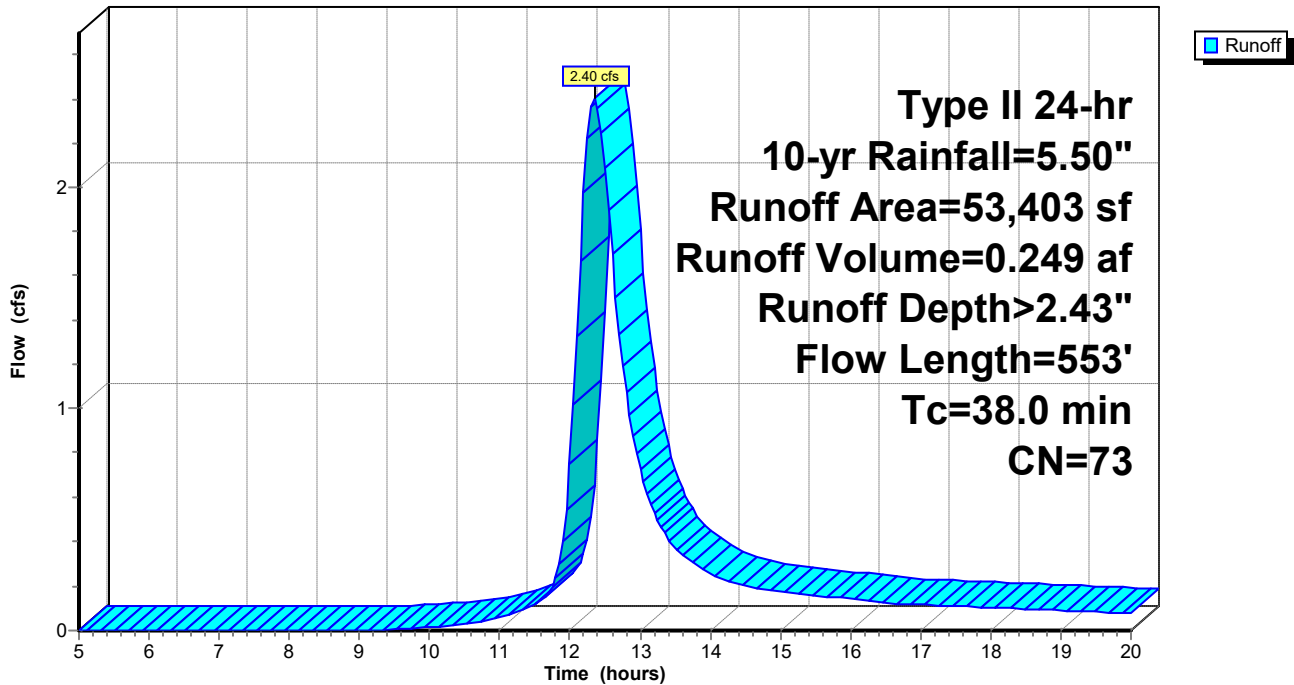
| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 53,403    | 73 | Woods, Fair, HSG C    |
| 53,403    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                                       |
|----------|---------------|---------------|-------------------|----------------|---|
| 28.6     | 100           | 0.0100        | 0.06              |                | <b>Sheet Flow, Initiated from knoll @ 414'</b>    |
| 9.4      | 453           | 0.0260        | 0.81              |                | <b>Woods: Light underbrush n= 0.400 P2= 3.15'</b> |
|          |               |               |                   |                | <b>Shallow Concentrated Flow, To wetland</b>      |
|          |               |               |                   |                | Woodland Kv= 5.0 fps                              |
| 38.0     | 553           | Total         |                   |                |   |

**Subcatchment 2S: Sub Basin #2**

Hydrograph



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Type II 24-hr 10-yr Rainfall=5.50"

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**Summary for Subcatchment 3S: Sub Basin #3**

Runoff = 0.01 cfs @ 12.62 hrs, Volume= 0.004 af, Depth> 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-yr Rainfall=5.50"

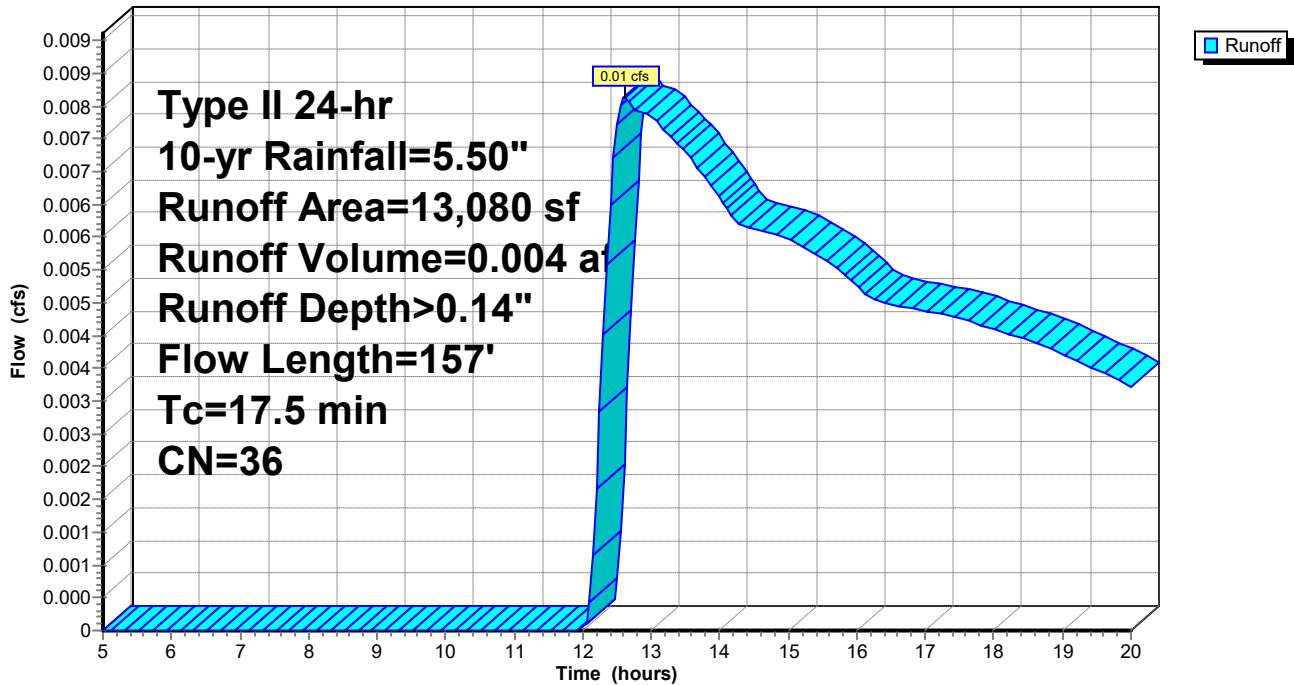
| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| * 13,080  | 36 | Woods, Fair, HSG A    |
| 13,080    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 16.4     | 100           | 0.0400        | 0.10              |                | <b>Sheet Flow, Initiated at knoll @ 414'</b>   |
| 1.1      | 57            | 0.0307        | 0.88              |                | <b>Woods: Light underbrush n= 0.400 P2= 3.15"</b><br><b>Shallow Concentrated Flow, To Jeanne Dr.</b> |
| 17.5     | 157           | Total         |                   |                | <b>Woodland Kv= 5.0 fps</b>  |

**Subcatchment 3S: Sub Basin #3**

Hydrograph



### Summary for Reach 7R: (new Reach)

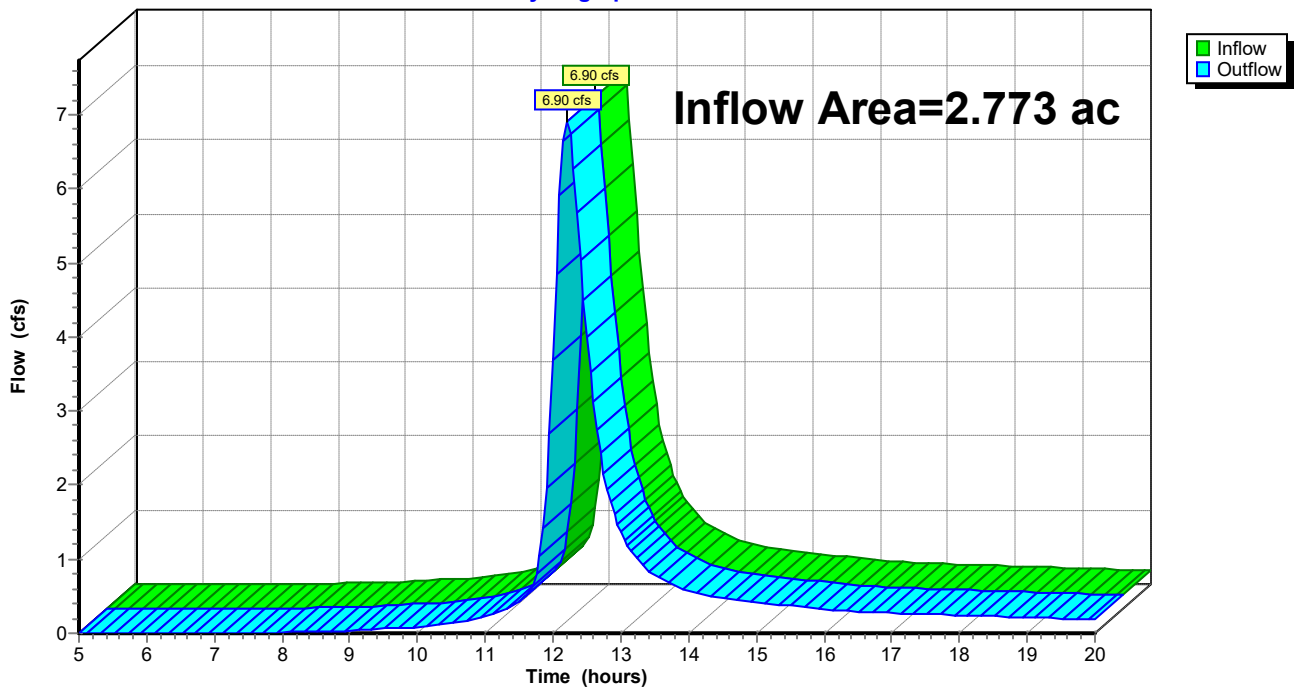
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.773 ac, 0.00% Impervious, Inflow Depth > 2.74" for 10-yr event  
Inflow = 6.90 cfs @ 12.21 hrs, Volume= 0.633 af  
Outflow = 6.90 cfs @ 12.21 hrs, Volume= 0.633 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

### Reach 7R: (new Reach)

Hydrograph



### Summary for Reach 8R: (new Reach)

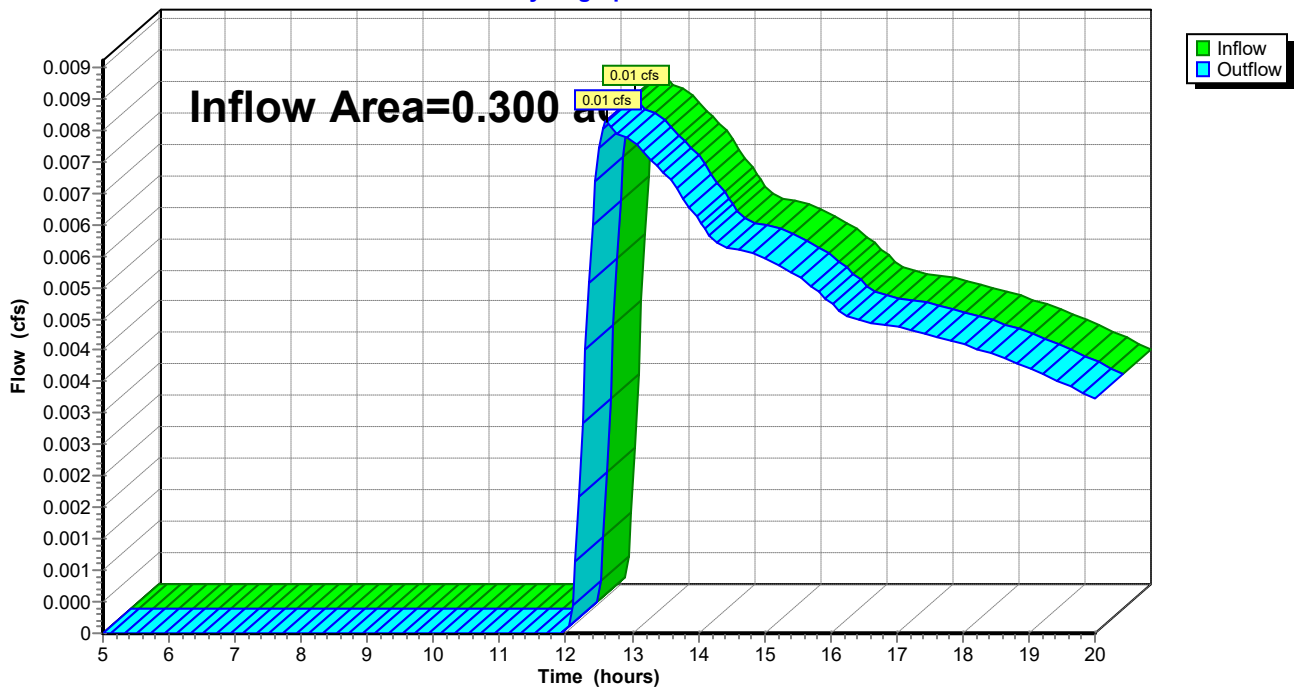
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.300 ac, 0.00% Impervious, Inflow Depth > 0.14" for 10-yr event  
Inflow = 0.01 cfs @ 12.62 hrs, Volume= 0.004 af  
Outflow = 0.01 cfs @ 12.62 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

### Reach 8R: (new Reach)

Hydrograph



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Type II 24-hr 25-yr Rainfall=6.50"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub Basin #1**

Runoff Area=67,399 sf 0.00% Impervious Runoff Depth>3.82"  
Flow Length=475' Tc=23.8 min CN=79 Runoff=6.38 cfs 0.493 af

**Subcatchment 2S: Sub Basin #2**

Runoff Area=53,403 sf 0.00% Impervious Runoff Depth>3.20"  
Flow Length=553' Tc=38.0 min CN=73 Runoff=3.17 cfs 0.327 af

**Subcatchment 3S: Sub Basin #3**

Runoff Area=13,080 sf 0.00% Impervious Runoff Depth>0.33"  
Flow Length=157' Tc=17.5 min CN=36 Runoff=0.04 cfs 0.008 af

**Reach 7R: (new Reach)**

Inflow=8.90 cfs 0.820 af  
Outflow=8.90 cfs 0.820 af

**Reach 8R: (new Reach)**

Inflow=0.04 cfs 0.008 af  
Outflow=0.04 cfs 0.008 af

**Total Runoff Area = 3.074 ac Runoff Volume = 0.828 af Average Runoff Depth = 3.23"**  
**100.00% Pervious = 3.074 ac 0.00% Impervious = 0.000 ac**

**19-049 PRE Development**

Type II 24-hr 25-yr Rainfall=6.50"

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**Summary for Subcatchment 1S: Sub Basin #1**

Runoff = 6.38 cfs @ 12.17 hrs, Volume= 0.493 af, Depth> 3.82"

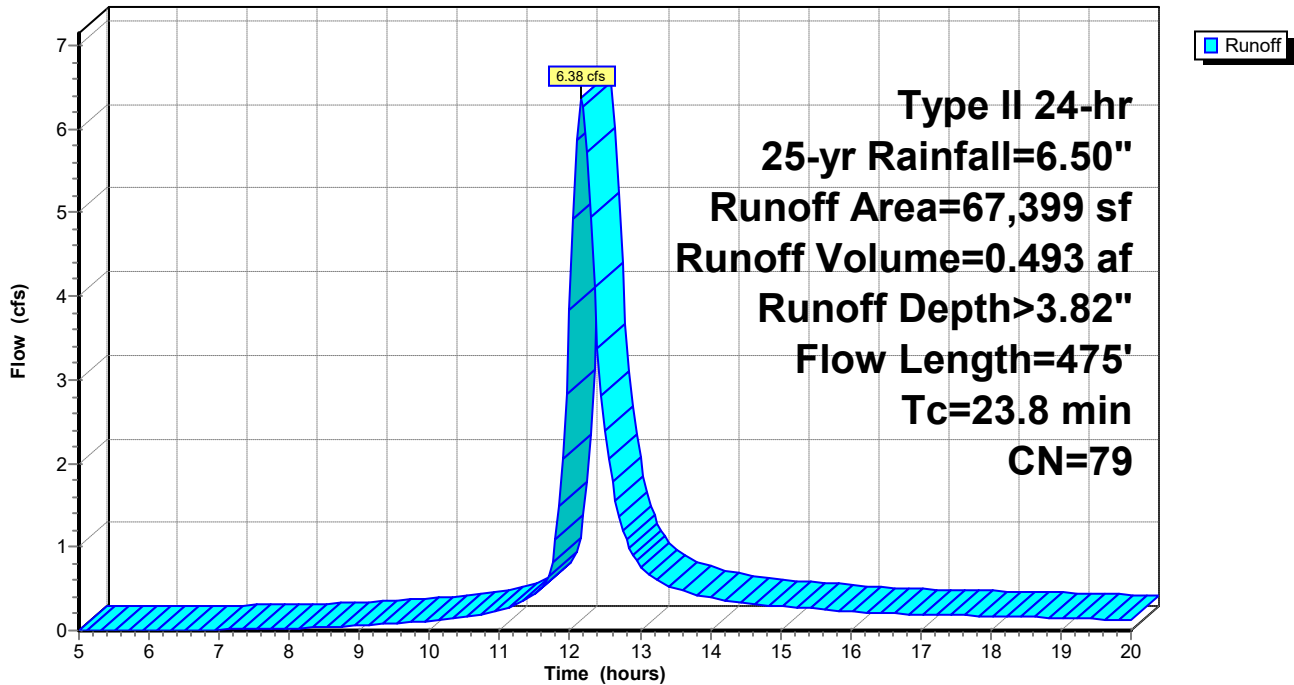
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=6.50"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 67,399    | 79 | Woods, Fair, HSG D    |
| 67,399    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.0     | 100           | 0.0500        | 0.11              |                | <b>Sheet Flow, Initiated from top of knoll @ 414'</b>      |
| 8.8      | 375           | 0.0200        | 0.71              |                | <b>Shallow Concentrated Flow, Shallow Conc. to wetland</b> |
| 23.8     | 475           | Total         |                   |                | Woodland Kv= 5.0 fps                                       |

**Subcatchment 1S: Sub Basin #1**

Hydrograph





# 19-049 PRE Development

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Type II 24-hr 25-yr Rainfall=6.50"

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## Summary for Subcatchment 2S: Sub Basin #2

Runoff = 3.17 cfs @ 12.34 hrs, Volume= 0.327 af, Depth> 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 25-yr Rainfall=6.50"

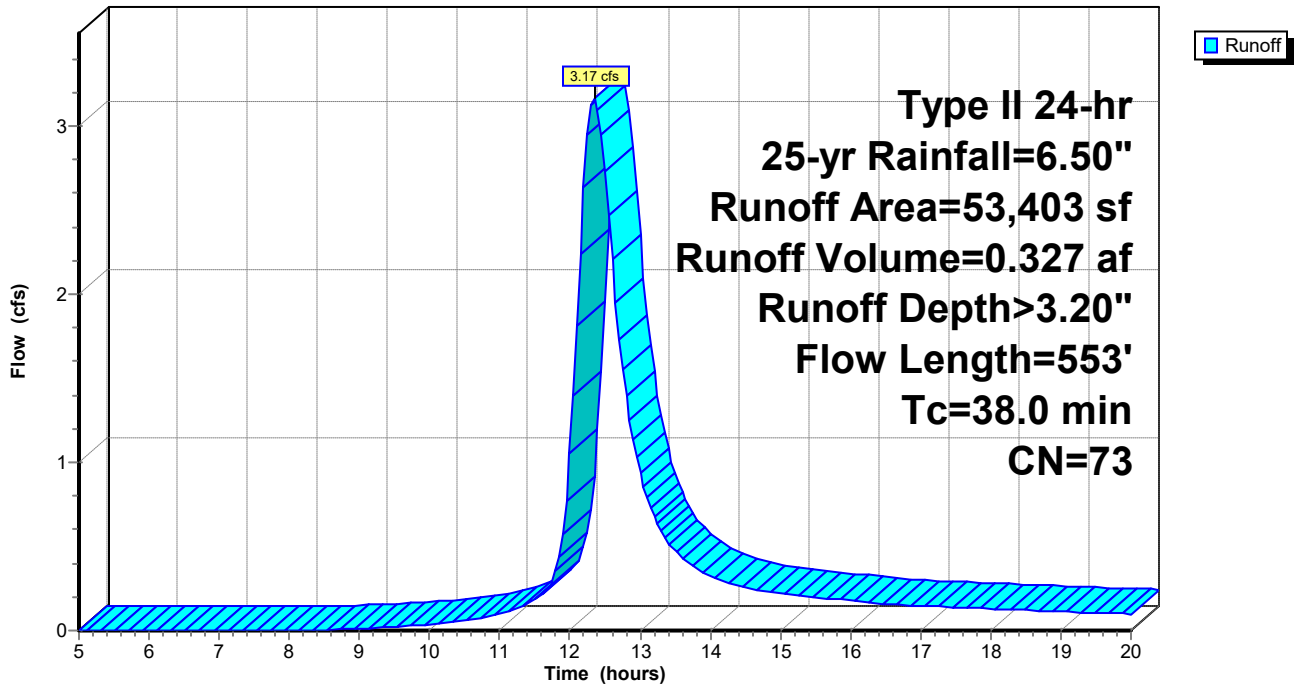
| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 53,403    | 73 | Woods, Fair, HSG C    |
| 53,403    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                                    |
|----------|---------------|---------------|-------------------|----------------|--|
| 28.6     | 100           | 0.0100        | 0.06              |                | <b>Sheet Flow, Initiated from knoll @ 414'</b> |
| 9.4      | 453           | 0.0260        | 0.81              |                | <b>Shallow Concentrated Flow, To wetland</b>   |
| 38.0     | 553           | Total         |                   |                | Woodland Kv= 5.0 fps                           |

## Subcatchment 2S: Sub Basin #2

Hydrograph



**19-049 PRE Development**

Type II 24-hr 25-yr Rainfall=6.50"

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**Summary for Subcatchment 3S: Sub Basin #3**

Runoff = 0.04 cfs @ 12.21 hrs, Volume= 0.008 af, Depth> 0.33"

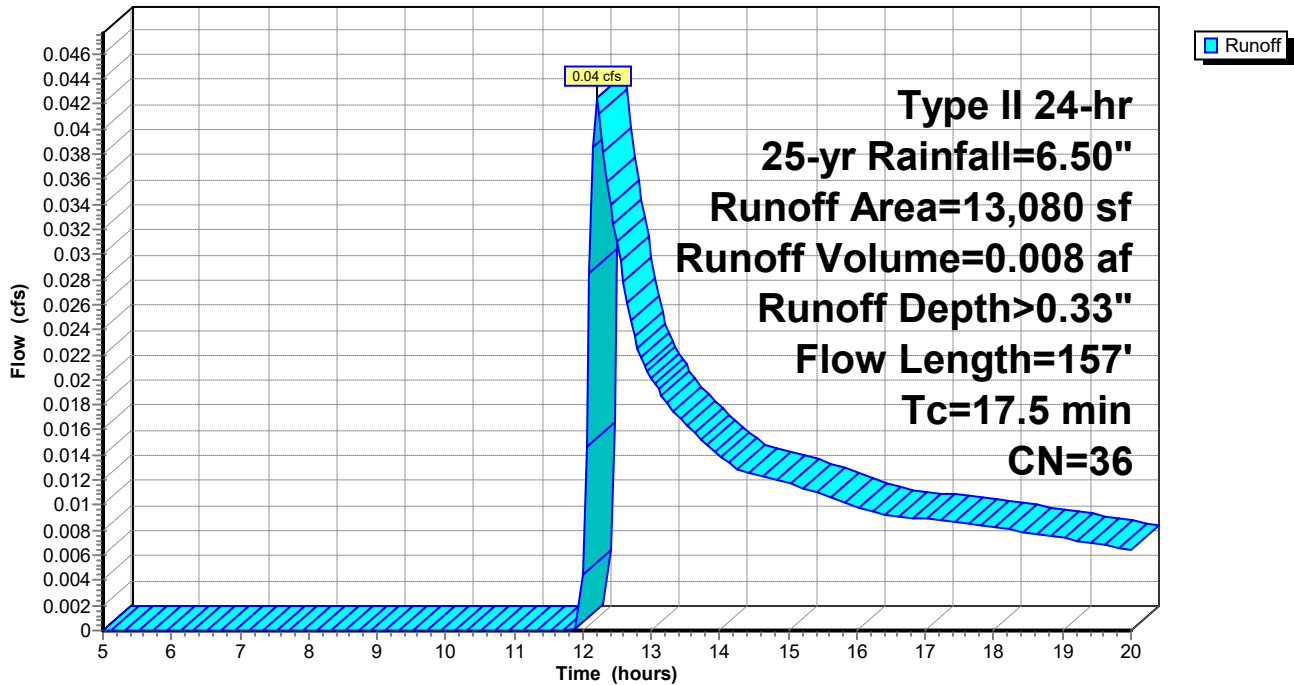
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 25-yr Rainfall=6.50"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| * 13,080  | 36 | Woods, Fair, HSG A    |
| 13,080    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 16.4     | 100           | 0.0400        | 0.10              |                | <b>Sheet Flow, Initiated at knoll @ 414'</b>  |
| 1.1      | 57            | 0.0307        | 0.88              |                | Woods: Light underbrush n= 0.400 P2= 3.15"<br><b>Shallow Concentrated Flow, To Jeanne Dr.</b> |
| 17.5     | 157           | Total         |                   |                | Woodland Kv= 5.0 fps  |

**Subcatchment 3S: Sub Basin #3**

Hydrograph



### Summary for Reach 7R: (new Reach)

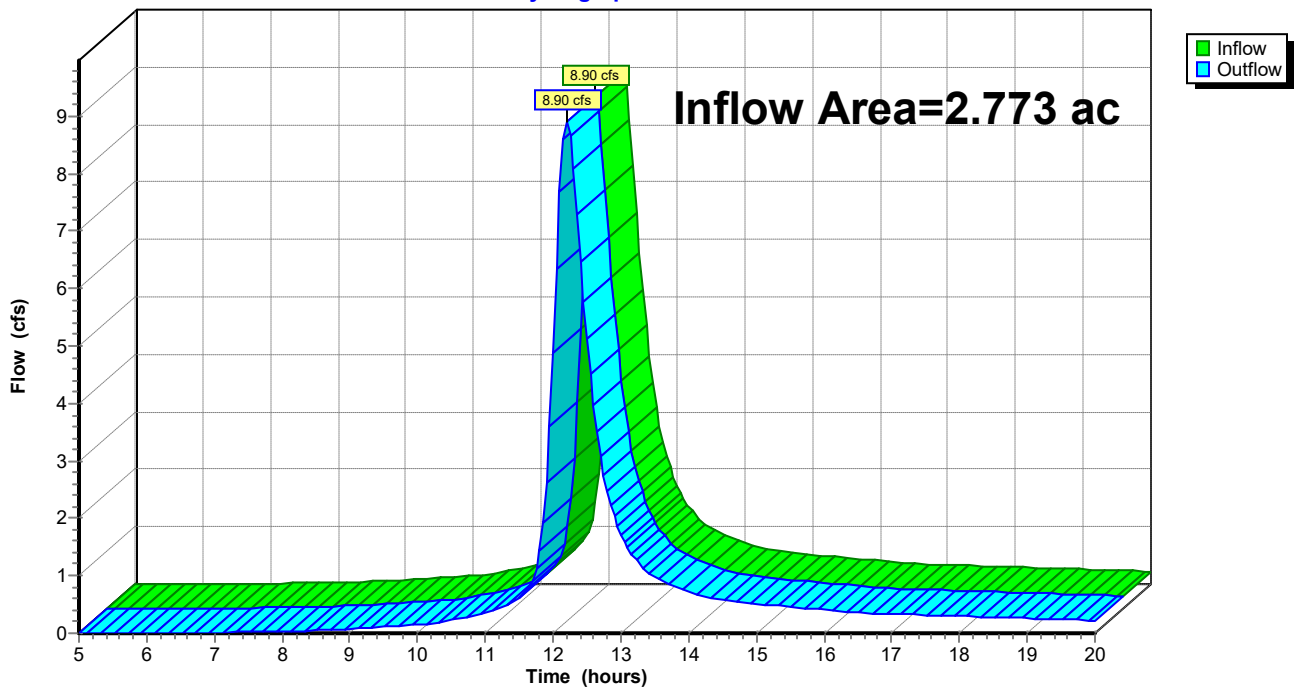
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.773 ac, 0.00% Impervious, Inflow Depth > 3.55" for 25-yr event  
Inflow = 8.90 cfs @ 12.20 hrs, Volume= 0.820 af  
Outflow = 8.90 cfs @ 12.20 hrs, Volume= 0.820 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

### Reach 7R: (new Reach)

Hydrograph



### Summary for Reach 8R: (new Reach)

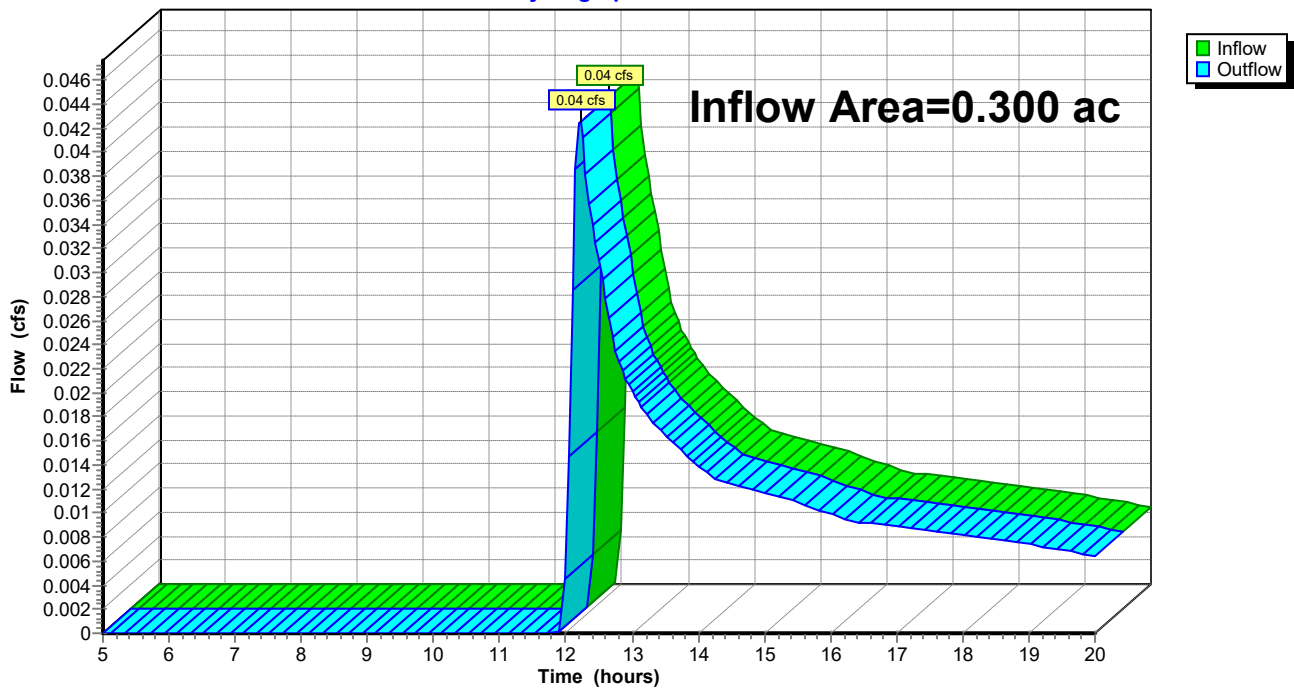
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.300 ac, 0.00% Impervious, Inflow Depth > 0.33" for 25-yr event  
Inflow = 0.04 cfs @ 12.21 hrs, Volume= 0.008 af  
Outflow = 0.04 cfs @ 12.21 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

### Reach 8R: (new Reach)

Hydrograph



**19-049 PRE Development**

Type II 24-hr 100-yr Rainfall=8.00"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub Basin #1**

Runoff Area=67,399 sf 0.00% Impervious Runoff Depth>5.12"  
Flow Length=475' Tc=23.8 min CN=79 Runoff=8.46 cfs 0.660 af

**Subcatchment 2S: Sub Basin #2**

Runoff Area=53,403 sf 0.00% Impervious Runoff Depth>4.42"  
Flow Length=553' Tc=38.0 min CN=73 Runoff=4.36 cfs 0.451 af

**Subcatchment 3S: Sub Basin #3**

Runoff Area=13,080 sf 0.00% Impervious Runoff Depth>0.75"  
Flow Length=157' Tc=17.5 min CN=36 Runoff=0.18 cfs 0.019 af

**Reach 7R: (new Reach)**

Inflow=11.96 cfs 1.111 af  
Outflow=11.96 cfs 1.111 af

**Reach 8R: (new Reach)**

Inflow=0.18 cfs 0.019 af  
Outflow=0.18 cfs 0.019 af

**Total Runoff Area = 3.074 ac Runoff Volume = 1.130 af Average Runoff Depth = 4.41"**  
**100.00% Pervious = 3.074 ac 0.00% Impervious = 0.000 ac**

**19-049 PRE Development**

Type II 24-hr 100-yr Rainfall=8.00"

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**Summary for Subcatchment 1S: Sub Basin #1**

Runoff = 8.46 cfs @ 12.17 hrs, Volume= 0.660 af, Depth> 5.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 100-yr Rainfall=8.00"

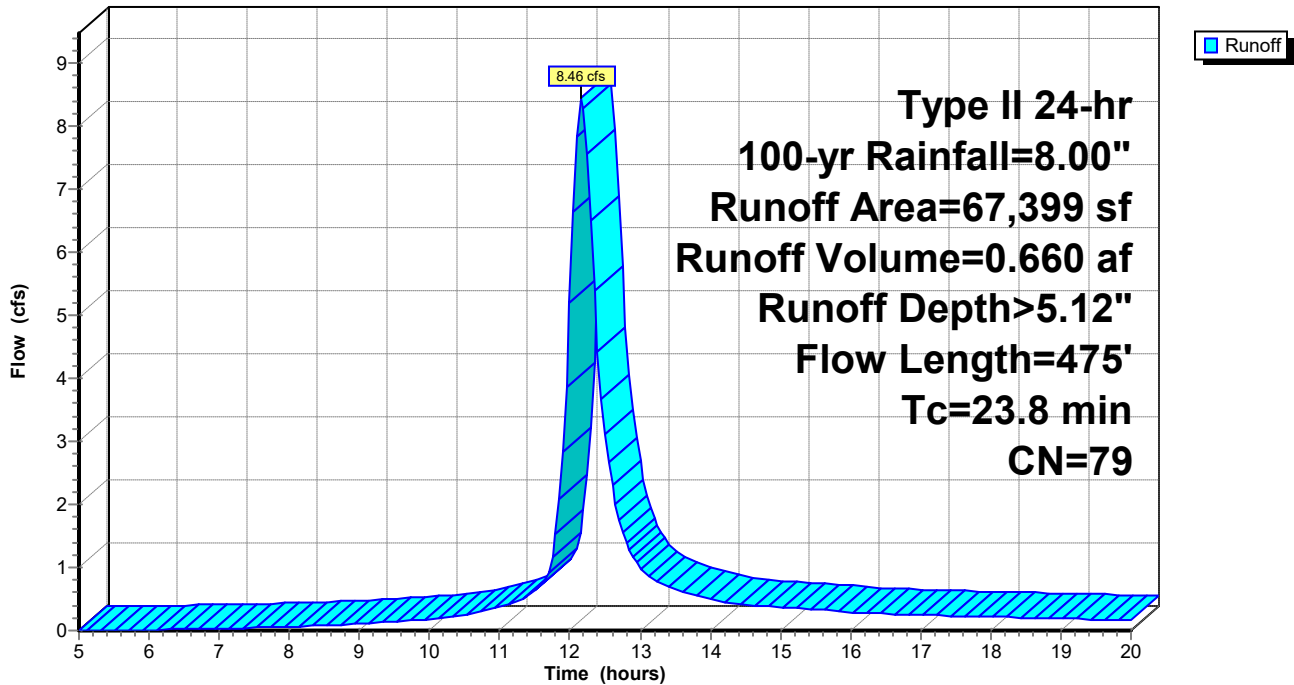
| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 67,399    | 79 | Woods, Fair, HSG D    |
| 67,399    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.0     | 100           | 0.0500        | 0.11              |                | <b>Sheet Flow, Initiated from top of knoll @ 414'</b>      |
| 8.8      | 375           | 0.0200        | 0.71              |                | <b>Woods: Light underbrush n= 0.400 P2= 3.15"</b>          |
|          |               |               |                   |                | <b>Shallow Concentrated Flow, Shallow Conc. to wetland</b> |
|          |               |               |                   |                | <b>Woodland Kv= 5.0 fps</b>                                |
| 23.8     | 475           | Total         |                   |                |  |

**Subcatchment 1S: Sub Basin #1**

Hydrograph



**19-049 PRE Development**

Type II 24-hr 100-yr Rainfall=8.00"

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**Summary for Subcatchment 2S: Sub Basin #2**

Runoff = 4.36 cfs @ 12.34 hrs, Volume= 0.451 af, Depth> 4.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 100-yr Rainfall=8.00"

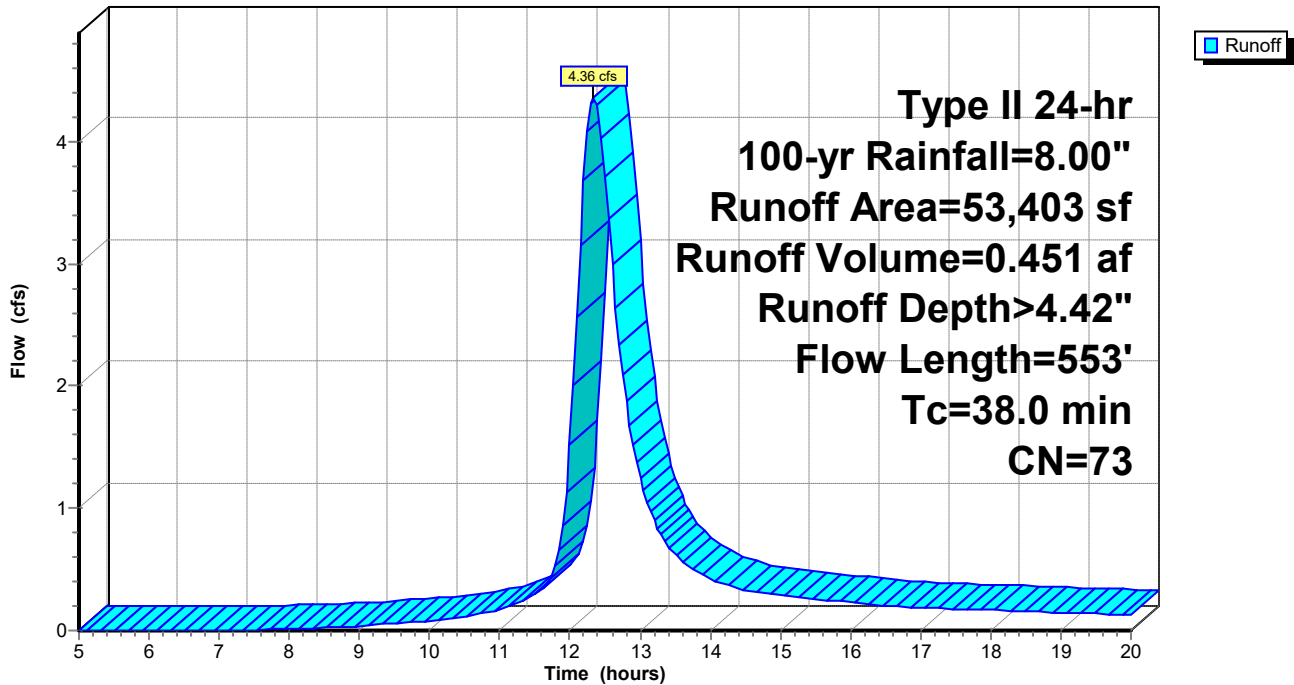
| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 53,403    | 73 | Woods, Fair, HSG C    |
| 53,403    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                                    |
|----------|---------------|---------------|-------------------|----------------|--|
| 28.6     | 100           | 0.0100        | 0.06              |                | <b>Sheet Flow, Initiated from knoll @ 414'</b> |
| 9.4      | 453           | 0.0260        | 0.81              |                | <b>Shallow Concentrated Flow, To wetland</b>   |
| 38.0     | 553           | Total         |                   |                | Woodland Kv= 5.0 fps                           |

**Subcatchment 2S: Sub Basin #2**

Hydrograph



**19-049 PRE Development**

Type II 24-hr 100-yr Rainfall=8.00"

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**Summary for Subcatchment 3S: Sub Basin #3**

Runoff = 0.18 cfs @ 12.16 hrs, Volume= 0.019 af, Depth> 0.75"

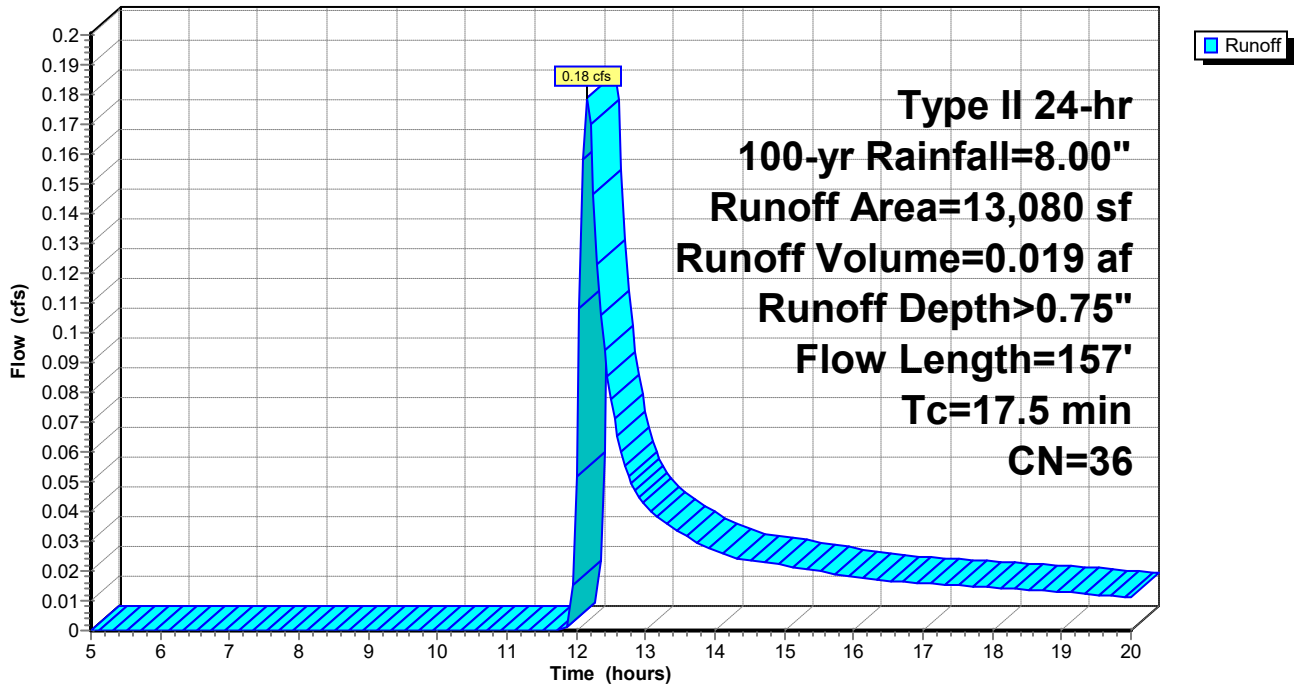
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=8.00"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| * 13,080  | 36 | Woods, Fair, HSG A    |
| 13,080    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 16.4     | 100           | 0.0400        | 0.10              |                | <b>Sheet Flow, Initiated at knoll @ 414'</b>  |
| 1.1      | 57            | 0.0307        | 0.88              |                | Woods: Light underbrush n= 0.400 P2= 3.15"<br><b>Shallow Concentrated Flow, To Jeanne Dr.</b><br>Woodland Kv= 5.0 fps |
| 17.5     | 157           | Total         |                   |                |   |

**Subcatchment 3S: Sub Basin #3**

Hydrograph





### Summary for Reach 7R: (new Reach)

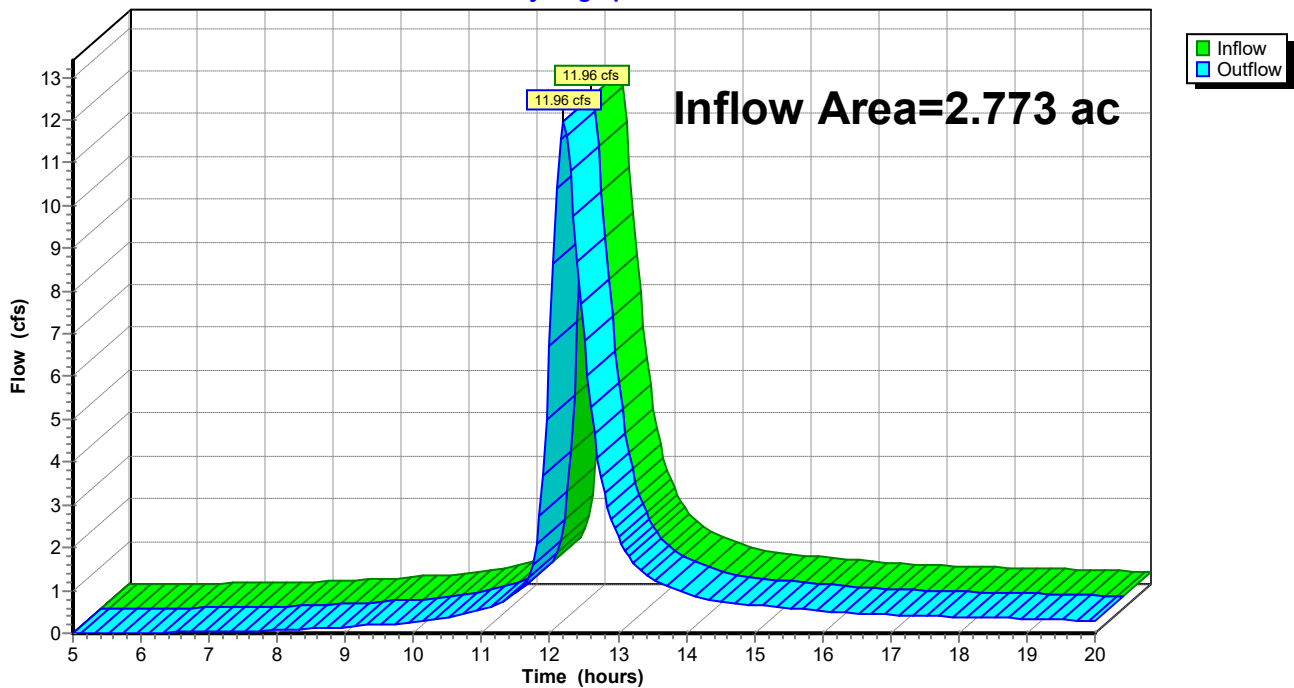
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.773 ac, 0.00% Impervious, Inflow Depth > 4.81" for 100-yr event  
Inflow = 11.96 cfs @ 12.20 hrs, Volume= 1.111 af  
Outflow = 11.96 cfs @ 12.20 hrs, Volume= 1.111 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

### Reach 7R: (new Reach)

Hydrograph



### Summary for Reach 8R: (new Reach)

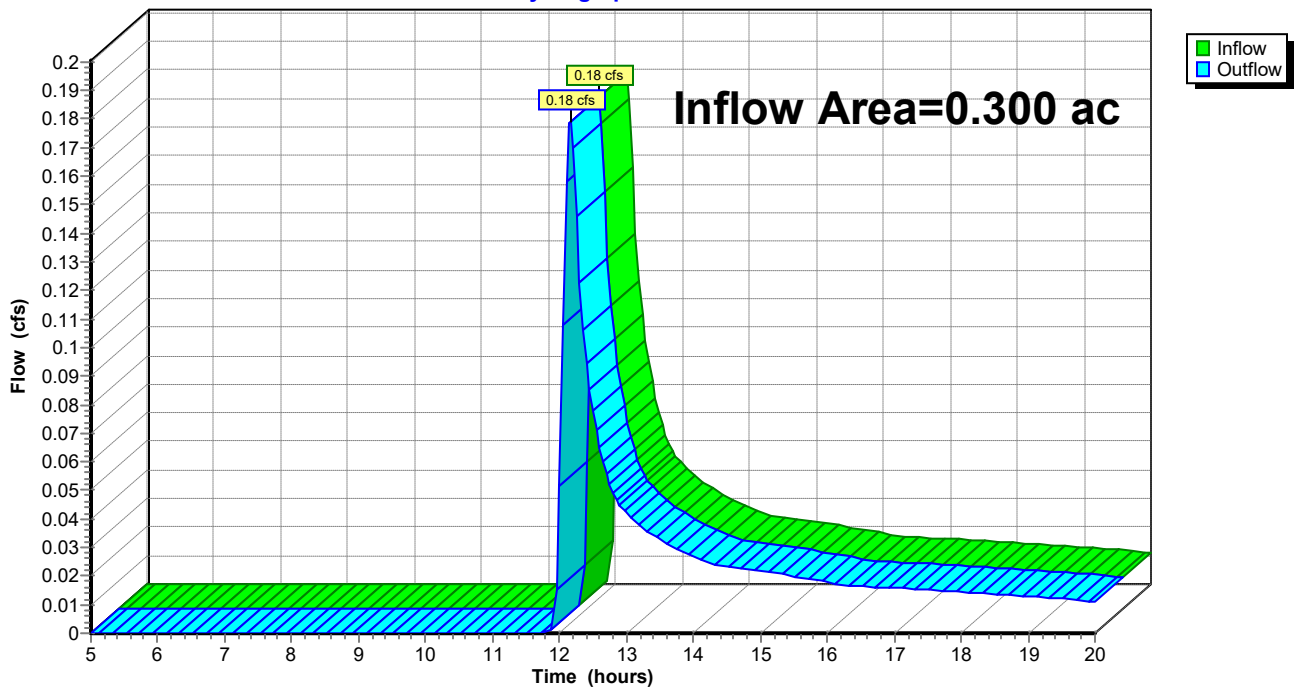
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.300 ac, 0.00% Impervious, Inflow Depth > 0.75" for 100-yr event  
Inflow = 0.18 cfs @ 12.16 hrs, Volume= 0.019 af  
Outflow = 0.18 cfs @ 12.16 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

### Reach 8R: (new Reach)

Hydrograph





Sub Basin #1 Full Building



Cultec 902HD chambers



Combined Sub Basin #2 and #3



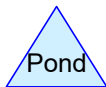
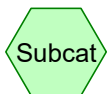
Forbay



Pond #1



Discharge



Routing Diagram for 23-0419.00 - 24 Jeanne Dr, Newburgh, NY - POST Development HydroCAD with Cultec

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## **Project Notes**

Defined 9 rainfall events from NY-Newburgh IDF

**23-0419.00 - 24 Jeanne Dr, Newburgh, NY - POST Development HydroCAD with Cultec**

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**Area Listing (all nodes)**

| Area<br>(acres) | CN        | Description<br>(subcatchment-numbers) |
|-----------------|-----------|---------------------------------------|
| 1.277           | 98        | Roofs, HSG A (1S, 9S)                 |
| 0.574           | 72        | Woods/grass comb., Good, HSG C (9S)   |
| 1.220           | 79        | Woods/grass comb., Good, HSG D (1S)   |
| <b>3.072</b>    | <b>86</b> | <b>TOTAL AREA</b>                     |

**23-0419.00 - 24 Jeanne Dr, Newburgh, NY - POST Development HydroCAD with Cultec**

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**Soil Listing (all nodes)**

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>Numbers |
|-----------------|---------------|-------------------------|
| 1.277           | HSG A         | 1S, 9S                  |
| 0.000           | HSG B         |                         |
| 0.574           | HSG C         | 9S                      |
| 1.220           | HSG D         | 1S                      |
| 0.000           | Other         |                         |
| <b>3.072</b>    |               | <b>TOTAL AREA</b>       |

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**Ground Covers (all nodes)**

| HSG-A<br>(acres) | HSG-B<br>(acres) | HSG-C<br>(acres) | HSG-D<br>(acres) | Other<br>(acres) | Total<br>(acres) | Ground<br>Cover         | Subcatchment<br>Numbers |
|------------------|------------------|------------------|------------------|------------------|------------------|-------------------------|-------------------------|
| 1.277            | 0.000            | 0.000            | 0.000            | 0.000            | 1.277            | Roofs                   | 1S, 9S                  |
| 0.000            | 0.000            | 0.574            | 1.220            | 0.000            | 1.794            | Woods/grass comb., Good | 1S, 9S                  |
| <b>1.277</b>     | <b>0.000</b>     | <b>0.574</b>     | <b>1.220</b>     | <b>0.000</b>     | <b>3.072</b>     | <b>TOTAL AREA</b>       |                         |

**23-0419.00 - 24 Jeanne Dr, Newburgh, NY - POST Development HydroCAD with Cultec**

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**Pipe Listing (all nodes)**

| Line# | Node Number | In-Invert (feet) | Out-Invert (feet) | Length (feet) | Slope (ft/ft) | n     | Diam/Width (inches) | Height (inches) | Inside-Fill (inches) |
|-------|-------------|------------------|-------------------|---------------|---------------|-------|---------------------|-----------------|----------------------|
| 1     | 9S          | 0.00             | 0.00              | 560.0         | 0.0100        | 0.010 | 15.0                | 0.0             | 12.0                 |
| 2     | 7P          | 399.00           | 398.50            | 40.0          | 0.0125        | 0.010 | 15.0                | 0.0             | 10.0                 |
| 3     | 8P          | 401.00           | 400.00            | 30.0          | 0.0333        | 0.010 | 15.0                | 0.0             | 10.0                 |



Time span=3.00-20.00 hrs, dt=0.05 hrs, 341 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub Basin #1 Full** Runoff Area=79,133 sf 32.82% Impervious Runoff Depth>1.38"  
 Flow Length=380' Slope=0.0200 '/' Tc=14.6 min CN=85 Runoff=3.56 cfs 0.209 af

**Subcatchment 9S: Combined Sub Basin** Runoff Area=54,663 sf 54.28% Impervious Runoff Depth>1.46"  
 Flow Length=620' Tc=4.8 min CN=86 Runoff=3.57 cfs 0.152 af

**Reach 8R: Discharge** Inflow=1.25 cfs 0.181 af  
 Outflow=1.25 cfs 0.181 af

**Pond 5P: Forbay** Peak Elev=402.19' Storage=2,207 cf Inflow=3.57 cfs 0.152 af  
 Outflow=3.17 cfs 0.109 af

**Pond 7P: Pond #1** Peak Elev=399.92' Storage=4,764 cf Inflow=3.17 cfs 0.109 af  
 Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

**Pond 8P: Cultec 902HD chambers** Peak Elev=402.54' Storage=3,624 cf Inflow=3.56 cfs 0.209 af  
 Outflow=1.25 cfs 0.181 af

**Total Runoff Area = 3.072 ac Runoff Volume = 0.362 af Average Runoff Depth = 1.41"**  
**58.41% Pervious = 1.794 ac 41.59% Impervious = 1.277 ac**

**Summary for Subcatchment 1S: Sub Basin #1 Full Building**

Runoff = 3.56 cfs @ 12.07 hrs, Volume= 0.209 af, Depth> 1.38"

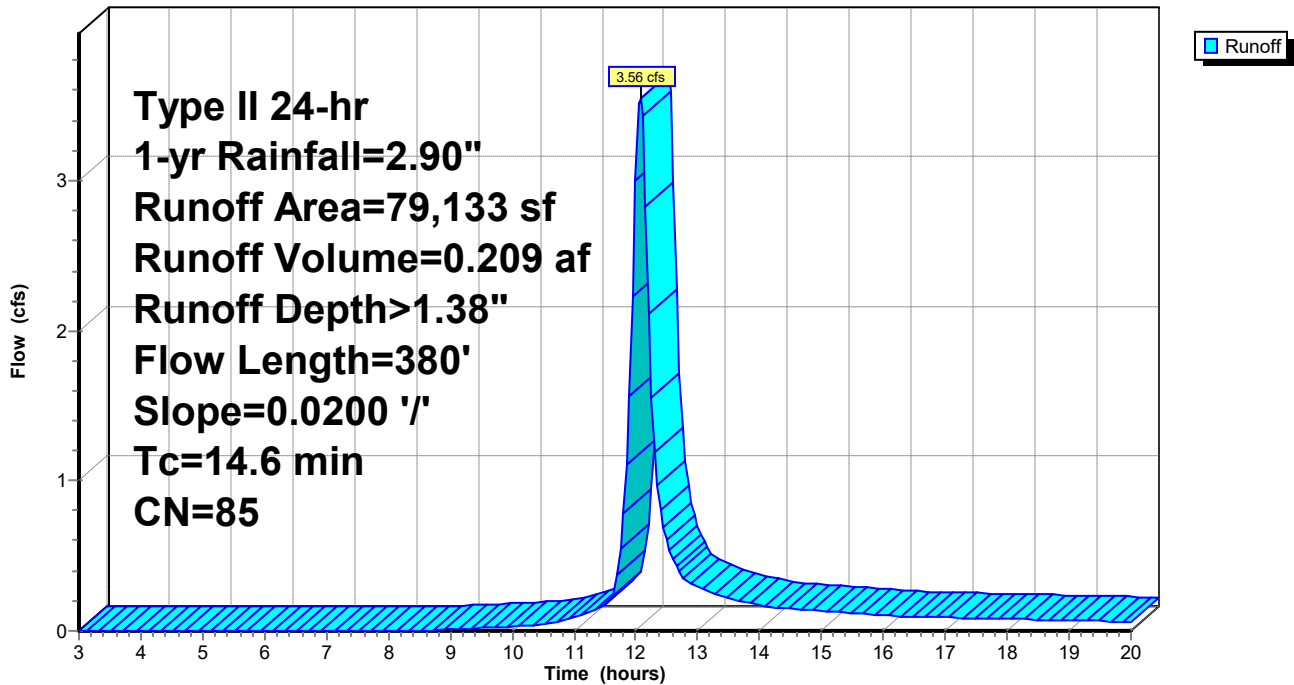
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.90"

| Area (sf) | CN | Description                    |
|-----------|----|--------------------------------|
| 53,162    | 79 | Woods/grass comb., Good, HSG D |
| 25,971    | 98 | Roofs, HSG A                   |
| 79,133    | 85 | Weighted Average               |
| 53,162    |    | 67.18% Pervious Area           |
| 25,971    |    | 32.82% Impervious Area         |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 9.9      | 100           | 0.0200        | 0.17              |                | <b>Sheet Flow, Initiated from top of knoll @ 414'</b><br>Grass: Short n= 0.150 P2= 3.15"   |
| 4.7      | 280           | 0.0200        | 0.99              |                | <b>Shallow Concentrated Flow, Shallow Conc. to Pond</b><br>Short Grass Pasture Kv= 7.0 fps |
| 14.6     | 380           | Total         |                   |                |  |

**Subcatchment 1S: Sub Basin #1 Full Building**

Hydrograph



**Summary for Subcatchment 9S: Combined Sub Basin #2 and #3**

[49] Hint: Tc<2dt may require smaller dt

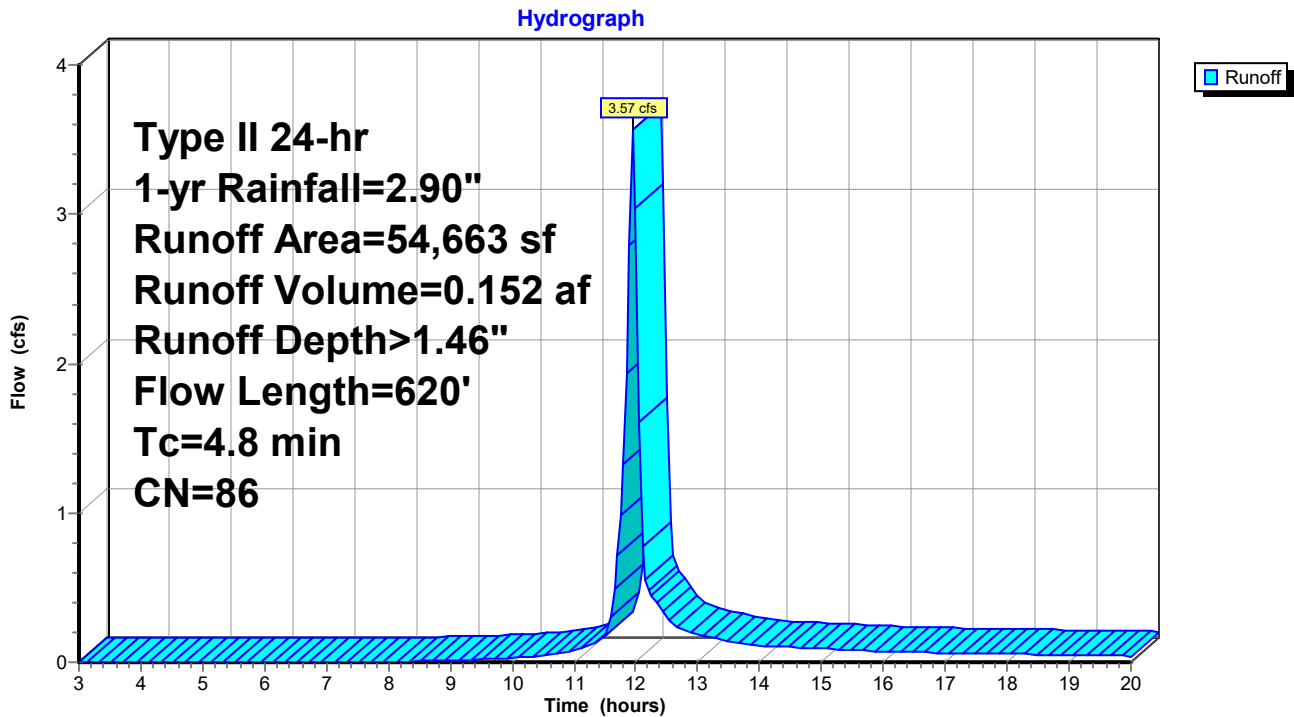
Runoff = 3.57 cfs @ 11.95 hrs, Volume= 0.152 af, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.90"

| Area (sf) | CN | Description                    |
|-----------|----|--------------------------------|
| 24,993    | 72 | Woods/grass comb., Good, HSG C |
| 29,670    | 98 | Roofs, HSG A                   |
| 54,663    | 86 | Weighted Average               |
| 24,993    |    | 45.72% Pervious Area           |
| 29,670    |    | 54.28% Impervious Area         |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 1.4      | 60            | 0.0050        | 0.71              |                | <b>Sheet Flow, Sheet to CB</b><br>Smooth surfaces n= 0.011 P2= 3.15"  |
| 3.4      | 560           | 0.0100        | 2.78              | 0.49           | <b>Pipe Channel, CB to Swale</b><br>15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08'<br>n= 0.010 Corrugated PE, smooth interior |
| 4.8      | 620           | Total         |                   |                |   |

**Subcatchment 9S: Combined Sub Basin #2 and #3**



### Summary for Reach 8R: Discharge

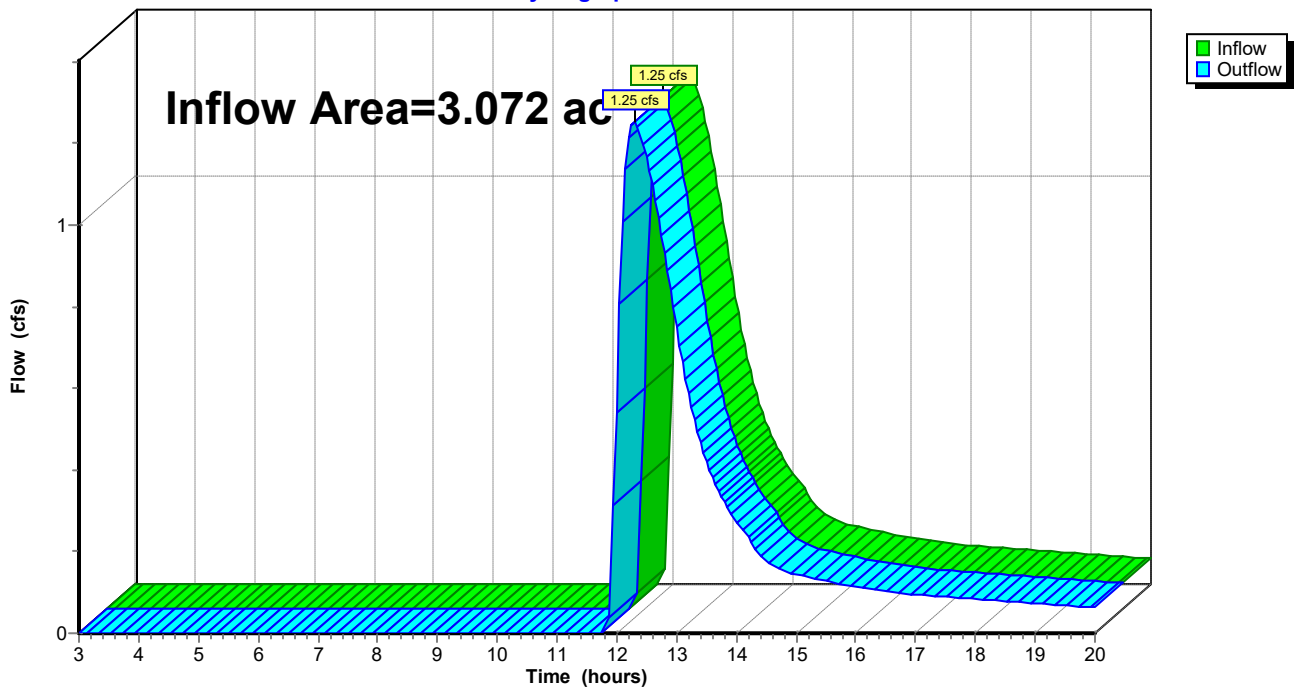
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.072 ac, 41.59% Impervious, Inflow Depth > 0.71" for 1-yr event  
Inflow = 1.25 cfs @ 12.30 hrs, Volume= 0.181 af  
Outflow = 1.25 cfs @ 12.30 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs

### Reach 8R: Discharge

Hydrograph



**Summary for Pond 5P: Forbay**

Inflow Area = 1.255 ac, 54.28% Impervious, Inflow Depth > 1.46" for 1-yr event  
 Inflow = 3.57 cfs @ 11.95 hrs, Volume= 0.152 af  
 Outflow = 3.17 cfs @ 11.99 hrs, Volume= 0.109 af, Atten= 11%, Lag= 2.3 min  
 Primary = 3.17 cfs @ 11.99 hrs, Volume= 0.109 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 402.19' @ 11.99 hrs Surf.Area= 2,014 sf Storage= 2,207 cf

Plug-Flow detention time= 104.8 min calculated for 0.109 af (72% of inflow)  
 Center-of-Mass det. time= 38.4 min ( 820.4 - 782.0 )

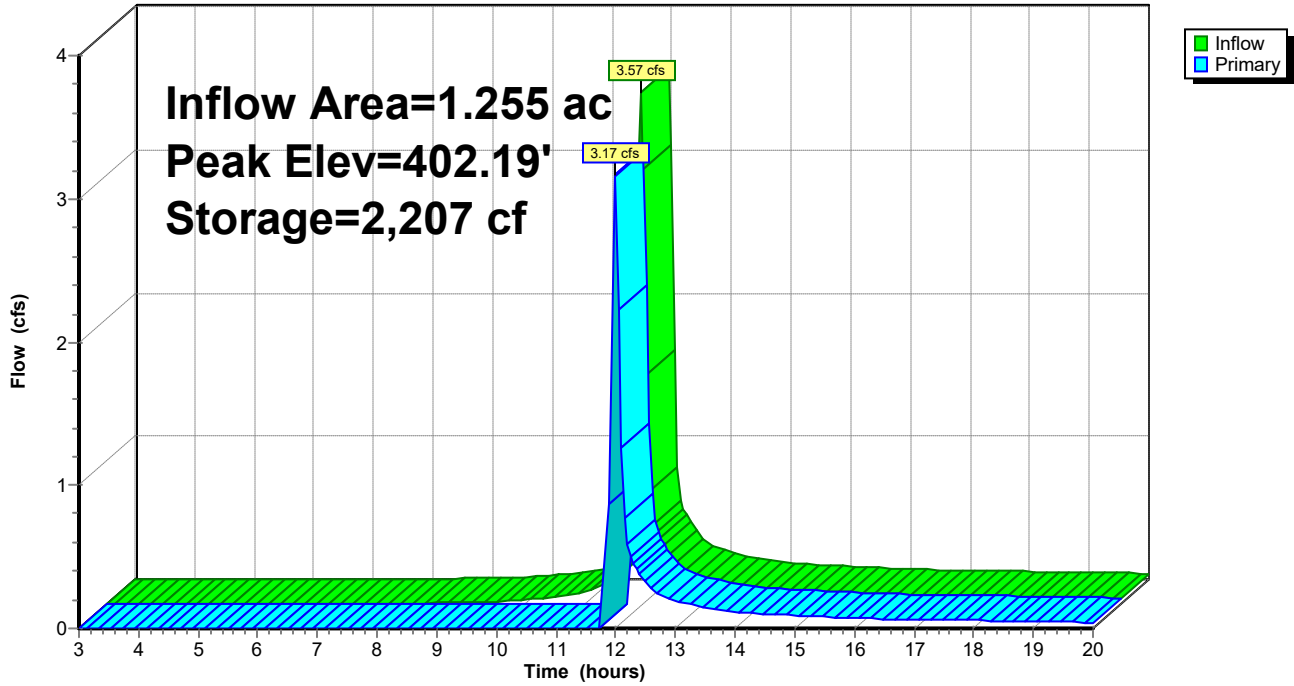
| Volume           | Invert            | Avail.Storage | Storage Description  |                        |                  |  |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1               | 400.00'           | 4,089 cf      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                        |                  |  |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet)                                     | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |  |
| 400.00           | 174               | 90.0          | 0  | 0                      | 174              |  |
| 401.00           | 885               | 191.0         | 484  | 484                    | 2,437            |  |
| 402.00           | 1,872             | 242.0         | 1,348  | 1,832                  | 4,207            |  |
| 403.00           | 2,666             | 286.0         | 2,257  | 4,089                  | 6,075            |  |

| Device | Routing | Invert  | Outlet Devices   |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 402.00' | <b>15.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60              |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64          |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=3.08 cfs @ 11.99 hrs HW=402.19' TW=402.00' (Fixed TW Elev= 402.00')  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 3.08 cfs @ 1.08 fps)

### Pond 5P: Forbay

Hydrograph



**Summary for Pond 7P: Pond #1**

Inflow Area = 1.255 ac, 54.28% Impervious, Inflow Depth > 1.05" for 1-yr event  
 Inflow = 3.17 cfs @ 11.99 hrs, Volume= 0.109 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af  
 Secondary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 399.92' @ 20.00 hrs Surf.Area= 7,291 sf Storage= 4,764 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               | 399.00'           | 35,384 cf     | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                        |                  |  |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet)                                     | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |  |
| 399.00           | 3,312             | 238.0         | 0  | 0                      | 3,312            |  |
| 400.00           | 7,705             | 347.0         | 5,356  | 5,356                  | 8,395            |  |
| 401.00           | 9,173             | 380.0         | 8,428  | 13,785                 | 10,338           |  |
| 402.00           | 10,783            | 414.0         | 9,967  | 23,752                 | 12,523           |  |
| 403.00           | 12,502            | 422.0         | 11,632   | 35,384                 | 13,200           |  |

| Device | Routing   | Invert  | Outlet Devices   |  |
|--------|-----------|---------|--|--|
| #1     | Primary   | 399.83' | <b>15.0" Round Culvert w/ 10.0" inside fill</b> L= 40.0' Ke= 0.500<br>Inlet / Outlet Invert= 399.00' / 398.50' S= 0.0125'/' Cc= 0.900<br>n= 0.010, Flow Area= 0.36 sf              |  |
| #2     | Device 1  | 400.50' | <b>2.0" Vert. Orifice/Grate</b> C= 0.600   |  |
| #3     | Device 1  | 401.25' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600   |  |
| #4     | Device 1  | 401.75' | <b>7.5' long Sharp-Crested Rectangular Weir</b> 0 End Contraction(s)<br>0.5' Crest Height  |  |
| #5     | Secondary | 402.00' | <b>15.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=399.00' (Free Discharge)

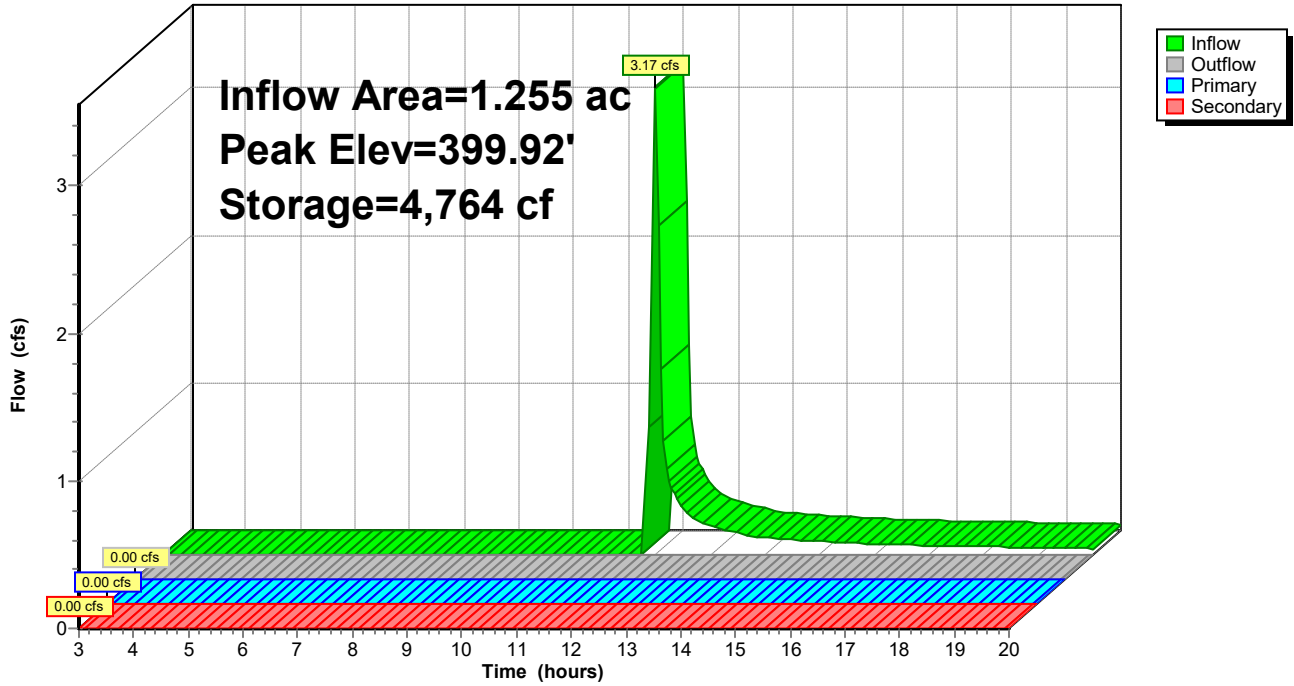
- ↑ 1=Culvert ( Controls 0.00 cfs)
- ↑ 2=Orifice/Grate ( Controls 0.00 cfs)
- ↑ 3=Orifice/Grate ( Controls 0.00 cfs)
- ↑ 4=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=399.00' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

### Pond 7P: Pond #1

Hydrograph





**Summary for Pond 8P: Cultec 902HD chambers**

Inflow Area = 1.817 ac, 32.82% Impervious, Inflow Depth > 1.38" for 1-yr event  
 Inflow = 3.56 cfs @ 12.07 hrs, Volume= 0.209 af  
 Outflow = 1.25 cfs @ 12.30 hrs, Volume= 0.181 af, Atten= 65%, Lag= 13.7 min  
 Primary = 1.25 cfs @ 12.30 hrs, Volume= 0.181 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 402.54' @ 12.30 hrs Surf.Area= 4,800 sf Storage= 3,624 cf

Plug-Flow detention time= 80.0 min calculated for 0.180 af (86% of inflow)  
 Center-of-Mass det. time= 38.2 min ( 830.7 - 792.5 )

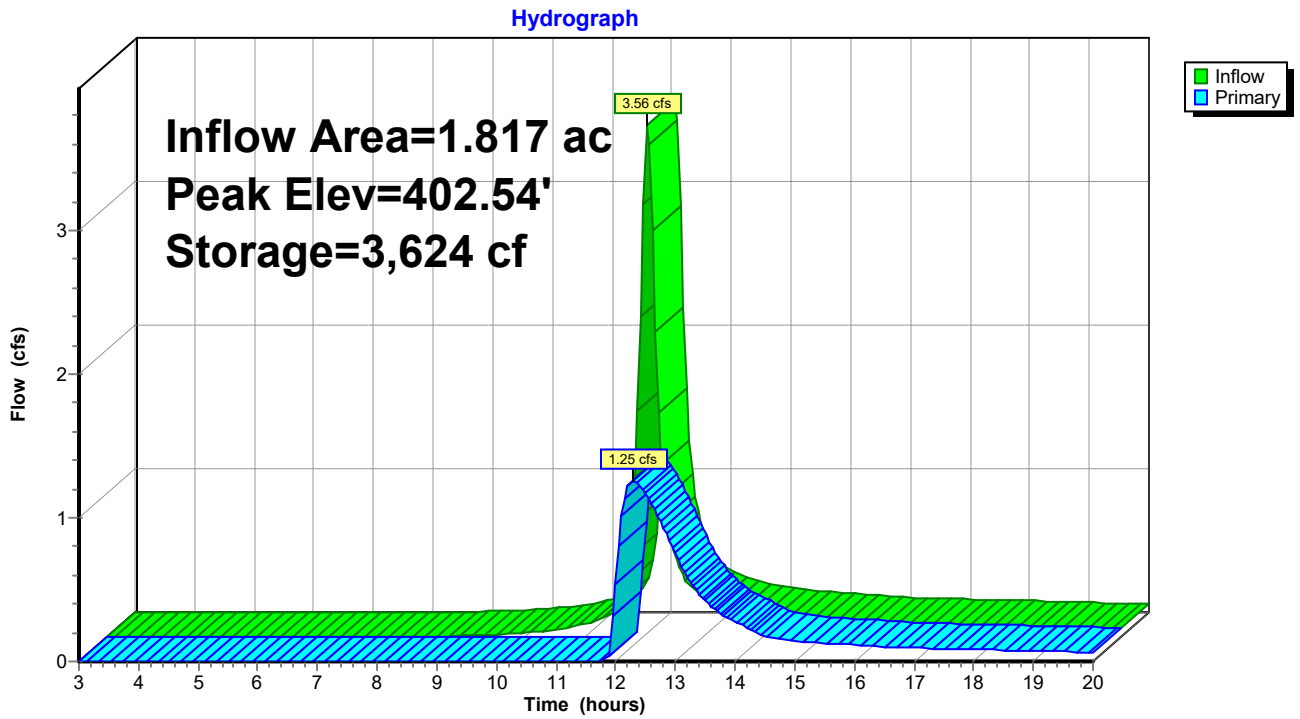
| Volume | Invert  | Avail.Storage | Storage Description   |
|--------|---------|---------------|---|
| #1     | 401.25' | 6,677 cf      | <b>Stone Envelope (Prismatic)</b> Listed below (Recalc)<br>27,600 cf Overall - 10,909 cf Embedded = 16,691 cf x 40.0% Voids   |
| #2     | 402.00' | 10,909 cf     | <b>Cultec R-902HD</b> x 168 Inside #1<br>Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf<br>Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap<br>168 Chambers in 6 Rows<br>Cap Storage= +2.8 cf x 2 x 6 rows = 33.1 cf |
|        |         | 17,585 cf     | Total Available Storage   |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 401.25           | 4,800             | 0                      | 0                      |
| 407.00           | 4,800             | 27,600                 | 27,600                 |

| Device | Routing | Invert  | Outlet Devices   |
|--------|---------|---------|--|
| #1     | Primary | 401.83' | <b>15.0" Round Culvert w/ 10.0" inside fill</b> L= 30.0' Ke= 0.500<br>Inlet / Outlet Invert= 401.00' / 400.00' S= 0.0333 '/' Cc= 0.900<br>n= 0.010, Flow Area= 0.36 sf |
| #2     | Primary | 403.00' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600   |
| #3     | Primary | 404.00' | <b>2.0" Vert. Orifice/Grate</b> C= 0.600   |

**Primary OutFlow** Max=1.25 cfs @ 12.30 hrs HW=402.54' (Free Discharge)  
 1=Culvert (Inlet Controls 1.25 cfs @ 3.50 fps)  
 2=Orifice/Grate ( Controls 0.00 cfs)  
 3=Orifice/Grate ( Controls 0.00 cfs)

### Pond 8P: Cultec 902HD chambers



Time span=3.00-20.00 hrs, dt=0.05 hrs, 341 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub Basin #1 Full** Runoff Area=79,133 sf 32.82% Impervious Runoff Depth>3.57"  
Flow Length=380' Slope=0.0200 '/' Tc=14.6 min CN=85 Runoff=8.89 cfs 0.541 af

**Subcatchment 9S: Combined Sub Basin** Runoff Area=54,663 sf 54.28% Impervious Runoff Depth>3.68"  
Flow Length=620' Tc=4.8 min CN=86 Runoff=8.56 cfs 0.385 af

**Reach 8R: Discharge** Inflow=2.65 cfs 0.543 af  
Outflow=2.65 cfs 0.543 af

**Pond 5P: Forbay** Peak Elev=402.36' Storage=2,545 cf Inflow=8.56 cfs 0.385 af  
Outflow=8.11 cfs 0.343 af

**Pond 7P: Pond #1** Peak Elev=400.97' Storage=13,498 cf Inflow=8.11 cfs 0.343 af  
Primary=0.07 cfs 0.033 af Secondary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.033 af

**Pond 8P: Cultec 902HD chambers** Peak Elev=404.00' Storage=9,306 cf Inflow=8.89 cfs 0.541 af  
Outflow=2.65 cfs 0.510 af

**Total Runoff Area = 3.072 ac Runoff Volume = 0.926 af Average Runoff Depth = 3.62"**  
**58.41% Pervious = 1.794 ac 41.59% Impervious = 1.277 ac**

**Summary for Subcatchment 1S: Sub Basin #1 Full Building**

Runoff = 8.89 cfs @ 12.06 hrs, Volume= 0.541 af, Depth> 3.57"

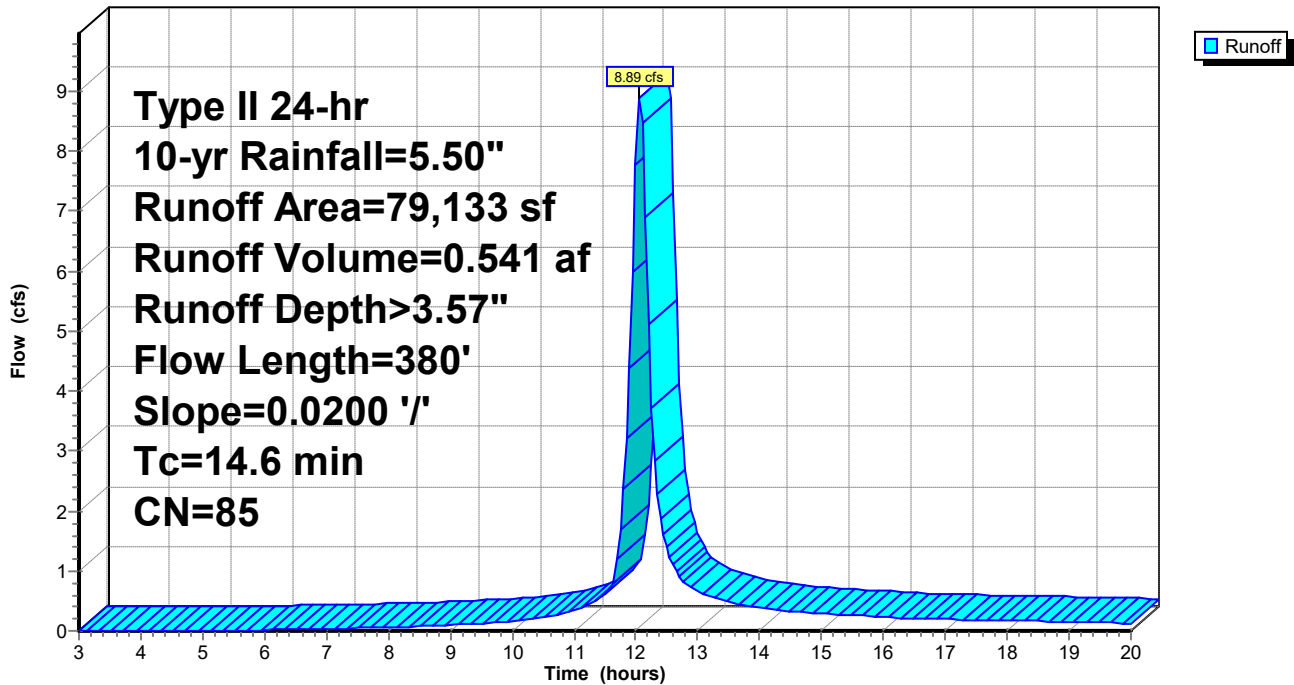
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=5.50"

| Area (sf) | CN | Description                    |
|-----------|----|--------------------------------|
| 53,162    | 79 | Woods/grass comb., Good, HSG D |
| 25,971    | 98 | Roofs, HSG A                   |
| 79,133    | 85 | Weighted Average               |
| 53,162    |    | 67.18% Pervious Area           |
| 25,971    |    | 32.82% Impervious Area         |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 9.9      | 100           | 0.0200        | 0.17              |                | <b>Sheet Flow, Initiated from top of knoll @ 414'</b><br>Grass: Short n= 0.150 P2= 3.15"   |
| 4.7      | 280           | 0.0200        | 0.99              |                | <b>Shallow Concentrated Flow, Shallow Conc. to Pond</b><br>Short Grass Pasture Kv= 7.0 fps |
| 14.6     | 380           | Total         |                   |                |  |

**Subcatchment 1S: Sub Basin #1 Full Building**

Hydrograph



**Summary for Subcatchment 9S: Combined Sub Basin #2 and #3**

[49] Hint: Tc<2dt may require smaller dt

Runoff = 8.56 cfs @ 11.95 hrs, Volume= 0.385 af, Depth> 3.68"

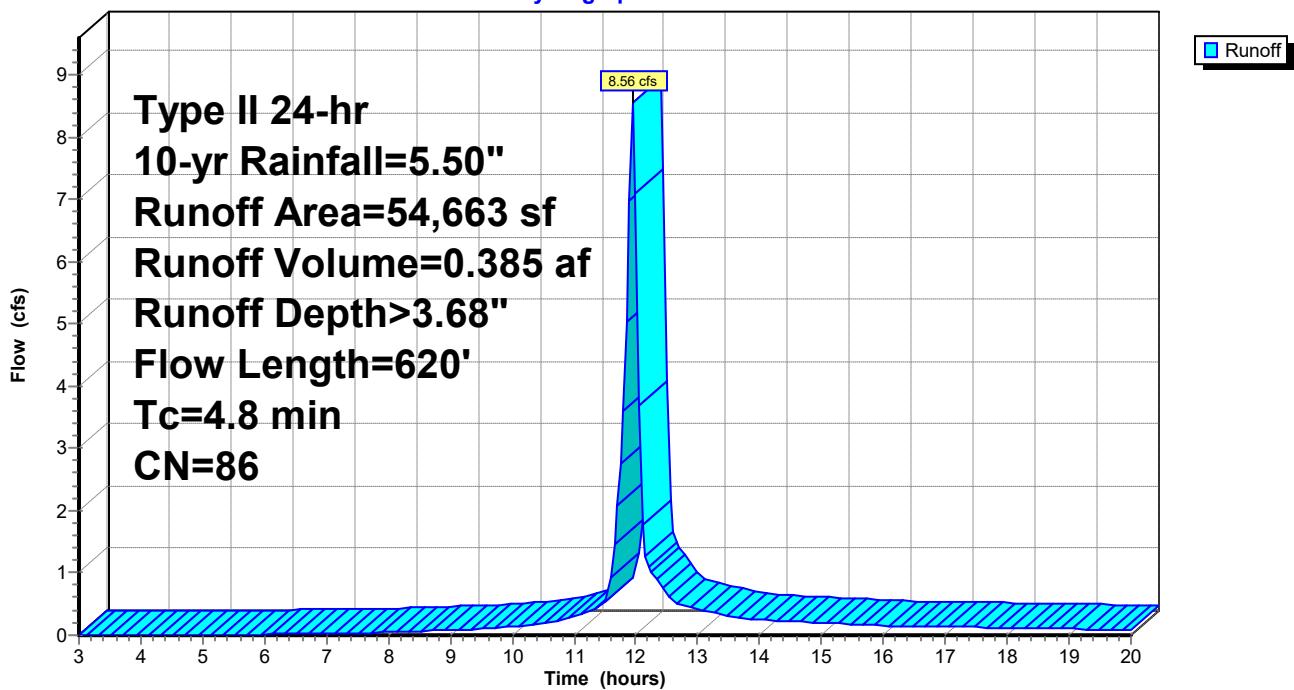
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=5.50"

| Area (sf) | CN | Description                    |
|-----------|----|--------------------------------|
| 24,993    | 72 | Woods/grass comb., Good, HSG C |
| 29,670    | 98 | Roofs, HSG A                   |
| 54,663    | 86 | Weighted Average               |
| 24,993    |    | 45.72% Pervious Area           |
| 29,670    |    | 54.28% Impervious Area         |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 1.4      | 60            | 0.0050        | 0.71              |                | <b>Sheet Flow, Sheet to CB</b><br>Smooth surfaces n= 0.011 P2= 3.15"  |
| 3.4      | 560           | 0.0100        | 2.78              | 0.49           | <b>Pipe Channel, CB to Swale</b><br>15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08'<br>n= 0.010 Corrugated PE, smooth interior |
| 4.8      | 620           | Total         |                   |                |   |

**Subcatchment 9S: Combined Sub Basin #2 and #3**

Hydrograph



### Summary for Reach 8R: Discharge

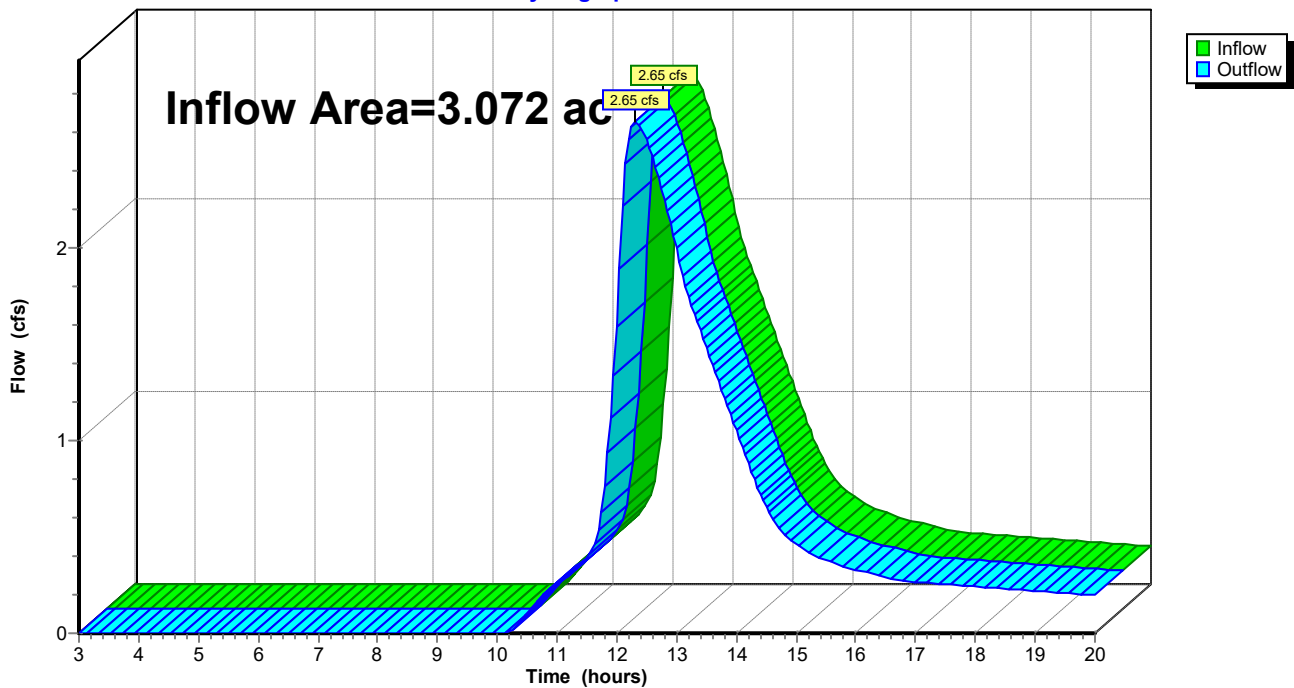
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.072 ac, 41.59% Impervious, Inflow Depth > 2.12" for 10-yr event  
Inflow = 2.65 cfs @ 12.32 hrs, Volume= 0.543 af  
Outflow = 2.65 cfs @ 12.32 hrs, Volume= 0.543 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs

### Reach 8R: Discharge

Hydrograph



**Summary for Pond 5P: Forbay**

Inflow Area = 1.255 ac, 54.28% Impervious, Inflow Depth > 3.68" for 10-yr event  
 Inflow = 8.56 cfs @ 11.95 hrs, Volume= 0.385 af  
 Outflow = 8.11 cfs @ 11.96 hrs, Volume= 0.343 af, Atten= 5%, Lag= 0.8 min  
 Primary = 8.11 cfs @ 11.96 hrs, Volume= 0.343 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 402.36' @ 11.97 hrs Surf.Area= 2,139 sf Storage= 2,545 cf

Plug-Flow detention time= 60.8 min calculated for 0.343 af (89% of inflow)  
 Center-of-Mass det. time= 24.0 min ( 784.9 - 760.9 )

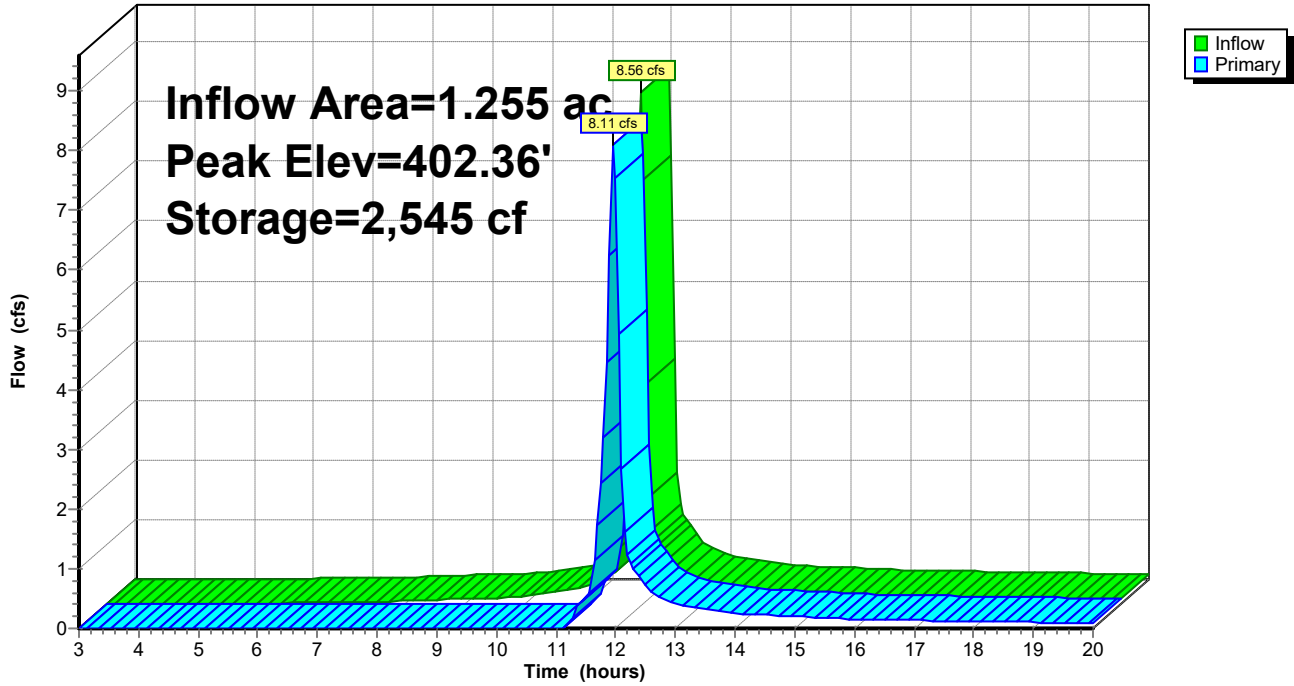
| Volume           | Invert            | Avail.Storage | Storage Description  |                        |                  |  |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1               | 400.00'           | 4,089 cf      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                        |                  |  |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet)                                     | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |  |
| 400.00           | 174               | 90.0          | 0  | 0                      | 174              |  |
| 401.00           | 885               | 191.0         | 484  | 484                    | 2,437            |  |
| 402.00           | 1,872             | 242.0         | 1,348  | 1,832                  | 4,207            |  |
| 403.00           | 2,666             | 286.0         | 2,257  | 4,089                  | 6,075            |  |

| Device | Routing | Invert  | Outlet Devices   |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 402.00' | <b>15.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60              |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64          |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=7.87 cfs @ 11.96 hrs HW=402.35' TW=402.00' (Fixed TW Elev= 402.00')  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 7.87 cfs @ 1.50 fps)

### Pond 5P: Forbay

Hydrograph





**Summary for Pond 7P: Pond #1**

Inflow Area = 1.255 ac, 54.28% Impervious, Inflow Depth > 3.28" for 10-yr event  
 Inflow = 8.11 cfs @ 11.96 hrs, Volume= 0.343 af  
 Outflow = 0.07 cfs @ 20.00 hrs, Volume= 0.033 af, Atten= 99%, Lag= 482.1 min  
 Primary = 0.07 cfs @ 20.00 hrs, Volume= 0.033 af  
 Secondary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 400.97' @ 20.00 hrs Surf.Area= 9,125 sf Storage= 13,498 cf

Plug-Flow detention time= 310.1 min calculated for 0.033 af (10% of inflow)  
 Center-of-Mass det. time= 221.6 min ( 1,006.5 - 784.9 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 399.00' | 35,384 cf     | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 399.00           | 3,312             | 238.0         | 0                      | 0                      | 3,312            |
| 400.00           | 7,705             | 347.0         | 5,356                  | 5,356                  | 8,395            |
| 401.00           | 9,173             | 380.0         | 8,428                  | 13,785                 | 10,338           |
| 402.00           | 10,783            | 414.0         | 9,967                  | 23,752                 | 12,523           |
| 403.00           | 12,502            | 422.0         | 11,632                 | 35,384                 | 13,200           |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 399.83' | <b>15.0" Round Culvert w/ 10.0" inside fill</b> L= 40.0' Ke= 0.500<br>Inlet / Outlet Invert= 399.00' / 398.50' S= 0.0125 '/' Cc= 0.900<br>n= 0.010, Flow Area= 0.36 sf             |
| #2     | Device 1  | 400.50' | <b>2.0" Vert. Orifice/Grate</b> C= 0.600   |
| #3     | Device 1  | 401.25' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600   |
| #4     | Device 1  | 401.75' | <b>7.5' long Sharp-Crested Rectangular Weir</b> 0 End Contraction(s)<br>0.5' Crest Height  |
| #5     | Secondary | 402.00' | <b>15.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Primary OutFlow** Max=0.07 cfs @ 20.00 hrs HW=400.97' (Free Discharge)

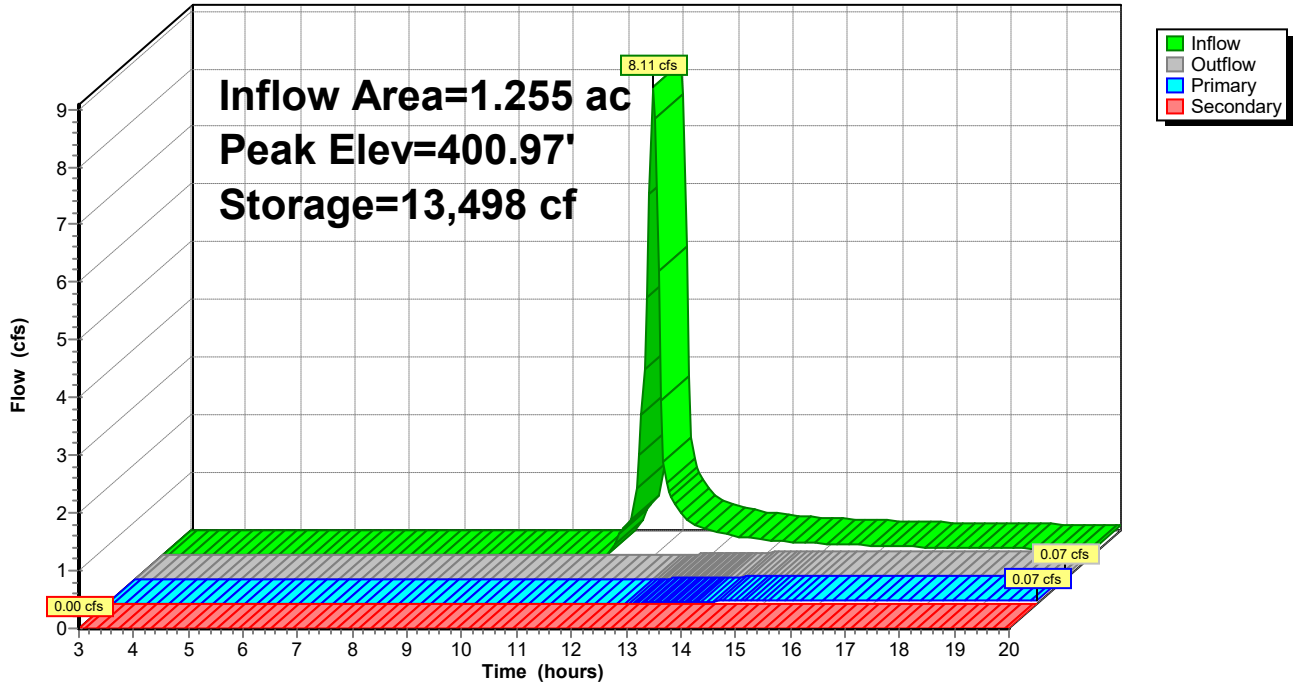
- ↑ 1=Culvert (Passes 0.07 cfs of 1.69 cfs potential flow)
- ↑ 2=Orifice/Grate (Orifice Controls 0.07 cfs @ 2.99 fps)
- ↑ 3=Orifice/Grate ( Controls 0.00 cfs)
- ↑ 4=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=399.00' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

### Pond 7P: Pond #1

Hydrograph



**Summary for Pond 8P: Cultec 902HD chambers**

Inflow Area = 1.817 ac, 32.82% Impervious, Inflow Depth > 3.57" for 10-yr event  
 Inflow = 8.89 cfs @ 12.06 hrs, Volume= 0.541 af  
 Outflow = 2.65 cfs @ 12.32 hrs, Volume= 0.510 af, Atten= 70%, Lag= 15.4 min  
 Primary = 2.65 cfs @ 12.32 hrs, Volume= 0.510 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 404.00' @ 12.32 hrs Surf.Area= 4,800 sf Storage= 9,306 cf

Plug-Flow detention time= 66.1 min calculated for 0.510 af (94% of inflow)  
 Center-of-Mass det. time= 45.3 min ( 816.6 - 771.3 )

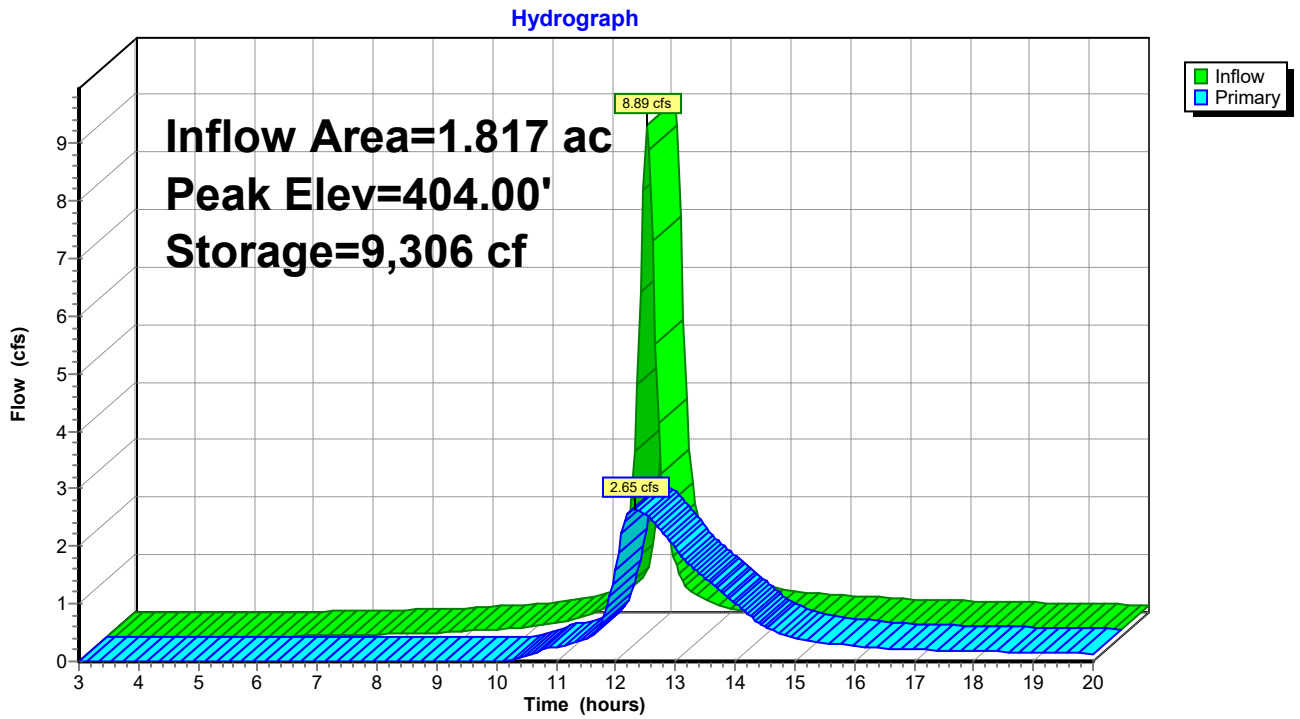
| Volume | Invert  | Avail.Storage | Storage Description   |
|--------|---------|---------------|---|
| #1     | 401.25' | 6,677 cf      | <b>Stone Envelope (Prismatic)</b> Listed below (Recalc)<br>27,600 cf Overall - 10,909 cf Embedded = 16,691 cf x 40.0% Voids   |
| #2     | 402.00' | 10,909 cf     | <b>Cultec R-902HD</b> x 168 Inside #1<br>Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf<br>Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap<br>168 Chambers in 6 Rows<br>Cap Storage= +2.8 cf x 2 x 6 rows = 33.1 cf |
|        |         | 17,585 cf     | Total Available Storage   |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 401.25           | 4,800             | 0                      | 0                      |
| 407.00           | 4,800             | 27,600                 | 27,600                 |

| Device | Routing | Invert  | Outlet Devices   |
|--------|---------|---------|--|
| #1     | Primary | 401.83' | <b>15.0" Round Culvert w/ 10.0" inside fill</b> L= 30.0' Ke= 0.500<br>Inlet / Outlet Invert= 401.00' / 400.00' S= 0.0333 '/' Cc= 0.900<br>n= 0.010, Flow Area= 0.36 sf |
| #2     | Primary | 403.00' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600   |
| #3     | Primary | 404.00' | <b>2.0" Vert. Orifice/Grate</b> C= 0.600   |

**Primary OutFlow** Max=2.65 cfs @ 12.32 hrs HW=403.99' (Free Discharge)  
 1=Culvert (Inlet Controls 2.43 cfs @ 6.79 fps)  
 2=Orifice/Grate (Orifice Controls 0.22 cfs @ 4.49 fps)  
 3=Orifice/Grate ( Controls 0.00 cfs)

### Pond 8P: Cultec 902HD chambers



Time span=3.00-20.00 hrs, dt=0.05 hrs, 341 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub Basin #1 Full** Runoff Area=79,133 sf 32.82% Impervious Runoff Depth>4.46"  
Flow Length=380' Slope=0.0200 '/' Tc=14.6 min CN=85 Runoff=10.97 cfs 0.676 af

**Subcatchment 9S: Combined Sub Basin** Runoff Area=54,663 sf 54.28% Impervious Runoff Depth>4.58"  
Flow Length=620' Tc=4.8 min CN=86 Runoff=10.49 cfs 0.479 af

**Reach 8R: Discharge** Inflow=3.20 cfs 0.698 af  
Outflow=3.20 cfs 0.698 af

**Pond 5P: Forbay** Peak Elev=402.41' Storage=2,655 cf Inflow=10.49 cfs 0.479 af  
Outflow=9.97 cfs 0.437 af

**Pond 7P: Pond #1** Peak Elev=401.31' Storage=16,678 cf Inflow=9.97 cfs 0.437 af  
Primary=0.10 cfs 0.054 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.054 af

**Pond 8P: Cultec 902HD chambers** Peak Elev=404.61' Storage=11,559 cf Inflow=10.97 cfs 0.676 af  
Outflow=3.15 cfs 0.645 af

**Total Runoff Area = 3.072 ac Runoff Volume = 1.155 af Average Runoff Depth = 4.51"**  
**58.41% Pervious = 1.794 ac 41.59% Impervious = 1.277 ac**

### Summary for Subcatchment 1S: Sub Basin #1 Full Building

Runoff = 10.97 cfs @ 12.06 hrs, Volume= 0.676 af, Depth> 4.46"

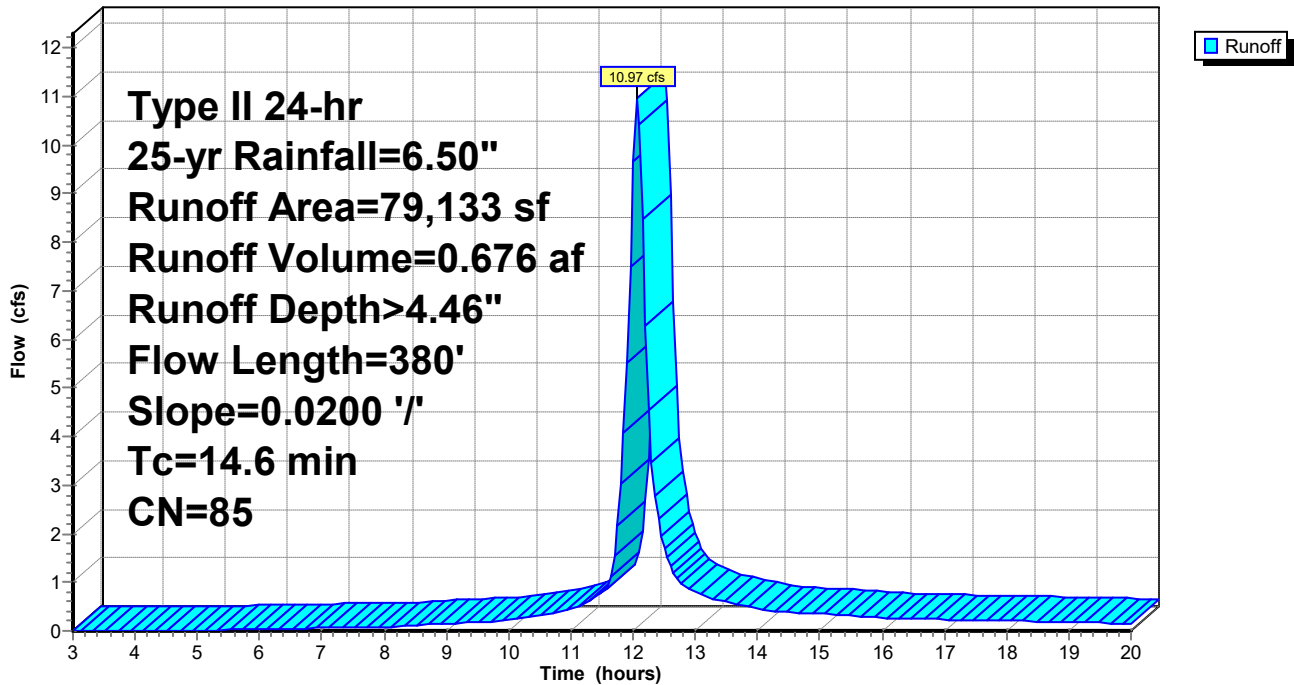
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=6.50"

| Area (sf) | CN | Description                    |
|-----------|----|--------------------------------|
| 53,162    | 79 | Woods/grass comb., Good, HSG D |
| 25,971    | 98 | Roofs, HSG A                   |
| 79,133    | 85 | Weighted Average               |
| 53,162    |    | 67.18% Pervious Area           |
| 25,971    |    | 32.82% Impervious Area         |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 9.9      | 100           | 0.0200        | 0.17              |                | <b>Sheet Flow, Initiated from top of knoll @ 414'</b><br>Grass: Short n= 0.150 P2= 3.15"   |
| 4.7      | 280           | 0.0200        | 0.99              |                | <b>Shallow Concentrated Flow, Shallow Conc. to Pond</b><br>Short Grass Pasture Kv= 7.0 fps |
| 14.6     | 380           | Total         |                   |                |  |

### Subcatchment 1S: Sub Basin #1 Full Building

Hydrograph



**Summary for Subcatchment 9S: Combined Sub Basin #2 and #3**

[49] Hint: Tc<2dt may require smaller dt

Runoff = 10.49 cfs @ 11.95 hrs, Volume= 0.479 af, Depth> 4.58"

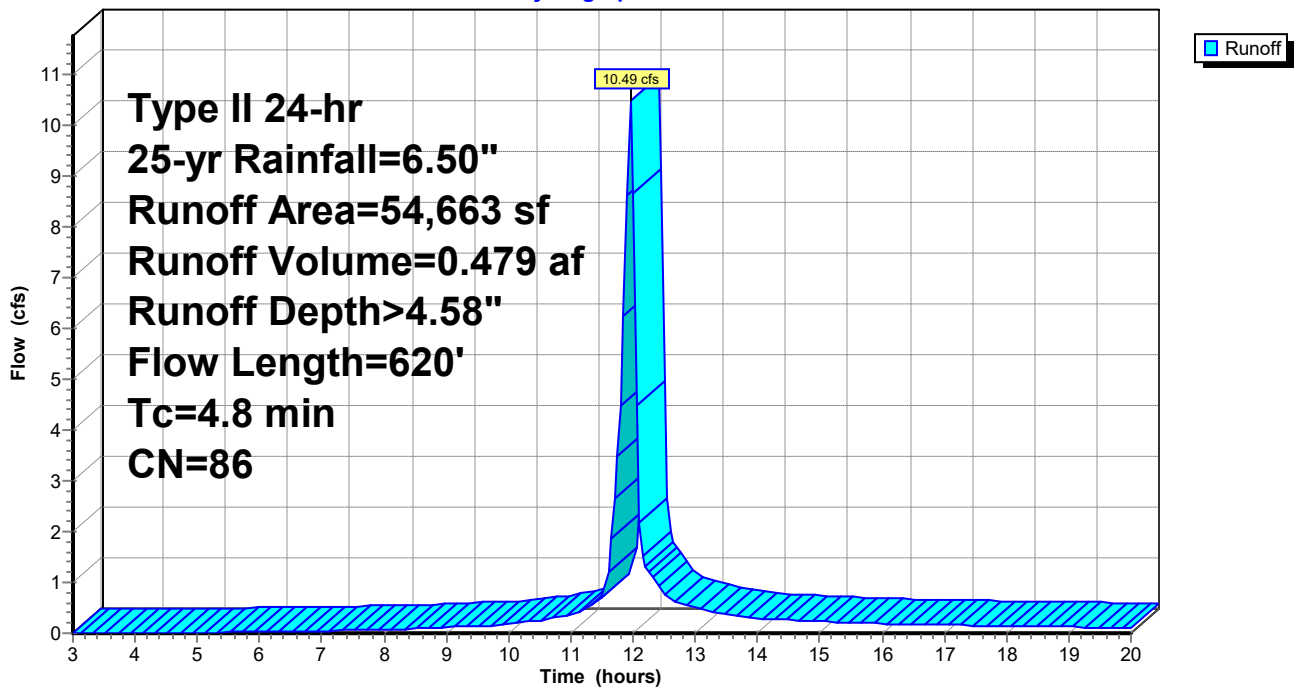
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=6.50"

| Area (sf) | CN | Description                    |
|-----------|----|--------------------------------|
| 24,993    | 72 | Woods/grass comb., Good, HSG C |
| 29,670    | 98 | Roofs, HSG A                   |
| 54,663    | 86 | Weighted Average               |
| 24,993    |    | 45.72% Pervious Area           |
| 29,670    |    | 54.28% Impervious Area         |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 1.4      | 60            | 0.0050        | 0.71              |                | <b>Sheet Flow, Sheet to CB</b><br>Smooth surfaces n= 0.011 P2= 3.15"  |
| 3.4      | 560           | 0.0100        | 2.78              | 0.49           | <b>Pipe Channel, CB to Swale</b><br>15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08'<br>n= 0.010 Corrugated PE, smooth interior |
| 4.8      | 620           | Total         |                   |                |   |

**Subcatchment 9S: Combined Sub Basin #2 and #3**

Hydrograph



### Summary for Reach 8R: Discharge

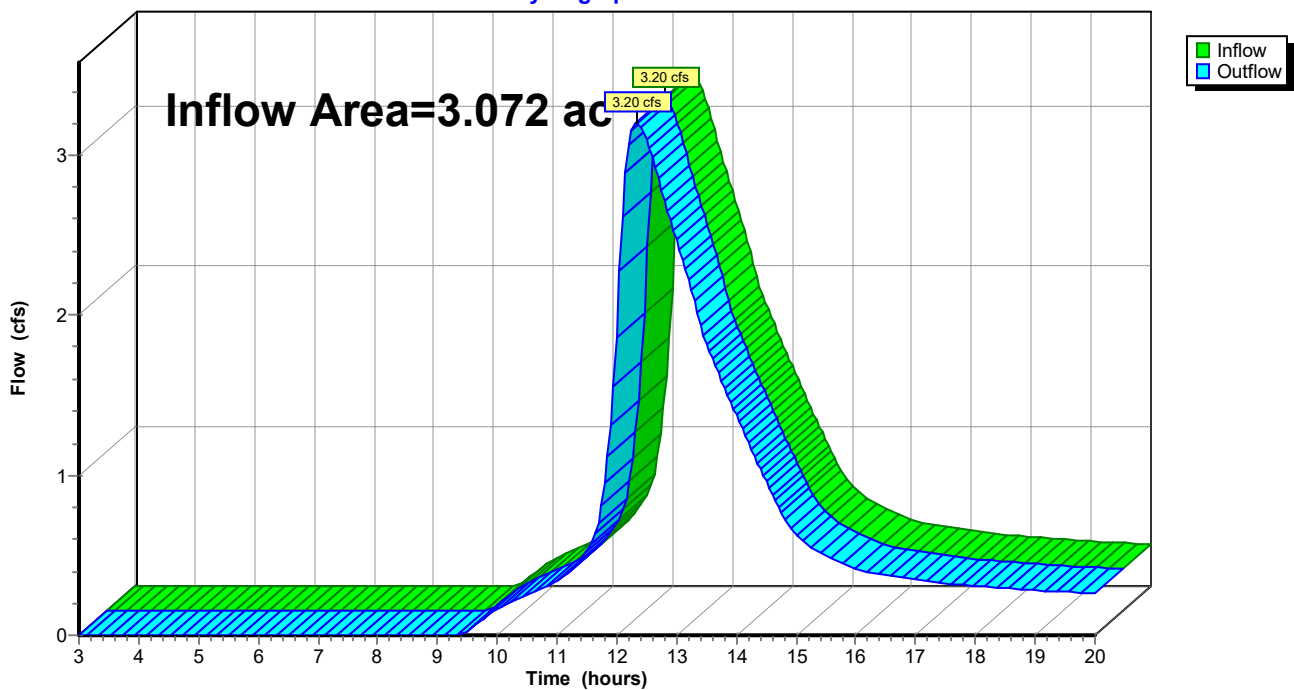
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.072 ac, 41.59% Impervious, Inflow Depth > 2.73" for 25-yr event  
Inflow = 3.20 cfs @ 12.33 hrs, Volume= 0.698 af  
Outflow = 3.20 cfs @ 12.33 hrs, Volume= 0.698 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs

### Reach 8R: Discharge

Hydrograph





**Summary for Pond 5P: Forbay**

Inflow Area = 1.255 ac, 54.28% Impervious, Inflow Depth > 4.58" for 25-yr event  
 Inflow = 10.49 cfs @ 11.95 hrs, Volume= 0.479 af  
 Outflow = 9.97 cfs @ 11.96 hrs, Volume= 0.437 af, Atten= 5%, Lag= 0.8 min  
 Primary = 9.97 cfs @ 11.96 hrs, Volume= 0.437 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 402.41' @ 11.96 hrs Surf.Area= 2,178 sf Storage= 2,655 cf

Plug-Flow detention time= 54.2 min calculated for 0.437 af (91% of inflow)  
 Center-of-Mass det. time= 23.0 min ( 778.7 - 755.7 )

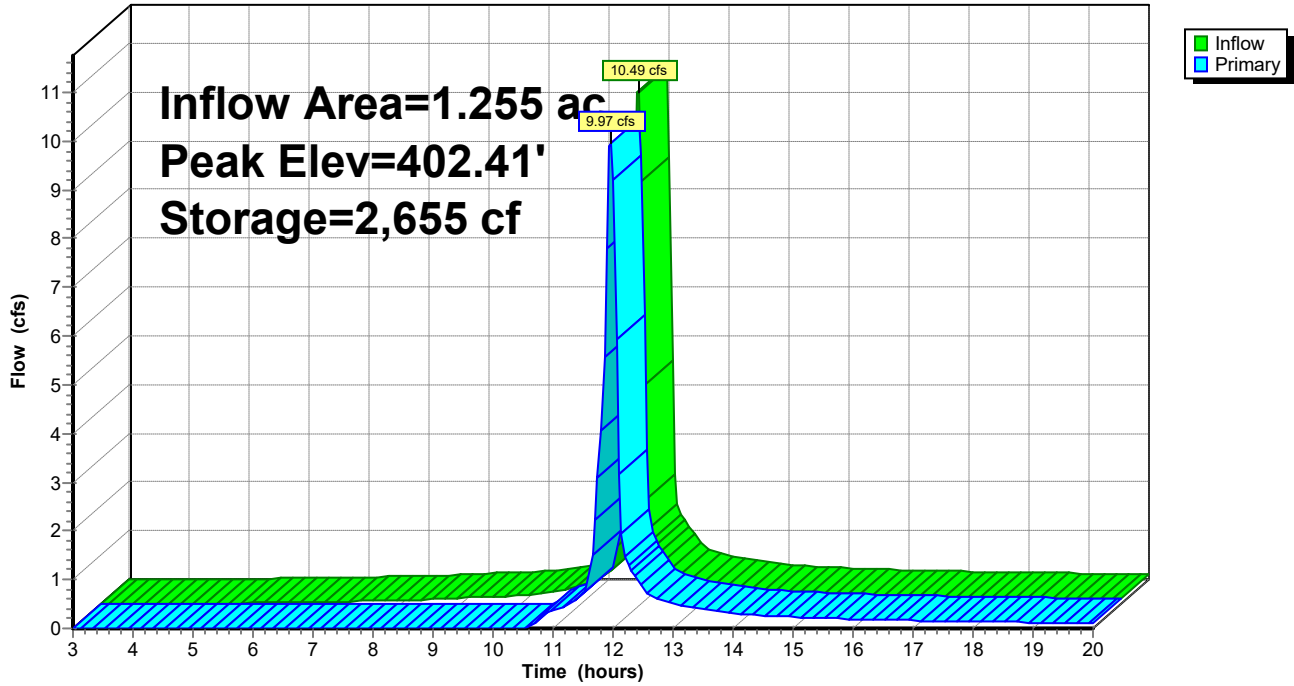
| Volume           | Invert            | Avail.Storage | Storage Description  |                        |                  |  |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1               | 400.00'           | 4,089 cf      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                        |                  |  |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet)                                     | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |  |
| 400.00           | 174               | 90.0          | 0  | 0                      | 174              |  |
| 401.00           | 885               | 191.0         | 484  | 484                    | 2,437            |  |
| 402.00           | 1,872             | 242.0         | 1,348  | 1,832                  | 4,207            |  |
| 403.00           | 2,666             | 286.0         | 2,257  | 4,089                  | 6,075            |  |

| Device | Routing | Invert  | Outlet Devices   |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 402.00' | <b>15.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60              |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64          |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=9.69 cfs @ 11.96 hrs HW=402.40' TW=402.00' (Fixed TW Elev= 402.00')  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 9.69 cfs @ 1.62 fps)

### Pond 5P: Forbay

Hydrograph



**Summary for Pond 7P: Pond #1**

Inflow Area = 1.255 ac, 54.28% Impervious, Inflow Depth > 4.18" for 25-yr event  
 Inflow = 9.97 cfs @ 11.96 hrs, Volume= 0.437 af  
 Outflow = 0.10 cfs @ 20.00 hrs, Volume= 0.054 af, Atten= 99%, Lag= 482.2 min  
 Primary = 0.10 cfs @ 20.00 hrs, Volume= 0.054 af  
 Secondary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 401.31' @ 20.00 hrs Surf.Area= 9,654 sf Storage= 16,678 cf

Plug-Flow detention time= 297.7 min calculated for 0.054 af (12% of inflow)  
 Center-of-Mass det. time= 204.1 min ( 982.8 - 778.7 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 399.00' | 35,384 cf     | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 399.00           | 3,312             | 238.0         | 0                      | 0                      | 3,312            |
| 400.00           | 7,705             | 347.0         | 5,356                  | 5,356                  | 8,395            |
| 401.00           | 9,173             | 380.0         | 8,428                  | 13,785                 | 10,338           |
| 402.00           | 10,783            | 414.0         | 9,967                  | 23,752                 | 12,523           |
| 403.00           | 12,502            | 422.0         | 11,632                 | 35,384                 | 13,200           |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 399.83' | <b>15.0" Round Culvert w/ 10.0" inside fill</b> L= 40.0' Ke= 0.500<br>Inlet / Outlet Invert= 399.00' / 398.50' S= 0.0125 '/' Cc= 0.900<br>n= 0.010, Flow Area= 0.36 sf             |
| #2     | Device 1  | 400.50' | <b>2.0" Vert. Orifice/Grate</b> C= 0.600   |
| #3     | Device 1  | 401.25' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600   |
| #4     | Device 1  | 401.75' | <b>7.5' long Sharp-Crested Rectangular Weir</b> 0 End Contraction(s)<br>0.5' Crest Height  |
| #5     | Secondary | 402.00' | <b>15.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Primary OutFlow** Max=0.10 cfs @ 20.00 hrs HW=401.31' (Free Discharge)

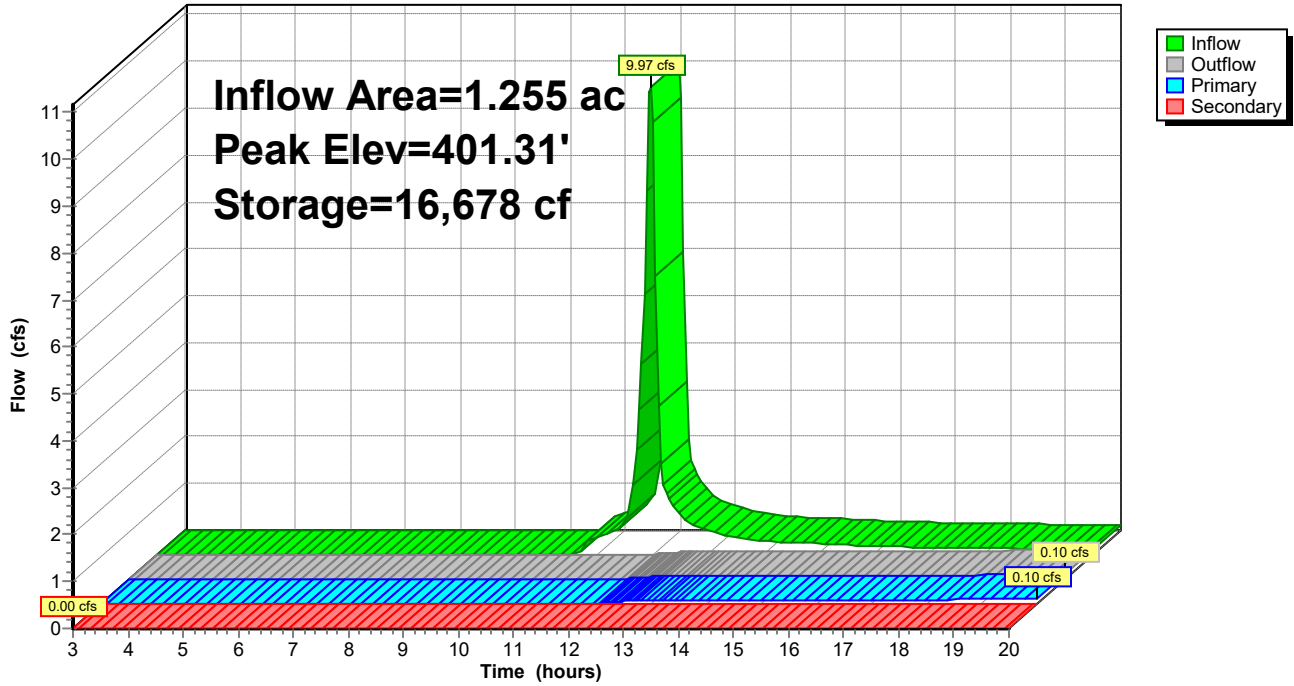
- ↑ 1=Culvert (Passes 0.10 cfs of 1.97 cfs potential flow)
- ↑ 2=Orifice/Grate (Orifice Controls 0.09 cfs @ 4.10 fps)
- ↑ 3=Orifice/Grate (Orifice Controls 0.01 cfs @ 0.82 fps)
- ↑ 4=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=399.00' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

### Pond 7P: Pond #1

Hydrograph



**Summary for Pond 8P: Cultec 902HD chambers**

Inflow Area = 1.817 ac, 32.82% Impervious, Inflow Depth > 4.46" for 25-yr event  
 Inflow = 10.97 cfs @ 12.06 hrs, Volume= 0.676 af  
 Outflow = 3.15 cfs @ 12.32 hrs, Volume= 0.645 af, Atten= 71%, Lag= 15.8 min  
 Primary = 3.15 cfs @ 12.32 hrs, Volume= 0.645 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 404.61' @ 12.32 hrs Surf.Area= 4,800 sf Storage= 11,559 cf

Plug-Flow detention time= 64.6 min calculated for 0.643 af (95% of inflow)  
 Center-of-Mass det. time= 47.3 min ( 813.4 - 766.1 )

| Volume | Invert  | Avail.Storage | Storage Description   |
|--------|---------|---------------|---|
| #1     | 401.25' | 6,677 cf      | <b>Stone Envelope (Prismatic)</b> Listed below (Recalc)<br>27,600 cf Overall - 10,909 cf Embedded = 16,691 cf x 40.0% Voids   |
| #2     | 402.00' | 10,909 cf     | <b>Cultec R-902HD</b> x 168 Inside #1<br>Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf<br>Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap<br>168 Chambers in 6 Rows<br>Cap Storage= +2.8 cf x 2 x 6 rows = 33.1 cf |
|        |         | 17,585 cf     | Total Available Storage   |

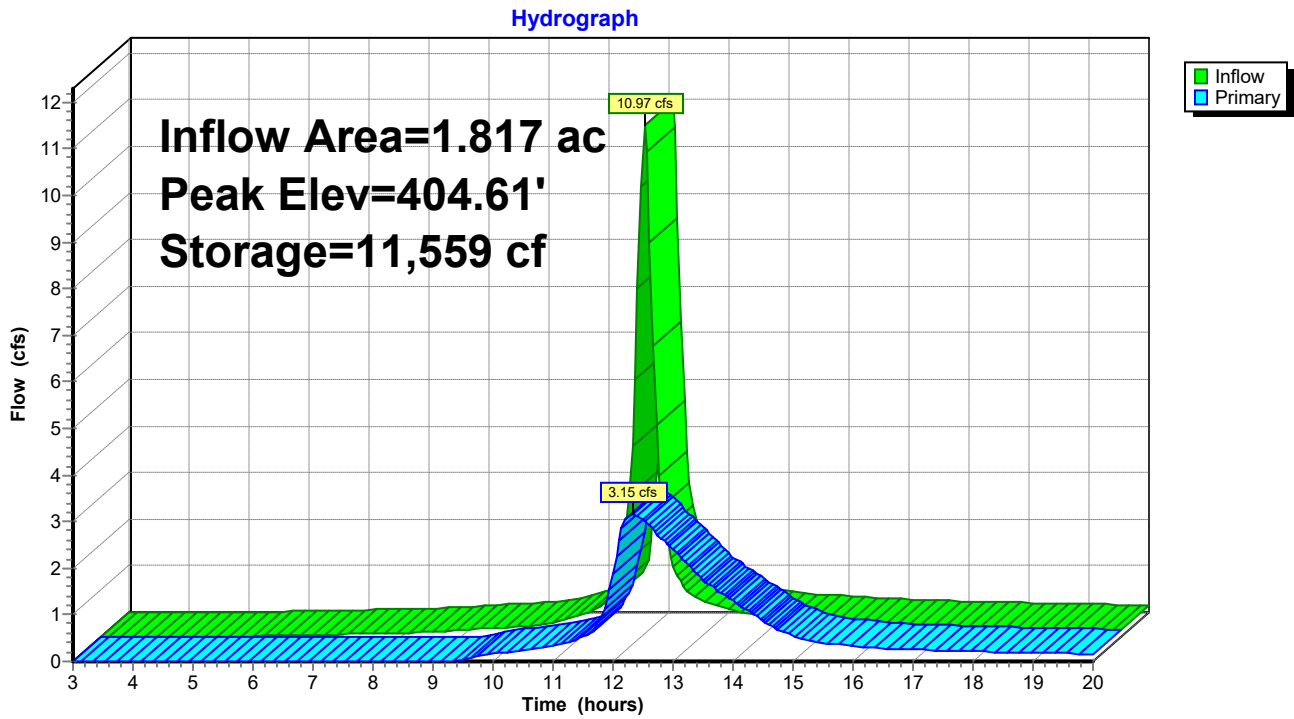
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 401.25           | 4,800             | 0                      | 0                      |
| 407.00           | 4,800             | 27,600                 | 27,600                 |

| Device | Routing | Invert  | Outlet Devices   |
|--------|---------|---------|--|
| #1     | Primary | 401.83' | <b>15.0" Round Culvert w/ 10.0" inside fill</b> L= 30.0' Ke= 0.500<br>Inlet / Outlet Invert= 401.00' / 400.00' S= 0.0333 '/' Cc= 0.900<br>n= 0.010, Flow Area= 0.36 sf |
| #2     | Primary | 403.00' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600   |
| #3     | Primary | 404.00' | <b>2.0" Vert. Orifice/Grate</b> C= 0.600   |

**Primary OutFlow** Max=3.14 cfs @ 12.32 hrs HW=404.61' (Free Discharge)

- 1=Culvert (Inlet Controls 2.78 cfs @ 7.76 fps)
- 2=Orifice/Grate (Orifice Controls 0.29 cfs @ 5.86 fps)
- 3=Orifice/Grate (Orifice Controls 0.08 cfs @ 3.48 fps)

### Pond 8P: Cultec 902HD chambers



Time span=3.00-20.00 hrs, dt=0.05 hrs, 341 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub Basin #1 Full** Runoff Area=79,133 sf 32.82% Impervious Runoff Depth>5.82"  
Flow Length=380' Slope=0.0200 '/' Tc=14.6 min CN=85 Runoff=14.09 cfs 0.881 af

**Subcatchment 9S: Combined Sub Basin** Runoff Area=54,663 sf 54.28% Impervious Runoff Depth>5.95"  
Flow Length=620' Tc=4.8 min CN=86 Runoff=13.37 cfs 0.623 af

**Reach 8R: Discharge** Inflow=3.92 cfs 0.986 af  
Outflow=3.92 cfs 0.986 af

**Pond 5P: Forbay** Peak Elev=402.47' Storage=2,803 cf Inflow=13.37 cfs 0.623 af  
Outflow=12.77 cfs 0.580 af

**Pond 7P: Pond #1** Peak Elev=401.64' Storage=19,930 cf Inflow=12.77 cfs 0.580 af  
Primary=0.23 cfs 0.137 af Secondary=0.00 cfs 0.000 af Outflow=0.23 cfs 0.137 af

**Pond 8P: Cultec 902HD chambers** Peak Elev=405.71' Storage=15,031 cf Inflow=14.09 cfs 0.881 af  
Outflow=3.83 cfs 0.849 af

**Total Runoff Area = 3.072 ac Runoff Volume = 1.504 af Average Runoff Depth = 5.88"**  
**58.41% Pervious = 1.794 ac 41.59% Impervious = 1.277 ac**

**Summary for Subcatchment 1S: Sub Basin #1 Full Building**

Runoff = 14.09 cfs @ 12.06 hrs, Volume= 0.881 af, Depth> 5.82"

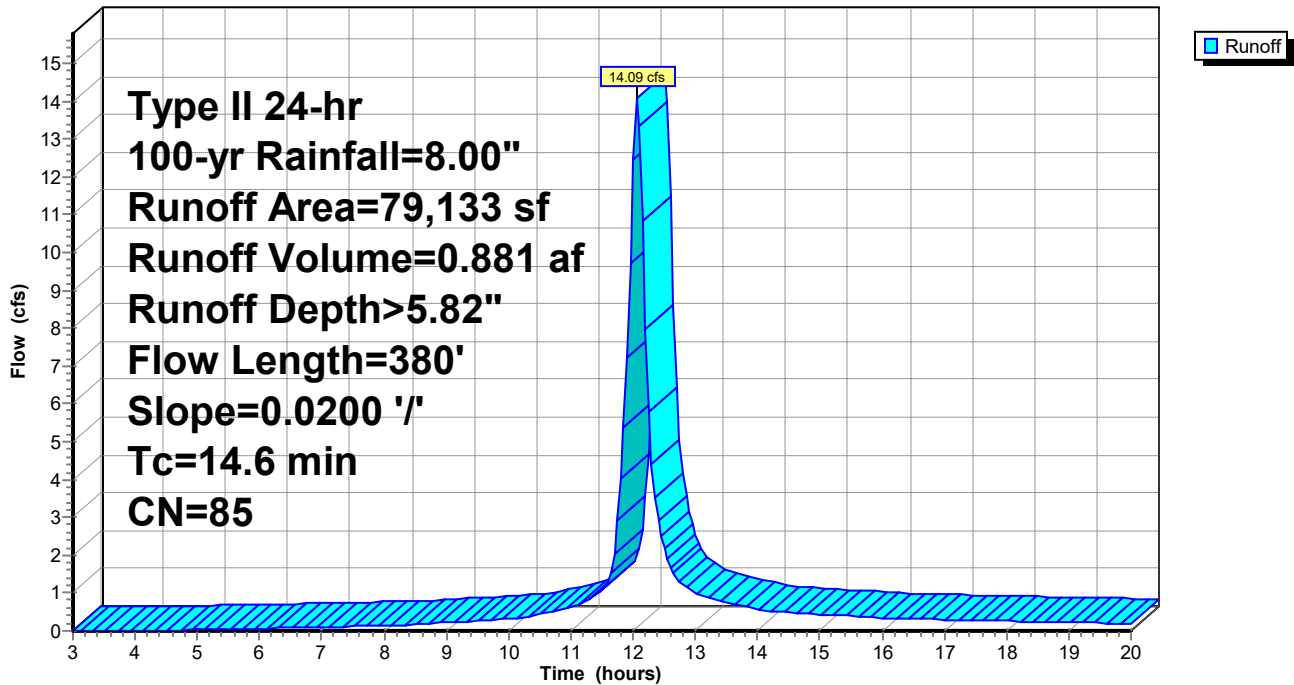
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=8.00"

| Area (sf) | CN | Description                    |
|-----------|----|--------------------------------|
| 53,162    | 79 | Woods/grass comb., Good, HSG D |
| 25,971    | 98 | Roofs, HSG A                   |
| 79,133    | 85 | Weighted Average               |
| 53,162    |    | 67.18% Pervious Area           |
| 25,971    |    | 32.82% Impervious Area         |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 9.9      | 100           | 0.0200        | 0.17              |                | <b>Sheet Flow, Initiated from top of knoll @ 414'</b><br>Grass: Short n= 0.150 P2= 3.15"   |
| 4.7      | 280           | 0.0200        | 0.99              |                | <b>Shallow Concentrated Flow, Shallow Conc. to Pond</b><br>Short Grass Pasture Kv= 7.0 fps |
| 14.6     | 380           | Total         |                   |                |  |

**Subcatchment 1S: Sub Basin #1 Full Building**

Hydrograph





**Summary for Subcatchment 9S: Combined Sub Basin #2 and #3**

[49] Hint: Tc<2dt may require smaller dt

Runoff = 13.37 cfs @ 11.95 hrs, Volume= 0.623 af, Depth> 5.95"

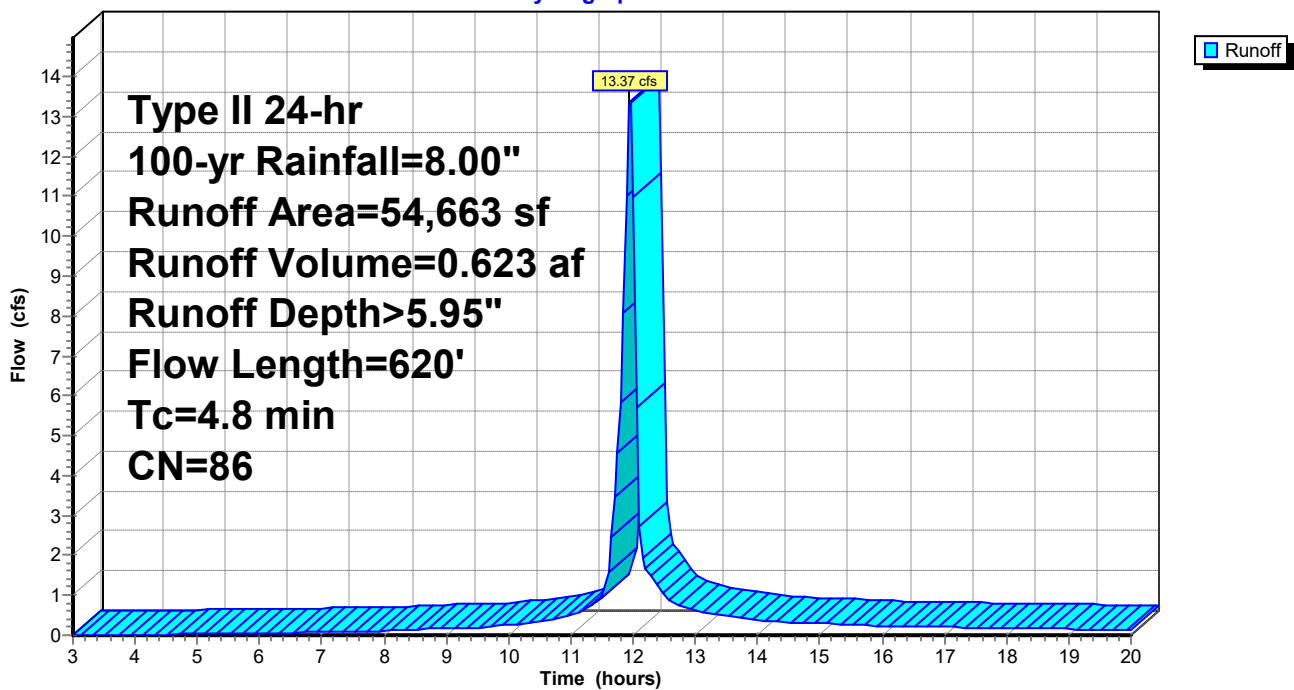
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=8.00"

| Area (sf) | CN | Description                    |
|-----------|----|--------------------------------|
| 24,993    | 72 | Woods/grass comb., Good, HSG C |
| 29,670    | 98 | Roofs, HSG A                   |
| 54,663    | 86 | Weighted Average               |
| 24,993    |    | 45.72% Pervious Area           |
| 29,670    |    | 54.28% Impervious Area         |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 1.4      | 60            | 0.0050        | 0.71              |                | <b>Sheet Flow, Sheet to CB</b><br>Smooth surfaces n= 0.011 P2= 3.15"  |
| 3.4      | 560           | 0.0100        | 2.78              | 0.49           | <b>Pipe Channel, CB to Swale</b><br>15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08'<br>n= 0.010 Corrugated PE, smooth interior |
| 4.8      | 620           | Total         |                   |                |   |

**Subcatchment 9S: Combined Sub Basin #2 and #3**

Hydrograph



### Summary for Reach 8R: Discharge

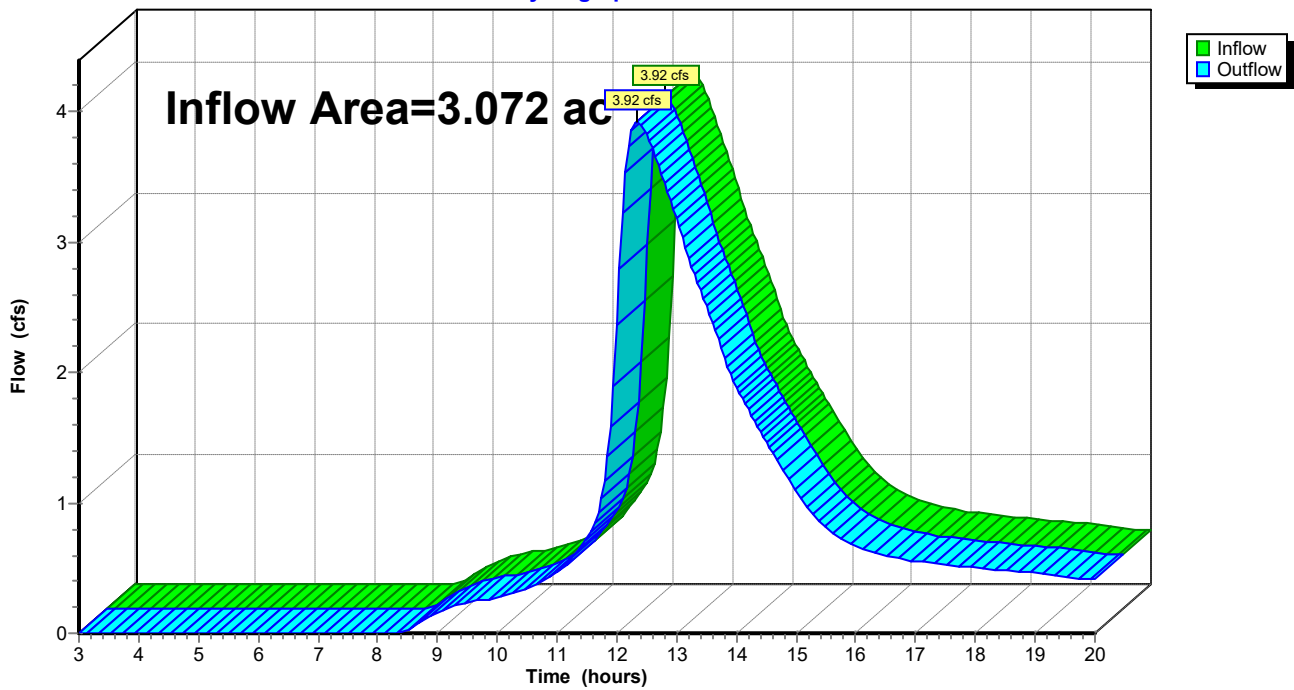
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.072 ac, 41.59% Impervious, Inflow Depth > 3.85" for 100-yr event  
Inflow = 3.92 cfs @ 12.34 hrs, Volume= 0.986 af  
Outflow = 3.92 cfs @ 12.34 hrs, Volume= 0.986 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs

### Reach 8R: Discharge

Hydrograph



**Summary for Pond 5P: Forbay**

Inflow Area = 1.255 ac, 54.28% Impervious, Inflow Depth > 5.95" for 100-yr event  
 Inflow = 13.37 cfs @ 11.95 hrs, Volume= 0.623 af  
 Outflow = 12.77 cfs @ 11.96 hrs, Volume= 0.580 af, Atten= 4%, Lag= 0.7 min  
 Primary = 12.77 cfs @ 11.96 hrs, Volume= 0.580 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 402.47' @ 11.96 hrs Surf.Area= 2,231 sf Storage= 2,803 cf

Plug-Flow detention time= 46.6 min calculated for 0.578 af (93% of inflow)  
 Center-of-Mass det. time= 21.6 min ( 771.1 - 749.5 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 400.00' | 4,089 cf      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

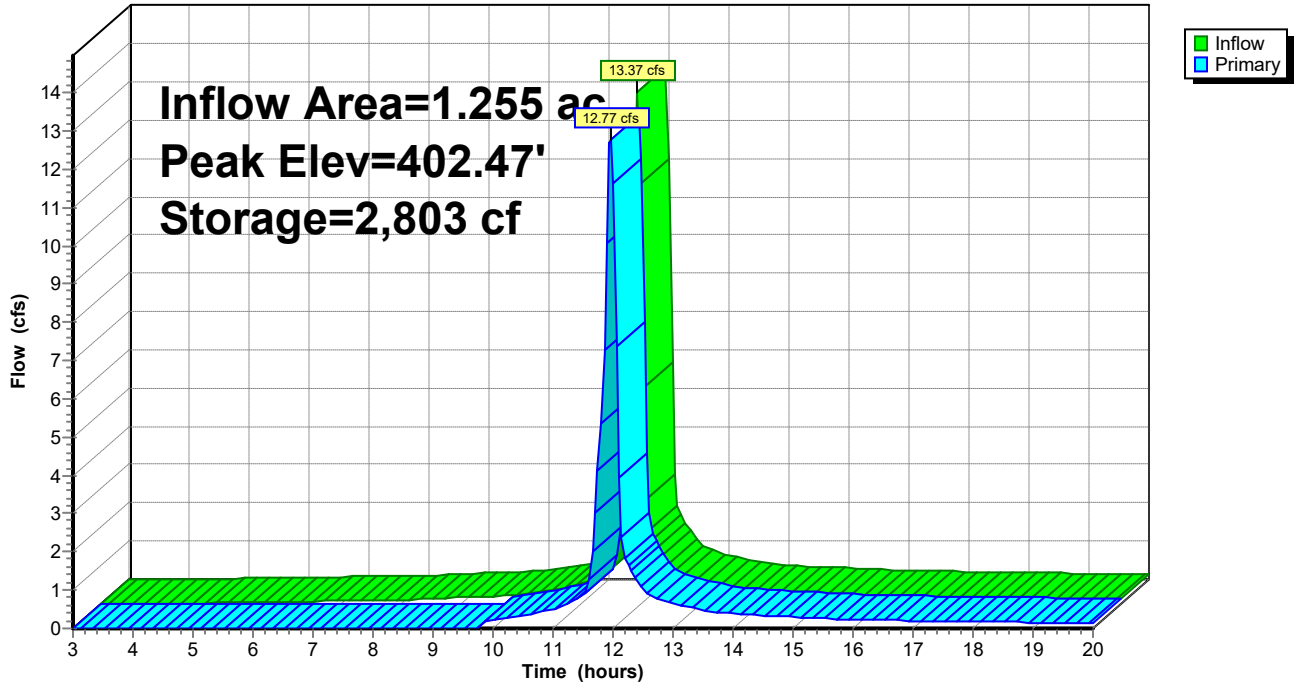
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 400.00           | 174               | 90.0          | 0                      | 0                      | 174              |
| 401.00           | 885               | 191.0         | 484                    | 484                    | 2,437            |
| 402.00           | 1,872             | 242.0         | 1,348                  | 1,832                  | 4,207            |
| 403.00           | 2,666             | 286.0         | 2,257                  | 4,089                  | 6,075            |

| Device | Routing | Invert  | Outlet Devices   |
|--------|---------|---------|--|
| #1     | Primary | 402.00' | <b>15.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Primary OutFlow** Max=12.46 cfs @ 11.96 hrs HW=402.47' TW=402.00' (Fixed TW Elev= 402.00')  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 12.46 cfs @ 1.78 fps)

### Pond 5P: Forbay

Hydrograph



**Summary for Pond 7P: Pond #1**

Inflow Area = 1.255 ac, 54.28% Impervious, Inflow Depth > 5.55" for 100-yr event  
 Inflow = 12.77 cfs @ 11.96 hrs, Volume= 0.580 af  
 Outflow = 0.23 cfs @ 16.07 hrs, Volume= 0.137 af, Atten= 98%, Lag= 246.8 min  
 Primary = 0.23 cfs @ 16.07 hrs, Volume= 0.137 af  
 Secondary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 401.64' @ 16.07 hrs Surf.Area= 10,181 sf Storage= 19,930 cf

Plug-Flow detention time= 294.6 min calculated for 0.137 af (24% of inflow)  
 Center-of-Mass det. time= 204.9 min ( 975.9 - 771.1 )

| Volume           | Invert            | Avail.Storage | Storage Description  |                        |                  |
|------------------|-------------------|---------------|--|------------------------|------------------|
| #1               | 399.00'           | 35,384 cf     | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                        |                  |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet)                                     | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
| 399.00           | 3,312             | 238.0         | 0  | 0                      | 3,312            |
| 400.00           | 7,705             | 347.0         | 5,356  | 5,356                  | 8,395            |
| 401.00           | 9,173             | 380.0         | 8,428  | 13,785                 | 10,338           |
| 402.00           | 10,783            | 414.0         | 9,967  | 23,752                 | 12,523           |
| 403.00           | 12,502            | 422.0         | 11,632   | 35,384                 | 13,200           |

| Device | Routing   | Invert  | Outlet Devices   |  |  |  |
|--------|-----------|---------|--|--|--|--|
| #1     | Primary   | 399.83' | <b>15.0" Round Culvert w/ 10.0" inside fill</b> L= 40.0' Ke= 0.500<br>Inlet / Outlet Invert= 399.00' / 398.50' S= 0.0125 '/' Cc= 0.900<br>n= 0.010, Flow Area= 0.36 sf             |  |  |  |
| #2     | Device 1  | 400.50' | <b>2.0" Vert. Orifice/Grate</b> C= 0.600   |  |  |  |
| #3     | Device 1  | 401.25' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600   |  |  |  |
| #4     | Device 1  | 401.75' | <b>7.5' long Sharp-Crested Rectangular Weir</b> 0 End Contraction(s)<br>0.5' Crest Height  |  |  |  |
| #5     | Secondary | 402.00' | <b>15.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |  |  |  |

**Primary OutFlow** Max=0.23 cfs @ 16.07 hrs HW=401.64' (Free Discharge)

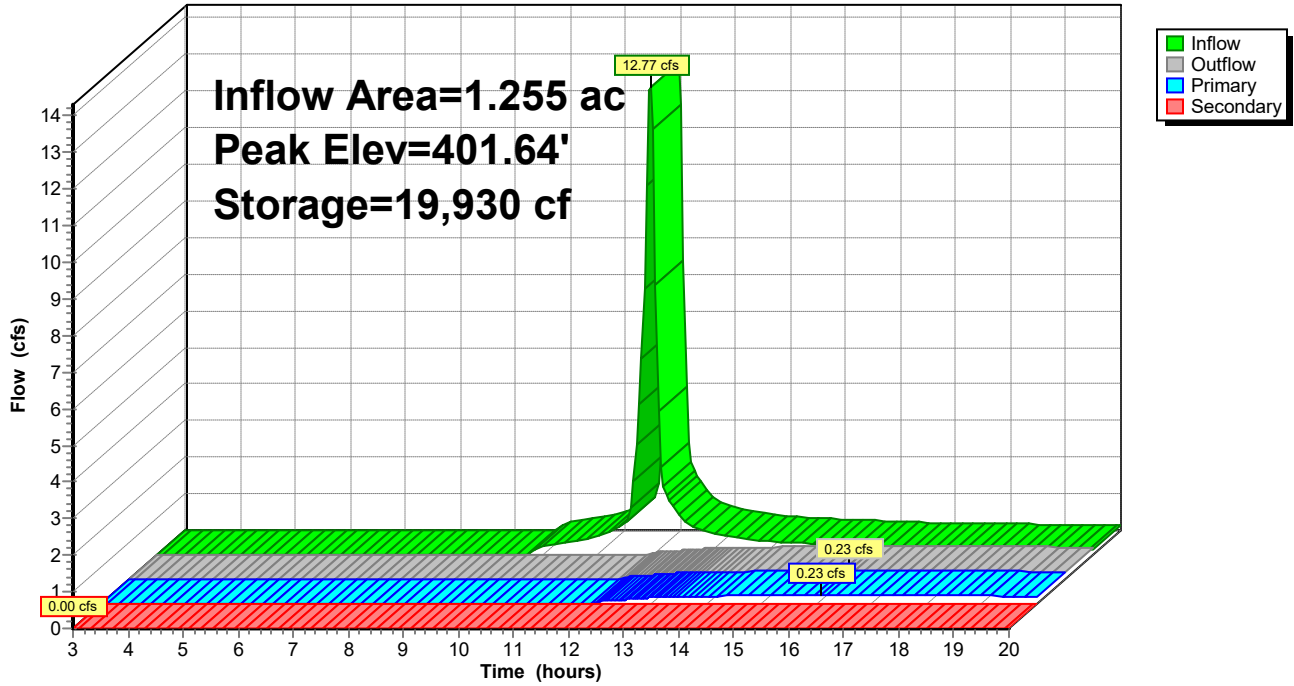
- ↑ 1=Culvert (Passes 0.23 cfs of 2.19 cfs potential flow)
- ↑ 2=Orifice/Grate (Orifice Controls 0.11 cfs @ 4.94 fps)
- ↑ 3=Orifice/Grate (Orifice Controls 0.12 cfs @ 2.46 fps)
- ↑ 4=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=399.00' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

### Pond 7P: Pond #1

Hydrograph



**Summary for Pond 8P: Cultec 902HD chambers**

Inflow Area = 1.817 ac, 32.82% Impervious, Inflow Depth > 5.82" for 100-yr event  
 Inflow = 14.09 cfs @ 12.06 hrs, Volume= 0.881 af  
 Outflow = 3.83 cfs @ 12.33 hrs, Volume= 0.849 af, Atten= 73%, Lag= 16.5 min  
 Primary = 3.83 cfs @ 12.33 hrs, Volume= 0.849 af

Routing by Stor-Ind method, Time Span= 3.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 405.71' @ 12.33 hrs Surf.Area= 4,800 sf Storage= 15,031 cf

Plug-Flow detention time= 63.9 min calculated for 0.847 af (96% of inflow)  
 Center-of-Mass det. time= 49.8 min ( 809.6 - 759.8 )

| Volume | Invert  | Avail.Storage | Storage Description   |
|--------|---------|---------------|---|
| #1     | 401.25' | 6,677 cf      | <b>Stone Envelope (Prismatic)</b> Listed below (Recalc)<br>27,600 cf Overall - 10,909 cf Embedded = 16,691 cf x 40.0% Voids   |
| #2     | 402.00' | 10,909 cf     | <b>Cultec R-902HD</b> x 168 Inside #1<br>Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf<br>Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap<br>168 Chambers in 6 Rows<br>Cap Storage= +2.8 cf x 2 x 6 rows = 33.1 cf |
|        |         | 17,585 cf     | Total Available Storage   |

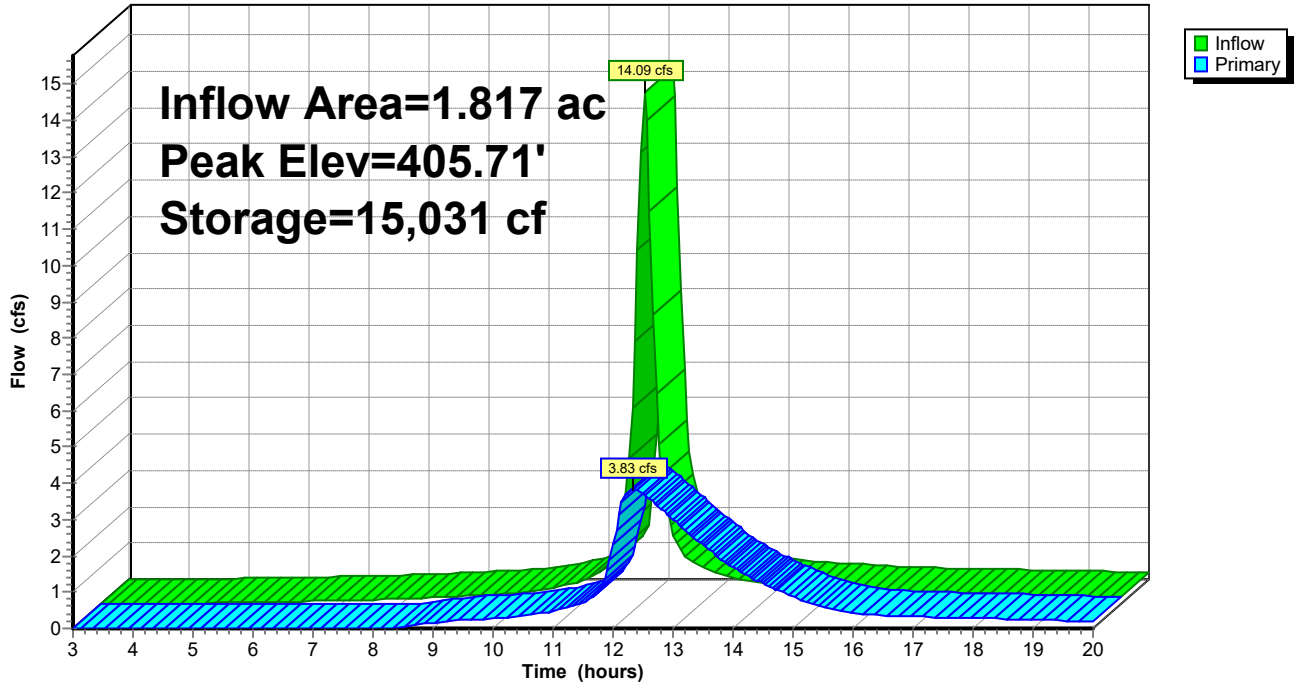
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 401.25              | 4,800                | 0                         | 0                         |
| 407.00              | 4,800                | 27,600                    | 27,600                    |

| Device | Routing | Invert  | Outlet Devices   |
|--------|---------|---------|--|
| #1     | Primary | 401.83' | <b>15.0" Round Culvert w/ 10.0" inside fill</b> L= 30.0' Ke= 0.500<br>Inlet / Outlet Invert= 401.00' / 400.00' S= 0.0333 '/' Cc= 0.900<br>n= 0.010, Flow Area= 0.36 sf |
| #2     | Primary | 403.00' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600   |
| #3     | Primary | 404.00' | <b>2.0" Vert. Orifice/Grate</b> C= 0.600   |

**Primary OutFlow** Max=3.83 cfs @ 12.33 hrs HW=405.70' (Free Discharge)  
 1=Culvert (Inlet Controls 3.31 cfs @ 9.26 fps)  
 2=Orifice/Grate (Orifice Controls 0.38 cfs @ 7.73 fps)  
 3=Orifice/Grate (Orifice Controls 0.13 cfs @ 6.13 fps)

### Pond 8P: Cultec 902HD chambers

Hydrograph





**APPENDIX E**

**MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) FORM**



Department of  
Environmental  
Conservation

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:

2. Contact Person:

3. Street Address:

4. City/State/Zip:

**II. Project Site Information**

5. Project/Site Name:

6. Street Address:

7. City/State/Zip:

**III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information**

8. SWPPP Reviewed by:

9. Title/Position:

10. Date Final SWPPP Reviewed and Accepted:

**IV. Regulated MS4 Information**

11. Name of MS4:

12. MS4 SPDES Permit Identification Number: NYR20A

13. Contact Person:

14. Street Address:

15. City/State/Zip:

16. Telephone Number:

**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**

Empty box for additional information.