MHE ENGINEERING

TOWN OF NEWBURGH
PLANNING BOARD
TECHNICAL REVIEW COMMENTS

PROJECT NAME:	**GAS LAND PETROLEUM INC. – ROUTE 9W**
PROJECT NO.:	**2019-16**
PROJECT LOCATION:	**SECTION 43, BLOCK 5, LOT 1**
REVIEW DATE:	**28 JANUARY 2022**
MEETING DATE:	**3 FEBRUARY 2022**
PROJECT REPRESENTATIVE:	**CHAZEN COMPANIES/CHRIS LAPINE**

1. The Planning Board deferred circulating a notice of intent for Lead Agency as the project had to appear before the ZBA for area variances. The Planning Board would be in a position at this time to declare its intent for Lead Agency and circulate the project to the interested and involved agencies, specifically NYSDOT.

2. Numerous items in the response letter have been deferred for future submission. This office will await submission of those responses. Copy of the ZBA variances should be provided for the Planning Board's record.

3. A sidewalk has been depicted which crosses in and out of the property line. NYSDOT has recently requested sidewalks be placed within the right-of-way.

4. Plans should address the location of the subsurface sanitary sewer disposal systems for all buildings on the site.

5. Several of the structures will be required to be sprinklered under the Town of Newburgh ordinance. Waterlines should be setup in compliance with the Town of Newburgh's detail for sprinklers/potable water (copy attached).

6. The applicant's have identified a 6-inch watermain traversing the site. The Town of Newburgh is interested in having the watermain upgraded to an 8-inch diameter watermain to be brought within the NYSDOT right-of-way. Valving should be provided such that potential extension of the 8-inch pipe is possible. An easement for the 8-inch watermain should be provided in favor of the Town of Newburgh.

7. Design of the subsurface sanitary sewer disposal system servicing the proposed convenience store should be provided.

8. Septic notes should be provided which require submission of an as-built plan and certification by a licensed design professional prior to issuance of the certificate of occupancy.

9. Based on the elevation of the convenience store building, it appears that a sewer pump would be required for discharge of the septic effluent to the proposed leach field. Convenience store building is located at an approximate elevation of 293', while the septic system is located at an elevation of 304'.

10. Notes should be added to the plans that the retaining wall proposed will require a submission of a design by a licensed design professional and a building permit.

11. NYSDOT's input on the access drive arrangement should be received.

12. Submission to Orange County Planning Department is required as project is located on state highway. Plan appear to have sufficient detail to submit to OCP.

13. An SWPPP is under review by this office.

14. Response to our previous comment regarding the Adjoiners notice, the applicant has noted that a Public Hearing notice was sent for the ZBA and an additional notice will be sent for the Planning Board. On 9 March 2021 this office provided the Adjoiners Notice and Assessor's mailing list. The applicant's representative should confirm the mailing has been completed.

15. Information pertaining to traffic is to be provided in the future.

16. Plans and reports regarding the water service have been deferred to the future.

17. Septic system design has been deferred to future submissions as well.

Respectfully submitted,

MHE Engineering, D.P.C.

Patrick J. Hines
Principal

PJH/dns

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January 24, 2022

Mr. John P. Ewasutyn, Chairman
and Members of the Planning Board
Town of Newburgh
308 Gardnertown Road
Newburgh, New York 12550

VIA HAND DELIVERY

Re: ***Town of Newburgh Planning Board Project # PB2019-16***
Proposed Subdivision and Convenience Store with Fuel Pumps
Gas Land Petroleum, Inc.
5200 Route 9W (Tax Parcel Section 43 Block 5 Lot 1)
Town of Newburgh, Orange County, NY
Chazen Project #81912.00

Dear Chairman Ewasutyn:

The Applicant appeared before your board and was provided comments from your Engineering Consultants. The site plan drawings have been amended in response to these comments. Below is a point-by-point response to the comments received:

Town of Newburgh Planning Board Technical Review Comments, Dated March 12, 2021:

1. *The project has been revised significantly since last before the Planning Board. The convenient store and gas station remain. The former towing company will become an automotive repair shop. The multi-family structure is proposed to be removed and the accessory apartment over the garage is proposed to remain.*

   Response: No response necessary.

2. *The project requires numerous variances. This office will attempt to identify each of the variances required.*

   a. *Section 185-28g…"and in no instance shall a motor vehicle service station or any other establishment dispensing gasoline be permitted within 1,000-feet in any direction from a lot on which there is an existing motor vehicle service station or other establishment dispensing gasoline."*

   b. *Side yard setback for accessory building with apartment 9-feet proposed where 15-feet is required.*

   c. *Maximum percentage in yard area 10% where 12% is proposed for accessory structure with apartment.*

d. *Section 185-15b: "No such building shall present closer to the frontage street than the front of the main building." Accessory building with apartment exceeds this.*

Response: All variances have been granted by the ZBA.

3. *Plans and reports should address stormwater management for the redevelopment of the site.*

Response: Stormwater management has been addressed in this submission. A SWPPP report has been included.

4. *NYSDOT input on traffic is required. Ken Wersted's comments regarding the need for a traffic study should be provided.*

Response: Collier Engineering will be providing an updated in the next submission.

5. *The Bulk Table #3 should have a minimum front yard corrected to 60-feet on state highways.*

Response: Bulk table 3 has been revised.

6. *A subsurface sanitary sewer disposal system for the site if required. Design of the subsurface sanitary disposal system must be submitted for review.*

Response: The approximate SSDS location is provided on sheet C160. Further design will be provided in a future submission.

7. *Adjoiner's Notice for the significant revision to the plans must be sent out. Adjoiner's Notice has been prepared and provided to the applicant's representative.*

Response: A public hearing notice was sent to all adjoining parcels as part of the ZBA Public Hearing. Additional notice will be made for the Planning Board Public Hearing.

8. *All existing wells should be identified to be abandoned in compliance with AWWA Standards.*

Response: Well abandonment notes are provided on sheet C120.

9. *It is noted that Section 185-39 #5 identifies a 5-year approval timeframe for petroleum bulk storage.*

Response: It is understood, as stated in section 185-39.B.5, that the Planning Board's approval is valid for 5 years and must be renewed if the applicant considers changes in land use of the site, changes the performance of the facility, or if there are any change in the capabilities of local emergency services.

10. *The applicant's representative is requested to coordinate with the water department for provisions of the connection to the Town's potable water system. Numerous structures on the site may present issues with water metering and billing.*

Response: Water issues and coordinated with the town will be addressed in the next submission.

11. *The EAF identifies health department approval for the subsurface sanitary disposal system is required, however, cumulative flow on the site is identified at 576-gallons per day which only requires local approval for conventional systems designed in compliance with Appendix 75a.*

    Response: This site is expecting to have less than 576 GPD.

12. *County referral will be required.*

    Response: Comment noted.

13. *The Planning Board may wish to delay declaring intent for Lead Agency until application comes back from the Zoning Board of Appeals.*

    Response: Comment noted.

14. *Future review of the ARB and signage will be required upon completion of detailed plans.*

    Response: Comment noted.

15. *Project is identified in an area of potential habitat for Indiana Bats. Tree clearing restrictions must be implemented to mitigate impacts to threatened or endangered bat species.*

    Response: A note has been added to "Demolition Notes" as note 24 on sheet G002.

16. *Notes should be placed on the plans regarding any existing petroleum bulk storage tanks to be removed.*

    Response: The fuel storage tanks have been called out to be removed per NYSDOH and NYSDEC regulations on sheet C120.

17. *Any demolition of any structures on the site will require a permit from the building department. A note should be placed on the plans.*

    Response: A note has been added to "Demolition Notes" as note 23 on sheet G002.

<u>Karen Arent Landscape Architect comments, Dated March 12, 2021:</u>

1. *Large, fast-growing street trees must be planted 40' on center along Route 9W in accordance with Town of Newburgh design guidelines. Show overhead wires and plant the trees far enough away from overhead wires so that the trees do not interfere. If it is not possible to plant the trees a suitable distance, use a shorter-growing street tree.*

   Response: Tress are shown every 40-ft along Route 9W, see sheet C170.

2. *Show dense urban tolerant shrubs, and if space allows, a shade tree, in all parking islands.*

   Response: Landscaping has been added to all parking islands. See sheet C170.

3. *Grills of cars should be partially screened by a combination of 3' high stone walls and hedges in accordance with Town of Newburgh design guidelines. See Quickchek north on 9W from the site as an example.*

   Response: Landscaping has been provided to screen grills of cars.

4. *Show the edge of existing woods on the plan. Preserve as much wooded area and as many existing trees in good health and condition as possible.*

   Response: The existing and proposed tree line is shown on sheet C120.

5. *Consider using street lights similar to other projects in the vicinity.*

   Response: The light fixtures proposed on this site were chosen to resemble fixtures of site in the vicinity.

6. *A picnic table is shown. Please consider creating an attractive outdoor eating space with pavement similar to what was built at McDonald's at 65 North Plank Road as an example.*

   Response: The picnic table area has been revised. See sheet C130.

7. *Use pedestrian scale lighting in accordance with Town of Newburgh Design guidelines wherever possible, especially along pavement areas visible from Route 9W.*

   Response: In consideration of the Town's guidelines, the site consists of two types of fixtures: decorative post top, and post and arm. To maintain a pedestrian scale, the decorative post-top is at 15' mounting height along the ROW, and 18 ft high in the interior of the site. The rear Garage has three post and arm at 18 ft. mounting height.

<u>Creighton Manning comments, Dated March 12, 2021:</u>

1. *The project will remove and consolidate three existing curb-cuts into a single point of access shared by the gas/convenience store, metal garage (rented to a mechanic), and remaining residential use.*

   Response: No response required.

2. *The applicant should clarify the number of fueling positions. We count 12 positions at the regular canopy and 4 positions at the diesel canopy, as described in the FEAF Project Description but the trip generation estimate is based on 12 positions.*

   Response: The EAF will be updated upon receipt of Collier Engineering Traffic Study.

3. *The residential house to remain has two parking spaces provided. We suggest this be increased by deepening the parking to 40 feet to accommodate 4 cars in case guests visit.*

   Response: This office feels two spaces are adequate as it is a one-bedroom apartment.

4. *On site signage may be necessary to direct customers to the mechanics shop. A bypass lane should be striped around the diesel canopy.*

Response: Additional signage has been added to sheet C130. An arrow has been added to the 10-ft lane adjacent to the diesel pumps to indicate that is a bypass lane.

5. *Truck movements into and out of the diesel canopy should be demonstrated, as well as turns in and out of the driveway. Garbage truck access appears adequate.*

   Response: Truck movements are shown on sheet C131.

6. *A sidewalk is proposed along the site frontage, consistent with the nearby and recent CPC of WMM submission. The sidewalk is mostly in the State ROW with a few areas that cross onto private property to navigate around utility poles. NYSDOT should review the sidewalk alignment and advise on location, dedication, or easements. A sidewalk from the store out to the sidewalk along Route 9W is suggested.*

   Response: A sidewalk from the store to the sidewalk along Route 9W has been added.

7. *We concur with the use of ITE Land Use code 945 – Gasoline/Service Station with Convenience Market, but the estimate may be undercounted by two fueling positions. At 14 positions, the total volume would be about 170 trips in the AM peak hour, 196 trips in the PM peak hour. This will slightly increase the pass-by trips to 105 trips in the AM and 110 trips in the PM peak hour, with 65 new trips generated in the AM peak hour and 86 new trips in the PM peak hour. These numbers are based on ITE estimates, but we note the presence of three other gas/convenience stores within one mile of the subject site.*

   Response: This will be addressed as part of Collier Engineering Traffic Study.

8. *The trip generation does not account for trips generated by the mechanic or remaining residence, but these are expected to be minimal. Further, there could be some credit taken for traffic that is already generated by the site, an estimate that was previously requested but not provided.*

   Response: See response 7 above.

9. *Although approximately half of the trips accessing the site are estimated to originate from the traffic already driving by the site, approximately 170 to nearly 200 trips are estimated to enter/exit the site during the AM and PM peak hours. At a 50/50 split, expect approximately 85 to 100 trips exiting in the peak hours, or an average of one trip about every 35 to 45 seconds of the peak hours. Given the volumes on Route 9W, and observations conducted during the pandemic, we expect delays to equate to level of service (LOS) F during the peak hours. Vehicles attempting to turn left from the gas/convenience store will have the most difficult time completing the maneuver.*

   Response: See response 7 above.

10. *NYSDOT traffic volumes from 2014 indicate hourly flows of approximately 930 vehicles per hour (vph) southbound, 625 vph northbound in the AM peak hour (60%/40%) and 1,020 vph northbound, 885 vph southbound in the PM peak hour (55%/45%). Given these volumes, the applicant's engineer should discuss with NYSDOT whether a southbound left turn lane on Route 9W is needed.*

    Response: See response 7 above.

We have enclosed the following are attached:

- 12 copies of Plan Set dated January 20, 2022
- CD containing digital copies of submission

Please place this project on the agenda of the next Planning Board meeting. Please contact me at 845-486-1478 or clapine@labellapc.com if you have any questions or need any additional materials.

Sincerely,

Christopher Lapine

Christopher P. Lapine, P.E., LEED AP
Senior Civil Engineer, Regional Leader

cc: Patrick J. Hines, McGoey, Hauser and Edsall, via email and mail
Kenneth W. Wersted, Creighton Manning, via email
Dominic Cordisco, Esq., via email
Karen Arent, L.A., via email

THE Chazen COMPANIES®

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STORMWATER POLLUTION PREVENTION PLAN

for

Proposed Convenience Store with Fuel Pumps

5200 Route 9W
Town of Newburgh
Orange County, New York

Issued: January 2022

Prepared for:

Gas Land Petroleum, Inc.
3 South Ohioville Road
New Paltz, New York 12561

Prepared by:

Chazen Engineering, Land Surveying & Landscape Architecture Co., D.P.C.
21 Fox Street
Poughkeepsie, NY 12601
(845) 454-3980
www.chazencompanies.com

Chazen Project No. 81912.00

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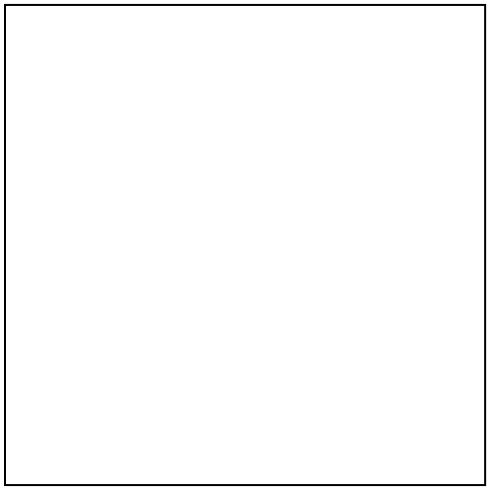
PREPARER OF THE SWPPP

"I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Name and Title[1]: Christopher Lapine, P.E. - Director

Date: Issued: January 2022



[1] This is a signature of a New York State licensed Professional Engineer employed by The Chazen Companies that is duly authorized to sign and seal Stormwater Pollution Prevention Plans (SWPPPs), NOIs, and NOTs prepared under their direct supervision. Refer to Appendix H for the Chazen Certifying Professionals Letter.

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TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

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1.0 EXECUTIVE SUMMARY

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared for major activities associated with construction of Gas Land Route 9W in the Town of Newburgh. This SWPPP includes the elements necessary to comply with the national baseline general permit for construction activities enacted by the U.S. Environmental Protection Agency (EPA) under the National Pollutant Discharge Elimination System (NPDES) program and all local governing agency requirements. This SWPPP must be implemented and permit coverage must be obtained prior to the commencement of construction activity.

This SWPPP has been developed in accordance with the "New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity," Permit No. GP-0-20-001, effective January 29, 2020 through January 28, 2025. The SWPPP and accompanying plans identify and detail stormwater management, pollution prevention, and erosion and sediment control measures necessary during and following completion of construction.

This SWPPP and the accompanying plans entitled "Site Plan & 2 Lot Subdivision Prepared For Gas Land Petroleum, Inc. for a Fueling Station & Convenience Store" have been submitted as a set. These engineering drawings are considered an integral part of this SWPPP. Therefore, this SWPPP is not considered complete without them. References made herein to "the plans" or to a specific "sheet" refer to these drawings.

This report considers the impacts associated with the intended development with the purpose of:

1. Maintaining existing drainage patterns as much as possible while continuing the conveyance of upland watershed runoff;
2. Controlling increases in the rate of stormwater runoff resulting from the proposed development so as not to adversely alter downstream conditions; and
3. Mitigating potential stormwater quality impacts and preventing soil erosion and sedimentation resulting from stormwater runoff generated both during and after construction.

The analysis and design completed and documented in this report is intended to be part of the application made for a mixed-use redevelopment project with no increase in impervious area completed on behalf of the Owner/Operator.

1.1 Project Description

Gas Land Petroleum, Inc. is proposing redevelopment project with no increase in impervious area. The site currently contains a diesel fueling station, small office building, a towing business with repair shop for its commercial vehicles, a single-family home, and an accessory barn with a one-bedroom apartment. Gas Land Petroleum, Inc. is proposing the construction of a 2, 940 square foot (SF) convenience store with six fuel pumps (12 fueling positions), two diesel pumps (4 fueling positions) for tractor trailers, and associated parking. The existing office building will be removed and the fueling operations will continue with the addition of gasoline. The towing business will be abandoned, and the use will be converted to an auto repair facility. The single-family residence will be removed. The barn with apartment will remain. The 4.518-acre parcel has frontage along NYS Route 9W along the western property line and Albany Post Road along the eastern property line. A Site Location Map has been provided in Appendix G, as Figure 1.

This type of project is included in Table 2 of Appendix B of GP-0-20-001; and the project site is not located in one of the watersheds listed in Appendix C of GP-0-20-001. Therefore, this SWPPP includes post-construction stormwater management practices, as well as erosion and sediment controls.

This project is located within the Town of Newburgh regulated, traditional land use control Municipal Separate Stormwater Sewer System (MS4). Therefore, an MS4 SWPPP Acceptance Form is required to accompany NOIs submitted to the NYSDEC.

Runoff from the project site will discharge to an unnamed tributary to the Hudson River, which is not included in the list of Section 303(d) water bodies included in Appendix E of GP-0-20-001.

Project construction activities will consist primarily of site grading, paving, building construction, and the installation of storm drainage, water supply, and sanitary sewer infrastructure necessary to support the proposed redevelopment project with no increase in impervious area. Construction phase pollutant sources anticipated at the site are disturbed (exposed) soil, vehicle fuels and lubricants, chemicals associated with building construction, and building materials. Without adequate control there is the potential for each type of pollutant to be transported by stormwater.

1.2 Stormwater Pollution Controls

The stormwater pollution controls outlined herein have been designed and evaluated in accordance with the following standards and guidelines:

- New York State Stormwater Management Design Manual, dated January 2015 (Design Manual).
- New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016 (SSESC).

Stormwater quality will be enhanced through the implementation of temporary and permanent erosion and sediment control measures, the proposed stormwater management practices, and other construction-phase pollution controls outlined herein.

The proposed stormwater management approach consisting of pipes and on-site stormwater management practices will adequately collect, treat, and convey the stormwater runoff.

A hydrodynamic separator will be used to treat stormwater runoff generated by the proposed redevelopment project with no increase in impervious area.

Pre- and post-development surface runoff rates have been evaluated for the 1-, 10-, and 100-year 24-hour storm events. Comparison of pre- and post-development watershed conditions demonstrates that the peak rate of runoff from the project site will not be increased.

The post-construction stormwater management practice will be privately owned by Gas Land Petroleum, Inc. Deed restrictions will be in place, which require operation and maintenance of the practice in accordance with the operation and maintenance plan.

1.3 Conclusion

This project is subject to the requirements of the Town of Newburgh regulated MS4, and this SWPPP has been prepared in conformance with the current Design Manual and SSESC. As such, GP-0-20-001 coverage will be effective five (5) business days from the date the NYSDEC receives the electronically submitted eNOI and signed "MS4 SWPPP Acceptance" form, or ten (10) business days from the date the NYSDEC receives the complete paper NOI and signed "MS4 SWPPP Acceptance" form.

2.0 SWPPP IMPLEMENTATION RESPONSIBILITIES

A summary of the responsibilities and obligations of all parties involved with compliance with the NYSDEC SPDES General Permit GP-0-20-00 conditions is outlined in the subsequent sections. For a complete listing of the definitions, responsibilities, and obligations, refer to the SPDES General Permit GP-0-20-001 presented in Appendix A.

2.1 Definitions

1. "General SPDES Permit" means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 authorizing a category of discharges.

2. "Owner" or "Operator" means the person, persons, or legal entity which owns or leases the property on which the *construction activity* is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications. There may be occasions during the course of a project in which there are multiple Owners/Operators, all of which will need to file and maintain the appropriate SWPPP documents and plans, including without limitation, the Notice of Intent (NOI) and Notice of Termination (NOT).

3. "Owner's/Operator's Engineer" means the person or entity retained by an Owner/Operator to design and oversee the implementation of the SWPPP.

4. "Contractor" means the person or entity identified as such in the construction contract with the Owner/Operator. The term "Contractor" shall also include the Contractor's authorized representative, as well as any and all subcontractors retained by the Contractor.

5. "Qualified Inspector" means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

   It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that an individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles

from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

6. "Qualified Professional" means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect, or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

7. "Trained Contractor" means an employee from a contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *Trained Contractor* shall receive four (4) hours of training every three (3) years.

   It can also mean an employee from a contracting (construction) company, identified in Part III.A.6.,that meets the *Qualified Inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity.

   The "Trained Contractor(s)" will be responsible for the day to day implementation of the SWPPP.

2.2 Owner's/Operator's Responsibilities

1. Ensure that control measures are selected, designed, installed, implemented and maintained to minimize the discharge of pollutants and prevent a violation of the water quality standards, meeting the non-numeric effluent limitations in Part I.B.1.(a)-(f) of the SPDES General Permit and in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

2. Ensure that practices are selected, designed, installed, and maintained to meet the performance criteria in the Design Manual. Practices must be designed to meet the applicable sizing criteria in Part I.C.2.a., b., c. or d. of GP-0-20-001.

3. Retain the services of a "Qualified Inspector" or "Qualified Professional" as defined under Section 2.1, to provide the services outlined in Section 2.5 "Qualified Inspector's/Qualified Professional's Responsibilities."

4. Retain the services of a "Qualified Professional," as defined under Section 2.1, to provide the services outlined in Section 2.3 "Owner's/Operator's Engineers Responsibilities."

5. Have an authorized corporate officer sign the completed NOI. A copy of the completed NOI is included in Appendix B.

6. Submit the electronic version of the NOI (eNOI) along with the MS4 SWPPP acceptance form using the NYSDEC's website (http://www.dec.ny.gov/chemical/43133.html).

7. Pay the required initial and annual fees upon receipt of invoices from NYSDEC. These invoices are generally issued in the fall of each year. The initial fee is calculated as $110.00 per acre disturbed plus $675.00 per acre of net increase in impervious cover, and the annual fee is $110.00.

8. Prior to the commencement of construction activity, identify the contractor(s) and subcontractor(s) that will be responsible for implementing the erosion and sediment control measures and stormwater management practices described in this SWPPP. Have each of these contractors and subcontractors identify at least one "Trained Contractor", as defined under Section 2.1 that will be responsible for the implementation of the SWPPP. Ensure that the Contractor has at least one "Trained Contractor" on site on a daily basis when soil disturbance activities are being performed.

9. Schedule a pre-construction meeting which shall include the Town of Newburgh representative, Owner's/Operator's Engineer, Contractor, and their sub-contractors to discuss responsibilities as they relate to the implementation of this SWPPP.

10. Retain the services of an independent certified materials testing and inspection firm operating under the direction of a licensed Professional Engineer to perform regular tests, inspections, and certifications of the construction materials used in the construction of all post-construction stormwater management practices.

11. Retain the services of a NYS licensed land surveyor to perform an as-built topographic survey of the completed post-construction stormwater management facilities.

12. Require the Contractor to fully implement the SWPPP prepared for the site by the Owner/Operator's Engineer to ensure that the provisions of the SWPPP are implemented from the commencement of construction activity until all areas of disturbance have achieved final stabilization and the Notice of Termination (NOT) has been submitted to the NYSDEC.

13. Forward a copy of the NOI Acknowledgement Letter received from the regulatory agency to the Owner's/Operator's Engineer for project records, and to the Contractor for display at the construction site.

14. Maintain a copy of the General Permit (GP-0-20-001), NOI, NOI Acknowledgement Letter, SWPPP, MS4 SWPPP Acceptance Form, inspection reports, Spill Prevention, Countermeasures, Cleanup ("SPCC") Plan, and all documentation in accordance with Part I.F.8.a.-d of GP-0-20-001 necessary to demonstrate eligibility with the permit at the construction site, until all disturbed areas have achieved final stabilization and the NOT has been submitted to the NYSDEC. Place documents in a secure location that must be accessible during normal business hours to an individual performing a compliance inspection.

15. Prior to submitting a Notice of Termination, ensure for post-construction stormwater management practice(s) that are privately owned, the Owner/Operator has a deed restriction in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

16. Submit a Notice of Termination (NOT) form (see Appendix B) within 48 hours of receipt of the Owner's/Operator's Engineer's certification of final site stabilization to the following:

    NOTICE OF TERMINATION
    NYS DEC, Bureau of Water Permits
    625 Broadway, 4th Floor
    Albany, New York 12233-3505

    Town of Newburgh
    21 Hudson Valley Professional Plaza
    Newburgh, New York 12550

17. Request and receive all SWPPP records from the Owner's/Operator's Engineer and archive those records for a minimum of five (5) years after the NOT is filed.

18. Implement the Post-Construction Inspections and Maintenance procedures outlined in Appendix F.

19. The NOI, SWPPP, and inspection reports required by GP-0-20-001 are public documents that the Owner/Operator must make available for review and copying by any person within five (5) business days of the Owner/Operator receiving a written request by any such person to review the NOI, SWPPP, or inspection reports. Copying of documents will be done at the requester's expense.

20. The Owner/Operator must keep the SWPPP current at all times. At a minimum, the Owner/Operator shall amend the SWPPP:

    a) Whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater discharges from the project site;

    b) Whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the discharge of pollutants; and

    c) To address issues or deficiencies identified during an inspection by the "Qualified Inspector," the Department, or other Regulatory Authority.

    d) To document the final construction conditions.

2.3 Owner's/Operator's Engineer's Responsibilities

1. Prepare the SWPPP using good engineering practices, best management practices, and in compliance with all federal, state, and local regulatory requirements.

2. Prepare the Notice of Intent (NOI) form (see Appendix B), sign the "SWPPP Preparer Certification" section of the NOI, and forward to Owner/Operator for signature.

3. Provide copies of the SWPPP to the Town of Newburgh once all signatures and attachments are complete.

4. Enter Contractor's information in Section 2.5 "SWPPP Participants" once a Contractor is selected by the Owner/Operator.

5. Update the SWPPP each time there is a significant modification to the pollution prevention measures or a change of the principal Contractor working on the project who may disturb site soil.

2.4 Contractor's Responsibilities

1. Sign the SWPPP Contractor's Certification Form contained within Appendix C and forward to the Owner's/Operator's Engineer for inclusion in the Site Log Book.

2. Identify at least one Trained Contractor that will be responsible for implementation of this SWPPP. Ensure that at least one Trained Contractor is on site on a daily basis when soil disturbance activities are being performed. The Trained Contractor shall inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating conditions at all times. If deficiencies are identified, the contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

3. Provide the names and addresses of all subcontractors working on the project site. Require all subcontractors who will be involved with construction activities that will result in soil disturbance to identify at least one Trained Contractor that will be on site on a daily basis when soil disturbance activities are being performed; and to sign a copy of the Subcontractor's Certification Form contained within Appendix C, then forward to the Owner's/Operator's Engineer for inclusion into the Site Log Book. This information must be retained as part of the Site Log Book.

4. Maintain a Spill Prevention and Response Plan in accordance with requirements outlined in Section 5 of this SWPPP. This plan shall be provided to the Owner's/Operator's Engineer for inclusion in the Site Log Book, prior to mobilization on-site.

5. Participate in a pre-construction meeting which shall include the Town of Newburgh representative, Owner/Operator, Owner's/Operator's Engineer, and all subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.

6. If Contractor plans on utilizing adjacent properties for material, waste, borrow, or equipment storage areas, or if Contractor plans to engage in industrial activity other than construction (such as

operating asphalt and/or concrete plants) at the site, Contractor shall submit appropriate documentation to the Owner's/Operator's Engineer so that the SWPPP can be modified accordingly.

7. Implement site stabilization, erosion and sediment control measures, and other requirements of the SWPPP.

8. In accordance with the requirements in the most current version of the NYS Standards and Specifications for Erosion and Sediment Control, conduct inspections of erosion and sediment control measures installed at the site to ensure that they remain in effective operating condition at all times. Prepare and retain written documentation of inspections as well as of all repairs/maintenance activities performed. This information must be retained as part of the Site Log Book.

9. Begin implementing corrective actions within one (1) business day of receipt of notification by the Qualified Inspector/Qualified Professional that deficiencies exist with the erosion and sediment control measures employed at the site. Corrective actions shall be completed within a reasonable time frame.

10. Maintain a record of the date(s) and location(s) that soil restoration is performed in accordance with the accompanying plans and NYSDEC Division of Water's publication "Deep-Ripping and Decompaction," dated April 2008. A copy of this is publication is provided in Appendix E. The record that is to be maintained shall be a copy of the overall site grading plan delineating the area(s) and date(s) that the soil was restored.

11. Upon completion of all construction at the site, the contractor responsible for overall SWPPP Compliance shall sign the certification on their Contractor Certification Form indicating that: a.) all temporary erosion and sediment control measures have been removed from the site, b.) the on-site soils disturbed by construction activity have been restored in accordance with the SWPPP and the NYSDEC Division of Water's publication "Deep-Ripping and Decompaction," and c.) all permanent stormwater management practices required by the SWPPP have been installed in accordance with the contract documents.

2.5 Qualified Inspector's/Qualified Professional's Responsibilities

1. Participate in a pre-construction meeting with the Town of Newburgh representative, Owner/Operator, Contractor, and their subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.

2. Conduct an initial assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment control measures described within this SWPPP have been adequately installed and implemented to ensure overall preparedness of the site.

3. Provide on-site inspections to determine compliance with the SWPPP. Site inspections shall occur at an interval of at least once every seven calendar days. A written inspection report shall be provided to the Owner/Operator and general contractor within one business day of the completion

of the inspection, with any deficiencies identified. A sample inspection form is provided in Appendix D.

4. Prepare an inspection report subsequent to each and every inspection that shall include/address the items listed in Part IV.C.4.a-k of GP-0-20-001. Sign all inspection reports and maintain on site with the SWPPP.

5. Notify the owner/operator and appropriate contractor or subcontractor of any corrective actions that need to be taken.

6. Prepare a construction Site Log Book to be used as a record of all inspection reports generated throughout the duration of construction. Ensure that the construction Site Log Book is maintained and kept up-to-date throughout the duration of construction.

7. Review the Contractor's SWPPP records on a periodic basis to ensure compliance with the requirements for daily reports, soil restoration, inspections, and maintenance logs.

8. Based on the as-built survey and material testing certifications performed by others, perform evaluations of the completed stormwater management practices to determine whether they were constructed in accordance with this SWPPP.

9. Conduct a final site assessment and prepare a certification letter to the Owner/Operator indicating that, upon review of the material testing and inspection reports prepared by the firm retained by the Owner/Operator, review of the completed topographic survey, and evaluation of the completed stormwater management facilities, the stormwater management facilities have been constructed substantially in accordance with the contract documents and should function as designed.

10. Prepare the Notice of Termination (NOT). Sign the NOT Certifications VI (Final Stabilization) and VII (Post-construction Stormwater Management Practices), and forward the NOT to the Owner/Operator for signature on Certification VIII (Owner/Operator Certification).

11. Transfer the SWPPP documents, along with all NOI's, permit certificates, NOT's, construction Site Log Book, and written records required by the General Permit to the Owner/Operator for archiving.

2.6 SWPPP Participants

1. Owner's/Operator's Engineer:

Christopher Lapine, P.E. - Director
The Chazen Companies
21 Fox Street
Poughkeepsie, NY 12601
Phone: (845) 454-3980
Fax: (845) 454-4026

2. Owner/Operator:

Zeidan Nesheiwat
Gas Land Petroleum, Inc.
3 South Ohioville Road
New Paltz, New York 12561
Phone: (845) 331-7545

3. Contractor[2]:

Name and Title: _____

Company Name: _____

Mailing Address: _____

_____

Phone: _____

Fax: _____

[2] *Contractor's information to be entered once the Contractor has been selected.*

3.0 SITE CHARACTERISTICS

3.1 Land Use and Topography

The project parcel is situated in two zoning districts and an overlay district, according to the Town of Newburgh Zoning Map. The front portion is located in the Business (B) zoning district and the "Light and Heavy Equipment and Recreational Vehicle Sales, Service and Repair" (LHI) Overlay. The rear portion of the parcel is located in the R3 Residential District. The zoning across Route 9W from the site is R2 with Professional Office (O) Overlay and B with LHI Overlay. "Convenience stores with or without gasoline filling stations" are permitted in the B district subject to site plan review by the Planning Board.

The overall site is extremely sloping in the rear of the site and slightly sloping in the front of the site. The slopes range from 1.2 to 43 percent. Site elevations range from approximately 285 feet above mean sea level (MSL) to 350 feet MSL. The highest part of the site is on the east property line along Old Post Road. The site elevation steeply declines westward for about a third of the site. The site is moderately sloping the rest of the way toward Route 9W.

3.2 Soils and Groundwater

Table 1: USDA Soil Data

Map Symbol & Description	Hydrologic Soil Group	Permeability (inches/hour)	Erosion Factor K	Depth to Water Table (inches)	Depth to Bedrock (inches)
Du – Dumps	NA	NA	NA	>78	>78
MdC – Mardin gravelly silt loam, 8 to 15 percent slopes	D	0.0 – 0.14	0.20	13 to 24	14 to 26 to fragipan; >72 to BR
MdD – Mardin gravelly silt loam, 15 to 25 percent slopes	D	0.0 – 0.14	0.20	13 to 24	14 to 26 to fragipan; >72 to BR

Upon review of the soil data presented in Table 1, the project site does not contain soils with a soil slope phase of D with a map unit name that inclusive of slopes greater than 25%, and does not contain soils with a soil slope phase of E or F.

The Soil Conservation Service defines the hydrologic soil groups as follows:

- Type D Soils: Soils having a very low infiltration rate and high runoff potential when thoroughly wet. These soils consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very low rate of water transmission.

The soils map for the study area is presented in Appendix G, as Figure 2.

3.3 Watershed Designation

The project site is not located in a restricted watershed identified in Appendix C of GP-0-20-001.

3.4 Receiving Water Bodies

The nearest natural classified water course into which runoff from the project site will discharge is an an unnamed tributary to the Hudson River.

The an unnamed tributary to the Hudson River is classified by NYSDEC as a Class C water course, and is not included in the Section 303(d) list of impaired waters found in Appendix E of GP-0-20-001.

3.5 Aquifer Designation

The project site is not located over a US EPA designated Sole Source aquifer; nor is it located over a Primary or Principal aquifer listed in the NYSDEC Technical and Operational Guidance Series (TOGS) 2.1.3 (1980).

3.6 Wetlands

A search on the NYSDEC Environmental Resource Mapper on November 10, 2020, and a review of GIS data, determined that no regulated wetlands are located on or in the vicinity of the project site.

3.7 Flood Plains

According to the National Flood Insurance Program Flood Insurance Rate Map (FIRM), Town of Newburgh, New York, Community Panel Number 360627, the project site lies within Flood Zone X, areas determined to be outside 500-year floodplain.

3.8 Listed, Endangered, or Threatened Species

A search was performed on the NYSDEC Environmental Resource Mapper on November 10, 2020, and determined that the project site does contain threatened or endangered species, or critical habitat. An Environmental Resource Map has been provided in Appendix G, as Figure 4.

According to the NYSDEC Environmental Resource Mapper, there are known occurrences of endangered, threatened, or rare species on or in the vicinity of the project site, and the FEAF Mapper automated responses indicate the potential for the Indiana bat in the vicinity of the site. An information request has been submitted to NYSDEC for further information. According to the US Fish & Wildlife Service (USFWS) Official Species List, there is potential for the following species in the vicinity of the project site: Indiana bat (State and Federally endangered); northern long-eared bat (State and Federally threatened); bog turtle (State endangered and Federally threatened); dwarf wedgemussel (State and Federally endangered); and small whorled pogonia (State and Federally threatened). The project site consists of developed, previously disturbed area with a significant amount of gravel parking and driveways. The area of the proposed convenience store with fuel pumps consists of impervious surface and gravel. There are no wetlands on the

site suitable for bog turtle, and only a few trees may be removed for the temporary disturbance for water line installation. Therefore, no impacts to any of these species are anticipated.

3.9 Historic Places

A search on the New York State Cultural Resource Information System (CRIS) database, performed on November 10, 2020, revealed that the property is not located within an archeologically sensitive area, and is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places. Additionally, the construction activity does not include the construction of a new building within 20 feet of any structure more than 50 years old. A printout of the historic places screening map is presented in Appendix G, as Figure 3.

3.10 Rainfall Data

Rainfall data utilized in the modeling and analysis was obtained from the Cornell University online Extreme Precipitation in New York & New England website (http://precip.eas.cornell.edu/). A local IDF file was imported, and specific mass curves were generated, in HydroCAD to evaluate the pre- and post-development stormwater runoff characteristics. Rainfall data specific to the portion of Orange County under consideration, for various 24-hour storm events, is presented in the following Table:

Table 2: Rainfall Data

Storm Event Return Period	24-Hour Rainfall (inches)
1-year	2.60
10-year	4.67
100-year	8.24

4.0 CONSTRUCTION SEQUENCE

This project has not received written approval from Town of Newburgh allowing the disturbance of more than five acres of land at any one time. Therefore, if the Contractor's construction sequence requires the disturbance of more than five acres at any one time, written approval must be obtained from NYSDEC prior to disturbing more than five acres at once.

The "Erosion and Sediment Control Plan" in the accompanying drawings identifies the major construction activities that are the subject of this SWPPP. The order (or sequence) in which the major activities are expected to begin is presented on the accompanying drawings, though each activity will not necessarily be completed before the next begins. In addition, these activities could occur in a different order if necessary to maintain adequate erosion and sediment control. If this is the case, the contractor shall notify the Owner's/Operator's Engineer overseeing the implementation of the SWPPP.

The Contractor will be responsible for implementing the erosion and sediment control measures identified on the plans. The Contractor may designate these tasks to certain subcontractors as they see fit, but the ultimate responsibility for implementing these controls and ensuring their proper function remains with the Contractor.

Refer to the accompanying plans for details and specifications regarding the construction sequencing schedule.

5.0 CONSTRUCTION-PHASE POLLUTION CONTROL

The SWPPP and accompanying plans identify the temporary and permanent erosion and sediment control measures that have been incorporated into the design of this project. These measures will be implemented during construction, to minimize soil erosion and control sediment transport off-site, and after construction, to control the quality and quantity of stormwater runoff from the developed site.

Erosion control measures, designed to minimize soil loss, and sediment control measures, intended to retain eroded soil and prevent it from reaching water bodies or adjoining properties, have been developed in accordance with the following documents:

- NYSDEC SPDES General Permit for Stormwater Discharges From Construction Activity, Permit No. GP-0-20-001 (effective January 29, 2020 through January 28, 2025)
- New York State Standards and Specifications for Erosion and Sediment Control, NYSDEC (November 2016)

The SWPPP and accompanying plans outline the construction scheduling for implementing the erosion and sediment control measures. These documents include limitations on the duration of soil exposure, criteria and specifications for placement and installation of the erosion and sediment control measures, a maintenance schedule, and specifications for the implementation of erosion and sediment control practices and procedures.

Temporary and permanent erosion and sediment control measures that shall be applied during construction generally include:

1. Minimizing soil erosion and sedimentation by stabilization of disturbed areas and by removing sediment from construction site discharges.
2. Preservation of existing vegetation to the greatest extent practical. Following the completion of construction activities in any portion of the site, permanent vegetation shall be established on all exposed soils.
3. Site preparation activities to minimize the area and duration of soil disruption.
4. Establishment of permanent traffic corridors to ensure that “routes of convenience” are avoided.

5.1 Temporary Erosion and Sediment Control Measures

The temporary erosion and sediment control measures described in the following sections are included as part of the construction documents.

5.1.1 Stabilized Construction Access

Prior to construction, stabilized construction access(es) will be installed, per accompanying plans, to reduce the tracking of sediment onto public roadways.

Construction traffic must enter and exit the site at the stabilized construction access(es). The intent is to trap dust and mud that would otherwise be carried off-site by construction traffic.

The access(es) shall be maintained in a condition, which will control tracking of sediment onto public rights-of-way or streets. When necessary, additional aggregate will be placed atop the filter fabric to assure the minimum thickness is maintained. All sediment and/or soil spilled, dropped, or washed onto public rights-of-way must be removed immediately. Periodic inspection and needed maintenance shall be provided after each substantial rainfall event.

5.1.2 Dust Control

Water trucks shall be used as needed during construction to reduce dust generated on-site. Dust control must be provided by the Contractor(s) to a degree that is acceptable to the Owner, and in compliance with the applicable local and state dust control requirements.

5.1.3 Temporary Soil Stockpile

Materials, such as topsoil, will be temporarily stockpiled (if necessary) on the site during the construction process. Stockpiles shall be located in an area away from storm drainage, water bodies and/or courses, and will be properly protected from erosion by a surrounding silt fence barrier.

5.1.4 Silt Fencing

Prior to the initiation of and during construction activities, a geotextile filter fabric (or silt fence) will be established downgradient of all disturbed areas. These barriers may extend into non-impact areas to provide adequate protection of adjacent lands.

Clearing and grubbing will be performed only as necessary for the installation of the sediment control barrier. To facilitate effectiveness of the silt fencing, daily inspections and inspections immediately after significant storm events will be performed by the Contractor(s). Maintenance of the fence will be performed as needed.

5.1.5 Temporary Seeding

For areas undergoing clearing, grading, and disturbance as part of construction activities, where work has temporarily ceased, temporary soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the soil disturbance activity has temporarily ceased.

5.1.6 Stone and Block Drop Inlet Protection

Concrete blocks surrounded by wire mesh and crushed stone will be placed around both existing catch basins, and proposed catch basins once they have been installed, to prevent sediment from entering the catch basins and storm sewer system. During construction, crushed stone shall be replaced as necessary to ensure proper function.

5.1.1 Manufactured Insert Inlet Protection

Install insert inlet protection beneath the grate of all catch basins, to prevent sediment from entering the catch basins and storm sewer system. Remove sediment accumulation and repair or replace insert as necessary to ensure proper function.

5.1.2 Filter Fabric Drop Inlet Protection

Install filter fabric or silt fence with wooden stakes at the perimeter of existing or proposed catch basins located in lawn areas, to prevent sediment from entering the catch basins and storm sewer system. Remove sediment accumulation and repair or replace fabric as necessary to ensure proper function.

5.1.3 Erosion Control Blanket

Erosion control blankets shall be installed in accordance with manufacturer's requirements on all slopes exceeding 3:1. Erosion control blankets provide temporary erosion protection, rapid vegetative establishment, and long-term erosion resistance to shear stresses generated by high runoff flow velocities associated with steep slopes.

5.1.4 Dewatering Operations

Dewatering will be used to intercept sediment-laden stormwater or pumped groundwater and allow it to settle out of the pumped discharge prior to being discharged from the site. Water from dewatering operations shall be treated to eliminate the discharge of sediment and other pollutants. Water resulting from dewatering operations shall be directed to temporary sediment traps or dewatering devices. Temporary sediment traps and dewatering bags will be provided, installed, and maintained at downgradient locations to control sediment deposits to downstream surfaces.

5.1.5 Fiber Roll

Prior to the initiation of and during construction activities, fiber rolls (12" minimum diameter) will be established downgradient of all disturbed areas to reduce sheet flow on slopes. These rolls may extend into non-impact areas to provide adequate protection of adjacent lands. Spacing will conform to NYSDEC specification for straw bale dike.

Clearing and grubbing will be performed only as necessary for the installation of the fiber rolls. To facilitate effectiveness, daily inspections and inspections immediately after significant storm events will be performed by the Contractor(s) and maintenance will be performed as needed.

5.2 Permanent Erosion and Sediment Control Measures

The permanent erosion and sediment control measures described in the following sections are included as part of the construction documents.

5.2.1 Establishment of Permanent Vegetation

Disturbed areas that will be vegetated must be seeded in accordance with the contract documents. The type of seed, mulch, and maintenance measures as described in the contract documents shall also be followed.

Permanent soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the soil disturbance activity has permanently ceased.

Final site stabilization is achieved when all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of 80 percent has been established or equivalent

stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

5.2.2 Permanent Turf Reinforcement

Permanent turf reinforcement mats (TRMs) provide long-term erosion protection and vegetation establishment assistance while permanently reinforcing vegetation. TRMs shall be installed on slopes/channels where specified. TRM's provide two key advantages. First, their unique fiber shape and 3-D pattern create a thick matrix of voids that trap seed, soil, and water in place for quicker, thicker vegetation growth. Secondly, they provide additional reinforcement that doubles the vegetation's natural erosion protection abilities by remaining a permanent part of the application and anchoring mature plants to the soil for superior, long-term erosion resistance.

5.3 Other Pollutant Controls

Other necessary pollutant controls are listed below:

5.3.1 Solid and Liquid Waste Disposal

No solid or liquid waste materials, including building materials, shall be discharged from the site with stormwater. All solid waste, including disposable materials incidental to any construction activities, must be collected and placed in containers. The containers shall be emptied periodically by a licensed trash disposal service and hauled away from the site.

Substances that have the potential for polluting surface and/or groundwater must be controlled by whatever means necessary in order to ensure that they do not discharge from the site. As an example, special care must be exercised during equipment fueling and servicing operations. If a spill occurs, it must be contained and disposed of so that it will not flow from the site or enter groundwater, even if this requires removal, treatment, and disposal of soil. In this regard, potentially polluting substances should be handled in a manner consistent with the impact they represent.

5.3.2 Sanitary Facilities

Temporary sanitary facilities will be provided by the Contractor throughout the construction phase. They must be utilized by all construction personnel and will be serviced by a licensed commercial Contractor. These facilities must comply with state and local sanitary or septic system regulations.

5.3.3 Water Source

Non-stormwater components of site discharge must be clean water. Water used for construction, which discharges from the site, must originate from a public water supply or private well approved by the Health Department. Water used for construction that does not originate from an approved public supply must not discharge from the site; such water can be retained in temporary ponds/sediment traps until it infiltrates and/or evaporates.

5.4 Construction Housekeeping Practices

During the construction phase, the Contractor(s) will implement the following measures:

5.4.1 Material Stockpiles

Material resulting from clearing and grubbing operations that will be stockpiled on-site, must be adequately protected with downgradient erosion and sediment controls.

5.4.2 Equipment Cleaning and Maintenance

The Contractor(s) will designate areas for equipment cleaning, maintenance, and repair. The Contractor(s) and subcontractor(s) will utilize those areas. The areas will be protected by a temporary perimeter berm.

5.4.3 Detergents

The use of detergents for large-scale washing is prohibited (i.e., vehicles, buildings, pavement surfaces, etc.)

5.4.4 Spill Prevention and Response

A Spill Prevention and Response Plan shall be developed for the site by the Contractor(s). The plan shall detail the steps required in the event of an accidental spill and shall identify contact names and phone numbers of people and agencies that must be notified.

The plan shall include Safety Data Sheets (SDS) for all materials to be stored on-site. All workers on-site will be required to be trained on safe handling and spill prevention procedures for all materials used during construction. Regular tailgate safety meetings shall be held and all workers that are expected on the site during the week shall be required to attend.

5.4.5 Concrete Washout Areas

A temporary concrete washout area shall be provided for every project where concrete will be poured or otherwise formed on-site, and shall consist of an excavated or above-ground lined construction pit where concrete trucks or equipment can be washed out after their loads have been discharged. Waste generated from concrete wash water that shall not be allowed to flow into drainage ways, inlets, receiving waters, highway right-of-way, or any location other than the designated concrete washout area(s). Proper signage shall be placed adjacent to the facility to designate the “Concrete Washout Area”. Locate the facility a minimum of 100-feet from drainage swales, storm drain inlets, wetlands, streams, and other surface waters. Prevent surface water from entering the washout area.

The hardened residue from the concrete wash areas will be disposed of in the same manner as other non-hazardous construction waste materials. Maintenance of the washout area shall include removal of hardened material when 75% of the storage capacity is filled, and a minimum freeboard of 12 inches shall be maintained. The Contractor will be responsible for seeing that these procedures are followed. The project may require the use of multiple concrete washout areas based on the frequency of concrete pours.

5.4.6 Material Storage

Construction materials shall be stored in a dedicated staging area. The staging area shall be located in an area that prevents negative impacts of construction materials on stormwater quality.

Chemicals, paints, solvents, fertilizers, and other toxic material must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated, and disposed of at an approved solid waste or chemical disposal facility.

6.0 STORMWATER MANAGEMENT PLANNING

Chapter 3 of the Design Manual outlines a six-step planning process for site planning and selection of stormwater management practices that must be implemented for both new development and redevelopment projects. This process is intended to develop a design that maintains pre-construction hydrologic conditions through the application of environmentally sound development principles, as well as treatment and control of runoff discharges from the site. The following sections outline the step-by-step process and how it has been applied to this project.

The goals of this Stormwater Management Plan are to analyze the peak rate of runoff under pre- and post-development conditions, to maintain the pre-development rate of runoff in order to minimize impacts to adjacent or downstream properties, and to minimize the impact to the quality of runoff exiting the site.

The Design Manual provides both water quality and water quantity objectives to be met by projects requiring a "Full SWPPP". These objectives will be met by applying stormwater control practices to limit peak runoff rates and improve the quality of runoff leaving the developed site.

6.1 STEP 1 – Site Planning

During the Site Planning process, the project site is evaluated for implementation of the green infrastructure planning measures identified in Table 3.1 of the Design Manual, in order to preserve natural resources and reduce impervious cover. Table A of Appendix K provides a description of each green infrastructure planning measure, along with a project specific evaluation.

6.2 STEP 2 - Determine Water Quality Treatment Volume (WQv)

Stormwater runoff from impervious surfaces is recognized as a significant contributor of pollution that can adversely affect the quality of receiving water bodies. Therefore, treatment of stormwater runoff is important since most runoff related water quality contaminants are transported from land, particularly the impervious surfaces, during the initial stages of storm events.

6.2.1 NYSDEC Requirements for New Development

The Design Manual requires that water quality treatment be provided for the initial flush of runoff from every storm. The NYSDEC refers to the amount of runoff to be treated as the "Water Quality Volume" (WQv). Section 4.2 of the Design Manual defines the Water Quality Volume as follows:

$$WQv = \frac{[(P)(R_V)(A)]}{12}$$

Where: P = 90% Rainfall Event Number
R_v = 0.05 + 0.009 (I)
I = Impervious Cover (Percent)
A = Contributing Area in Acres

This definition ensures that, all other things being equal, the Water Quality Volume will increase along with the impervious cover percentage.

6.2.2 NYSDEC Requirements for Redevelopment Projects

Chapter 9 of the Design Manual outlines alternative WQv treatment objectives for redevelopment projects.

According to Section 9.2.1.B.III, redevelopment activities can achieve the water quality treatment objective by treating 75% of the water quality volume associated with the disturbed, impervious area, as well as any additional runoff from tributary areas that are not within the disturbed, impervious area, through an Alternative SMP. This project will implement hydrodynamic separator to meet the water quality objective.

6.2.3 Methodology

The Water Quality Volume equation has been applied to the drainage area tributary to the stormwater quality practices proposed for this project. The practice has been sized to accommodate the Water Quality Volume, as per the performance criteria presented in Chapter 9 of the Design Manual. Water quality volume calculations for each of the proposed practice is presented in Table B of Appendix K.

6.3 STEP 3 – Apply Runoff Reduction Techniques and Standard SMPs with RRv Capacity to Reduce Total WQv

Land use change and development in the watershed increases the volume of runoff. As such, reductions in the amount of runoff from new development, accomplished through the implementation of a stormwater management plan for the site, will play an important role in the success or failure of the watershed-wide stormwater management plan. Runoff reduction techniques can be applied to manage, reduce, and treat stormwater, while maintaining and restoring natural hydrology through infiltration, evapo-transpiration, and the capture and reuse of stormwater. Volume reduction techniques by themselves typically are not sufficient to provide adequate attenuation of stormwater runoff, but they can decrease the size of the peak runoff rate reduction facilities.

6.3.1 NYSDEC Requirements for New Development

The Design Manual states that runoff reduction shall be achieved through infiltration, groundwater recharge, reuse, recycle, and/or evaporation/evapotranspiration of 100-percent of the post-development water quality volume to replicate pre-development hydrology. Runoff control techniques provide treatment in a distributed manner before runoff reaches the collection system, by maintaining pre-construction infiltration, peak runoff flow, discharge volume, as well as minimizing concentrated flow. This can be accomplished by applying a combination of Runoff Reduction Techniques, standard Stormwater Management Practices (SMPs) with RRv capacity, and good operation and maintenance. This project does not have any new development.

6.3.2 NYSDEC Requirements for Redevelopment

Section 3.2 of the Design Manual indicates, “Although encouraged, meeting the RRv criteria is not required for redevelopment activities that meet the criteria in Chapter 9 of this manual.” This project involves the

reconstruction of existing impervious area on a site that has poor draining soil conditions and steep slopes, which renders implementation of many RR techniques and SMPs infeasible.

As such, a hydrodynamic separator has been applied to the project to meet the WQv objective, as outlined in Section 6.5.

6.3.3 Hydrodynamic Separators

Hydrodynamic separators accelerate the separation of floating and settling pollutants from stormwater through the use of a vortex. These pre-fabricated devices come in the form of an underground manhole or vault. The devices have no moving parts and are typically fabricated from concrete and marine grade aluminum.

During operation, stormwater runoff enters the unit tangentially to promote a gentle swirling motion in a treatment chamber. As stormwater circles within the chamber, settable solids fall into a sump and are retained. Buoyant debris, oil, and grease rise to the surface and are separated from the water as it flows under a baffle wall. Finally, treated water exits the treatment chamber through a flow control orifice located behind the baffle wall.

During low-flow conditions all runoff is diverted into the treatment chamber by a flow partition. At higher flow rates, a portion of the runoff spills over the flow partition and is diverted around the treatment chamber to prevent re-suspension and washout of previously trapped pollutants. Water that spills over the partition flows into a head equalization chamber above the treatment chamber outlet. As the head equalization chamber fills, the head differential driving flow through the treatment chamber collapses. The result is that flow rates in the treatment chamber remain relatively constant even as total flow rates increase substantially. This configuration further reduces the potential for re-suspension or washout.

According to Chapter 9 of the Design Manual, hydrodynamic separators of the type proposed for this project have been approved for use as a pretreatment system in new and redevelopment projects or as a primary treatment system on redevelopment projects.

6.4 STEP 4 – Determine the Minimum RRv Required

As previously discussed, meeting the RRv criteria is not required for redevelopment activities with no increase in impervious, that meet the criteria in Chapter 9 of the Design Manual.

6.5 STEP 5 – Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

As previously discussed, 100% of the required WQv is being provided and the minimum RRv is zero since there is no new impervious area. As such, the water quality and runoff reduction volume criteria have been met and no other standard SMPs are required.

The following Table summarizes both the Water Quality Volume requirements and the treatment volumes provided.

Table 3: Summary of WQ Practices

SWM Practice ID	Calculated WQv (CF)	Treatment Volume Provided (CF)
HYD-1	6,636	7,035

6.6 STEP 6 - Apply Volume and Peak Rate Control

This report presents the pre-development and post-development features and conditions associated with the rate of surface water runoff within the study area. For both cases, the drainage patterns, drainage structures, soil types, and ground cover types are considered in this study.

6.6.1 NYSDEC Requirements for New Development

Chapter 4 of the Design Manual requires that projects meet three separate stormwater quantity criteria:

1. The Channel Protection (CPv) requirement is designed to protect stream channels from erosion. This is accomplished by providing 24 hours of extended detention for the 1-year, 24-hour storm event. The Manual defines the CPv detention time as the center of mass detention time through each stormwater management practice.

2. The Overbank Flood Control (Qp) requirement is designed to prevent an increase in the frequency and magnitude of flow events that exceed the bank-full capacity of a channel, and therefore must spill over into the floodplain. This is accomplished by providing detention storage to ensure that, at each design point, the post-development 10-year 24-hour peak discharge rate does not exceed the corresponding pre-development rate.

3. The Extreme Flood Control (Qf) requirement is designed to prevent the increased risk of flood damage from large storm events, to maintain the boundaries of the pre-development 100-year floodplain, and to protect the physical integrity of stormwater management practices. This is accomplished by providing detention storage to ensure that, at each design point, the post-development 100-year 24-hour peak discharge rate does not exceed the corresponding pre-development rate.

6.6.2 NYSDEC Requirements for Redevelopment

Chapter 9 of the Design Manual provides alternatives to the above quantity criteria, which may be applied to redevelopment projects. As indicated in Section 9.3.2, if redevelopment results in no increase in impervious area or changes to hydrology that increase the discharge rate from the site, then the 10-year and 100-year criteria for quantity control do not apply. In addition, if the hydraulic study shows that the post-construction 1-year 24-hr discharge rate and velocity are less than or equal to the pre-construction discharge rate, then providing 24-hr detention of the 1-year storm to meet channel protection criteria is not required.

The project proposes a 24% decrease in impervious area and will not result in changes to hydrology that increase the discharge rate from the site. Additionally, based upon the hydrologic analysis performed, the discharge rate from the site has been reduced from pre- to post-development conditions for the 1-year

storm event. Therefore, the stormwater quantity criteria have been met and stormwater quantity control practices have not been provided for this project. The following Section describes the methodology behind this hydrologic analysis.

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The project proposes an 24% decrease in impervious area and will not result in changes to hydrology that increase the discharge rate from the site. Additionally, based upon the hydrologic analysis performed, the discharge rate from the site has been reduced from pre- to post-development conditions for the 1-year storm event. Therefore, the stormwater quantity criteria has been met and stormwater quantity control practices have not been provided for this project. The following Section describes the methodology behind this hydrologic analysis.

6.6.3 Methodology

In order to demonstrate that the NYSDEC detention requirements are being met, the Design Manual requires that a hydrologic and hydraulic analysis of the pre- and post-development conditions be performed using the Natural Resources Conservation Service Technical Release 20 (TR-20) and Technical Release 55 (TR-55) methodologies. HydroCAD, developed by HydroCAD Software Solutions LLC of Tamworth, New Hampshire, is a Computer-Aided-Design (CAD) program for analyzing the hydrologic and hydraulic characteristics of a given watershed and associated stormwater management facilities. HydroCAD uses the TR-20 algorithms and TR-55 methods to create and route runoff hydrographs.

HydroCAD has the capability of computing hydrographs (which represent discharge rates characteristic of specified watershed conditions, precipitation, and geologic factors) combining hydrographs and routing flows though pipes, streams and ponds. HydroCAD can also calculate the center of mass detention time for various hydraulic features. Documentation for HydroCAD can be found on their website: http://www.hydrocad.net/.

For this analysis, the watershed and drainage system was broken down into a network consisting of three types of components as described below:

1. Subcatchment: A relatively homogeneous area of land, which produces a volume and rate of runoff unique to that area.
2. Reach: Uniform streams, channels, or pipes that convey stormwater from one point to another.
3. Pond: Natural or man-made impoundment, which temporarily stores stormwater runoff and empties in a manner determined by its geometry and the hydraulic structure located at its outlets.

Subcatchments, reaches, and ponds are represented by hexagons, squares, and triangles, respectively, on the watershed routing diagrams provided with the computations included in Appendix I and Appendix J.

The analysis of hydrologic and hydraulic conditions and proposed stormwater management facilities, servicing the study area, was performed by dividing the tributary watershed into relatively homogeneous subcatchments. The separation of the watershed into subcatchments was dictated by watershed conditions, methods of collection, conveyance, and points of discharge. Watershed characteristics for each subcatchment were then assessed from United States Geological Service (USGS) 7.5-minute topographic maps, aerial photographs, a topographical survey, soil surveys, site investigations, and land use maps.

Proposed stormwater management practices were designed and evaluated in accordance with the Design Manual and local regulatory requirements. The hydrologic and hydraulic analysis considered the SCS, Type II 24-hour storm events identified in the following Table.

Table 4: Design Events

Facility	24-hour Storm Event
Storm Sewer	10- year
Stormwater Management Practice(s)	1-year
	10-year
	100-year
Flood Conditions	100-year

6.6.4 Description of Design Points

The study area consists of an overall watershed that encompasses approximately 4.86 acres and contains the 4.52 acre project site. The overall watershed was broken down into smaller watersheds, or subcatchments, to allow for analysis of runoff conditions at several locations throughout the study area. Each of these locations was defined as a Design Point (DP) in order to compare the effects resulting from stormwater management facilities proposed as part of the project. Descriptions of each of the selected design points are provided below.

- Design Point 1: Off-site discharge the stormwater network in the NYSDOT ROW along Route 9w, located at the southwest corner of site.

6.6.5 Pre-development Watershed Conditions

The pre-development project site is covered predominantly by buildings, pavement, gravel, grass, and woods. Analysis of pre-development conditions considered existing drainage patterns, soil types, ground cover, and topography. The Pre-Development Watershed Delineation Map has been provided in Appendix G, as Figure 4.

The results of the computer modeling used to analyze the overall watershed under pre-development conditions are presented in Appendix I. A summary of the pre-development watershed runoff rates at each design point is presented in Table 5.

6.6.6 Post-development Watershed Conditions

The post-development project site is covered predominantly by buildings, pavement, grass, and woods. The analysis of post-development conditions considered existing drainage patterns, soil types, ground cover to remain, planned site development, site grading and, stormwater management facilities proposed as part of site improvements. The Post-Development Watershed Delineation Map has been provided in Appendix G, as Figure 5.

The results of the computer modeling used to analyze the overall watershed under post-development conditions are presented in Appendix J. A summary of the post-development watershed runoff rates at each design point is presented in Table 5.

Due to the decrease in impervious cover in the post-development condition, peak discharge rates from the project site are also decreased. Therefore, stormwater management practices designed to attenuate stormwater runoff are not required for this project.

6.6.7 Performance Summary

A comparison of the pre- and post-development watershed conditions was performed for the design point and storm events evaluated herein. For the design point and design storms, this comparison demonstrates that the peak rate of runoff will not be increased. Therefore, the project will not have a significant adverse impact on the adjacent or downstream properties or receiving water courses.

The results of the computer modeling used to analyze the pre- and post-development watersheds are presented in Appendix I and Appendix J, respectively. The following Table summarizes the results of this analysis.

Table 5: Summary of Pre- and Post-Development Peak Discharge Rates

Pre- vs. Post-Development Discharge Rate (cfs)						
Design Point (DP)	**1-year 24-hour storm event**		**10-year 24-hour storm event**		**100-year 24-hour storm event**	
	Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**
1	10.87	10.15	23.09	22.29	44.04	43.33

7.0 INSPECTIONS, MAINTENANCE, AND REPORTING

7.1 Inspection and Maintenance Requirements

7.1.1 Pre-Construction Inspection and Certification

Prior to the commencement of construction, the Qualified Inspector/Qualified Professional shall conduct an assessment of the site and certify that the appropriate erosion and sediment control measures have been adequately installed and implemented. The Contractor shall contact the Qualified Inspector/Qualified Professional once the erosion and sediment control measures have been installed.

7.1.2 Construction Phase Inspections and Maintenance

A Qualified Inspector/Qualified Professional, as defined in Appendix A of the General Permit GP-0-20-001, shall conduct regular site inspections between the time this SWPPP is implemented and final site stabilization. Site inspections shall occur at an interval of at least once every seven (7) calendar days.

The purpose of site inspections is to assess performance of pollutant controls. Based on these inspections, the Qualified Inspector/Qualified Professional will decide whether it is necessary to modify this SWPPP, add or relocate sediment barriers, or whatever else may be needed in order to prevent pollutants from leaving the site via stormwater runoff. The general contractor has the duty to cause pollutant control measures to be repaired, modified, maintained, supplemented, or whatever else is necessary in order to achieve effective pollutant control.

Examples of particular items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. During each inspection the inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances.

1. Locations where vehicles enter and exit the site must be inspected for evidence of off-site sediment tracking. A stabilized construction entrance will be constructed where vehicles enter and exit. This entrance will be maintained or supplemented as necessary to prevent sediment from leaving the site on vehicles.
2. Sediment barriers must be inspected and, if necessary, they must be enlarged or cleaned in order to provide additional capacity. All material from behind sediment barriers will be stockpiled on the up slope side. Additional sediment barriers must be constructed as needed.
3. Inspections will evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system. If necessary, the materials must be covered or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas.
4. Grassed areas will be inspected to confirm that a healthy stand of grass is maintained. The site has achieved final stabilization once all areas are covered with building foundation or pavement, or have a stand of grass with at least 80 percent density. The density of 80 percent or greater must be maintained to be considered as stabilized. Areas must be watered, fertilized, and reseeded as needed to achieve this goal.

5. All discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.

The inspection reports must be completed entirely and additional remarks should be included if needed to fully describe a situation. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the site was in compliance with the SWPPP at the time of inspection and specifically identify all incidents of non-compliance.

Within one (1) business day of the completion of an inspection, the *Qualified Inspector/Qualified Professional* shall notify the Owner/Operator and appropriate contractor or subcontractor of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one (1) business day of the notification and shall complete the corrective actions in a reasonable time frame.

In addition to the inspections performed by the *Qualified Inspector/Qualified Professional*, the Contractor shall perform routine inspections that include a visual check of all erosion and sediment control measures. All inspections and maintenance shall be performed in accordance with the inspection and maintenance schedule provided on the accompanying plans. Sediment removed from erosion and sediment control measures will be exported from the site, stockpiled for later use, or used immediately for general non-structural fill.

It is the responsibility of the general contractor to assure the adequacy of site pollutant discharge controls. Actual physical site conditions or contractor practices could make it necessary to install more structural controls than are shown on the accompanying plans. (For example, localized concentrations of runoff could make it necessary to install additional sediment barriers, sediment traps, etc.) Assessing the need for additional controls and implementing them or adjusting existing controls will be a continuing aspect of this SWPPP until the site achieves final stabilization.

7.1.3 Temporary Suspension of Construction Activities

For construction sites where soil disturbance activities have been temporarily suspended (e.g. Winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the frequency of Qualified Inspector/Qualified Professional inspections can be reduced to once every 30 calendar days. Prior to reducing the frequency of inspections, the Owner/Operator shall notify the NYSDEC Region 3 stormwater contact person and the Town of Newburgh in writing.

7.1.4 Partial Project Completion

For construction sites where soil disturbance activities have been shut down with partial project completion, all areas disturbed as of the project shutdown date have achieved final stabilization, and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational, the inspections by the Qualified Inspector/Qualified Professional can stop. Prior to the shutdown, the Owner/Operator shall notify the NYSDEC Region 3 stormwater contact person and the Town of Newburgh in writing.

If soil disturbance activities have not resumed within two years from the date of shutdown, a Notice of Termination (NOT) shall be properly completed and submitted to the NYSDEC.

7.1.5 Post-Construction Inspections and Maintenance

Inspections and maintenance of final stabilization measures and post-construction stormwater management practices shall be performed in accordance with Appendix F, once all disturbed areas are stabilized and all stormwater management systems are in place and operable.

7.2 Reporting Requirements

7.2.1 Inspection Reports

Pursuant to Part IV.C of GP-0-20-001, inspection reports shall be prepared for the duration of construction, as outlined herein, and shall be signed by the *Qualified Inspector* or *Qualified Professional*. A sample inspection form is provided in Appendix D.

At a minimum, each inspection report shall record the following information:

1. Date and time of inspection.
2. Name and title of person(s) performing inspection.
3. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection.
4. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow.
5. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody.
6. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance.
7. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced.
8. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection.
9. Indication of the current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards.
10. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s).

11. Identification and status of all corrective actions that were required by previous inspection.
12. Color photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *Qualified Inspector/Qualified Professional* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *Qualified Inspector/Qualified Professional* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *Qualified Inspector/Qualified Professional* shall attach the paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

7.2.2 Site Log Book

Pursuant to Part II.D.2 of GP-0-20-001, the Owner/Operator shall retain a copy of the General Permit, NOI, NOI Acknowledgment Letter, MS4 SWPPP Acceptance Form (if applicable), inspection reports, contractor and subcontractor certification forms, and all documentation necessary to demonstrate eligibility under the permit, at the construction site from commencement of construction activity until the date that all areas of disturbance have achieved final stabilization and the Notice of Termination has been submitted to the NYSDEC.

The Site Log Book shall be maintained on-site in a secure location (i.e. job trailer, on-site construction office, or mailbox with lock) and must be accessible during normal business hours to an individual performing a compliance inspection.

7.2.3 Post Construction Records and Archiving

Following construction, the Owner/Operator shall retain copies of the SWPPP, the complete construction Site Log Book, and records of all data used to complete the NOI to be covered by this permit, for a period of at least five years from the date that the site is finally stabilized. This period may be extended by the NYSDEC, at its sole discretion, at any time upon written notification.

Records shall be maintained of all post construction inspections and maintenance work performed in accordance with the requirements outlined in Appendix F.

Appendix A:
NYSDEC SPDES General Permit GP-0-20-001

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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020 Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

Table of Contents

Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* ("SWPPP") the reason(s) for the

deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

      (i) No Affect
      (ii) No Adverse Affect
      (iii) Executed Memorandum of Agreement, or

   d. Documentation that:

      (i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

   c. the final SWPPP has been prepared, and

   d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

   a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project

b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

   d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

   c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

   b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

   c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

   d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

   a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

   (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

   (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

   b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

   c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

      (i) the chief executive officer of the agency, or

      (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner's or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres: • Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E • Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E • Construction of a barn or other *agricultural building*, silo, stock yard or pen.
The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land: All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.
The following construction activities that involve soil disturbances of one (1) or more acres of land: • Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains • Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects • Pond construction • Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover • Cross-country ski trails and walking/hiking trails • Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development; • Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path. • Slope stabilization projects • Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

Table 2
Construction Activities that Require the Preparation of a SWPPP That Includes Post-construction Stormwater Management Practices

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

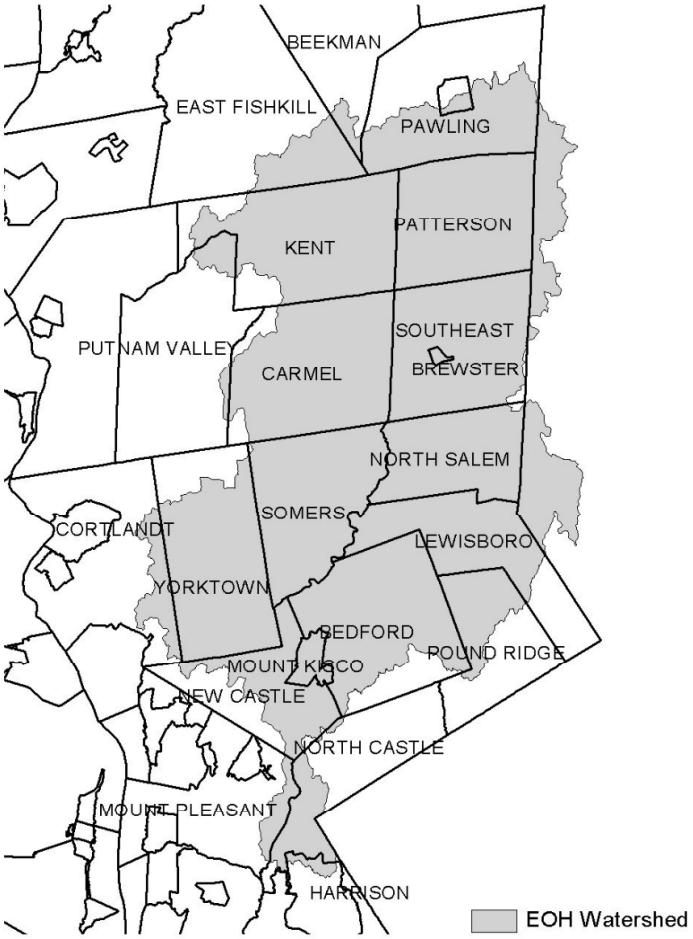


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

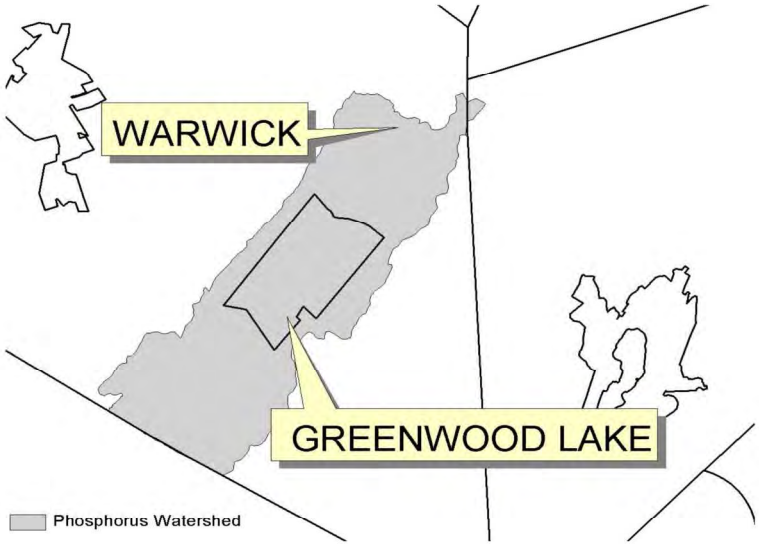


Figure 4 - Oscawana Lake Watershed

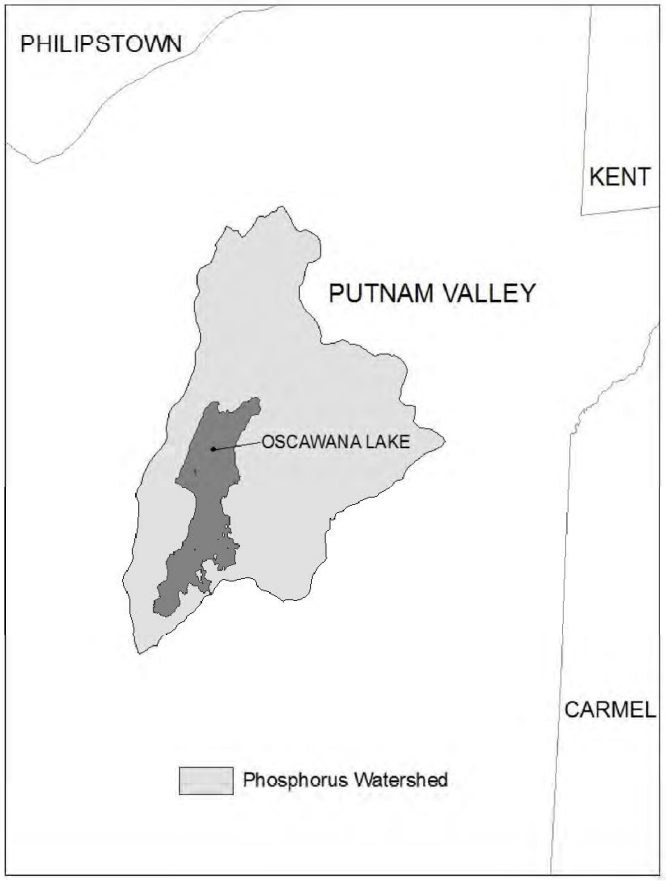
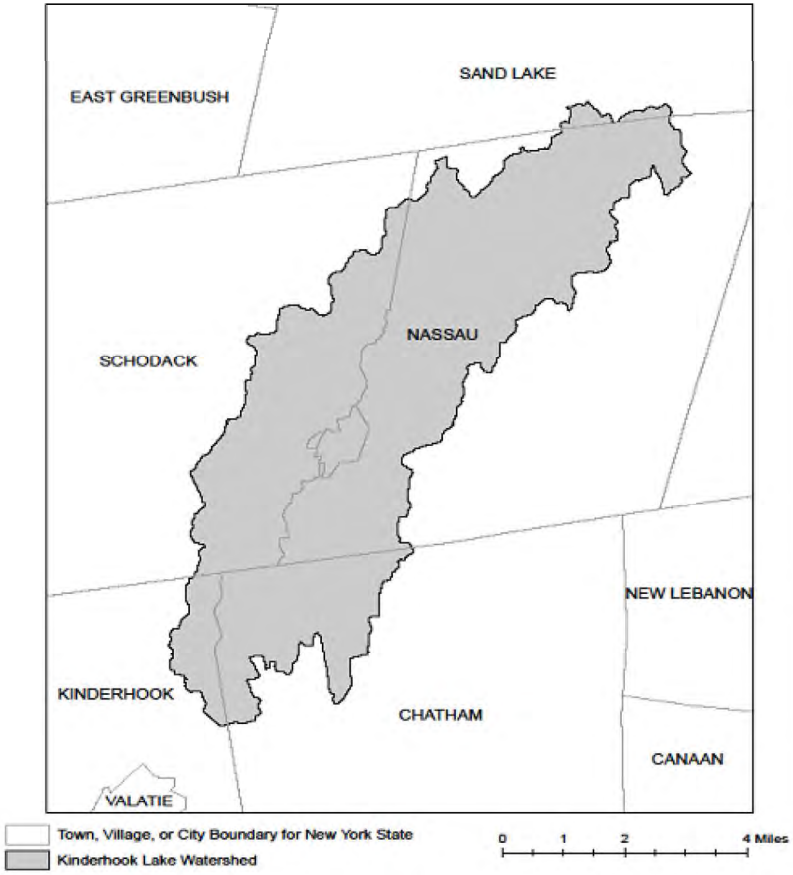


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

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Appendix B:
NYSDEC Forms

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0644089821

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Gas Land Petroleum, Inc.

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Nesheiwat

Owner/Operator Contact Person First Name
Zeidan

Owner/Operator Mailing Address
3 South Ohioville Road

City
New Paltz

State
NY

Zip
12561-

Phone (Owner/Operator)
845-331-7545

Fax (Owner/Operator)
___-___-____

Email (Owner/Operator)
Gasland.zeidan@gmail.com

FED TAX ID
__-_____ (not required for individuals)

Project Site Information

Project/Site Name
Gas Land Petroleum - Route 9W

Street Address (NOT P.O. BOX)
5200 Route 9W

Side of Street
○ **North** ○ **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Town of Newburgh

State: NY
Zip: 12550-
County: Orange
DEC Region: 3

Name of Nearest Cross Street
Court Road

Distance to Nearest Cross Street (Feet)
585

Project In Relation to Cross Street
○ **North** ○ **South** ○ **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel
43-5-1

Tax Map Numbers
43

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting): 582404

Y Coordinates (Northing): 4599384

2. What is the nature of this construction project?

○ **New Construction**

○ **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION — Number of Lots
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
2.7	2.7	1.9	1.7

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ○ **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
0 %	0 %	0 %	100 %

7. Is this a phased project? ○ **Yes** ○ **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date 06/01/2022 - **End Date** 06/01/2023

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

Unnamed tributary stream to Hudson River

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ◉ Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001? ○ **Yes** ○ **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001? ○ **Yes** ○ **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ○ **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ○ **No**
If Yes, what is the acreage to be disturbed?

.

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ○ **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ◉ **Yes** ○ **No** ○ **Unknown**

16. What is the name of the municipality/entity that owns the separate storm sewer system?

Town of Newburgh

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ **Yes** ○ **No** ○ **Unknown**

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ **Yes** ○ **No**

19. Is this property owned by a state authority, state agency, federal government or local government? ○ **Yes** ○ **No**

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ **Yes** ○ **No**

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ◉ **Yes** ○ **No**

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ◉ **Yes** ○ **No**
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ◉ **Yes** ○ **No**

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer: The Chazen Companies

Contact Name (Last, Space, First): Lapine, Christopher

Mailing Address: 21 Fox Street

City: Poughkeepsie

State: NY Zip: 12601-

Phone: 845-486-1478 Fax:

Email: clapine@chazencompanies.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name Christopher **MI**

Last Name Lapine

Signature

Date / /

25. Has a construction sequence schedule for the planned management practices been prepared? ○ Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ○ Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ● Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ○ Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ○ Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ● Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.152 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)	___.___	and/or	___.___
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)	___.___	and/or	___.___
○ Tree Planting/Tree Pit (RR-3)	___.___	and/or	___.___
○ Disconnection of Rooftop Runoff (RR-4)	___.___	and/or	___.___
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			___.___
○ Rain Garden (RR-6)			___.___
○ Stormwater Planter (RR-7)			___.___
○ Rain Barrel/Cistern (RR-8)			___.___
○ Porous Pavement (RR-9)			___.___
○ Green Roof (RR-10)			___.___
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			___.___
○ Infiltration Basin (I-2)			___.___
○ Dry Well (I-3)			___.___
○ Underground Infiltration System (I-4)			___.___
○ Bioretention (F-5)			___.___
○ Dry Swale (O-1)			___.___
Standard SMPs			
○ Micropool Extended Detention (P-1)			___.___
○ Wet Pond (P-2)			___.___
○ Wet Extended Detention (P-3)			___.___
○ Multiple Pond System (P-4)			___.___
○ Pocket Pond (P-5)			___.___
○ Surface Sand Filter (F-1)			___.___
○ Underground Sand Filter (F-2)			___.___
○ Perimeter Sand Filter (F-3)			___.___
○ Organic Filter (F-4)			___.___
○ Shallow Wetland (W-1)			___.___
○ Extended Detention Wetland (W-2)			___.___
○ Pond/Wetland System (W-3)			___.___
○ Pocket Wetland (W-4)			___.___
○ Wet Swale (O-2)			___.___

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
● Hydrodynamic	1.37
○ Wet Vault	
○ Media Filter	
○ Other _____	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.0 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ○ **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.0 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

● **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

0.162 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

0.162

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ● **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

. **acre-feet**

CPv Provided

. **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

23.09 **CFS**

Post-development

21.93 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

44.04 **CFS**

Post-development

42.69 **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● **Yes** ○ **No**

If Yes, Identify the entity responsible for the long term Operation and Maintenance

Gas Land

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ○ **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ● **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name: Zeidan

MI:

Print Last Name: Nesheiwat

Owner/Operator Signature:

Date: / /

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name: Gas Land Petroleum, Inc.

2. Street Address: 3 S Ohioville Road

3. City/State/Zip: New Paltz, New York 12561

4. Contact Person: Zeidan Nesheiwat | 4a.Telephone: 8453317545

4b. Contact Person E-Mail: Gasland.zeidan@gmail.com

II. Project Site Information

5. Project/Site Name: Gas Land Route 9W

6. Street Address: 5200 Route 9W

7. City/Zip: Newburgh, New York 12550

8. County: Orange

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:	
Title/Position:	
Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

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Appendix C:
Contractor's Certification Form
Subcontractor's Certification Form

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Stormwater Pollution Prevention Plan
Contractor Certification Statement
(Responsible for overall SWPPP Compliance)

Gas Land Rt 9W
5200 Route 9W, Town of Newburgh, Orange County, New York

This is to certify that the following contracting firm will be responsible for installing, constructing, repairing, inspecting and/or maintaining the erosion and sediment control practices and post-construction stormwater management control practices required by the SWPPP.

Contracting Firm Information

Name: _____

Address: _____

Telephone & Fax: _____

Trained Contractor(s) [1] Responsible for SWPPP Implementation (Provide name, title, and date of last training)

_____

_____

Prior to commencement of construction activity, the following certification shall be issued:

I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations.

Printed Name: _____

Title/Position: _____

Signature: _____ Date: _____

Upon completion of construction activities, the following certification shall be issued, prior to issuance of the NOT:

I hereby certify that that all permanent stormwater management practices required by the SWPPP have been installed in accordance with the contract documents. I further certify that all temporary erosion and sediment control measures have been removed from the site, and that the on-site soils disturbed by construction activity have been restored in accordance with the SWPPP and the NYSDEC Division of Water's publication "Deep-Ripping and Decompaction".

Printed Name: _____

Title/Position: _____

Signature: _____ Date: _____

[1] "Trained Contractor" means an employee from a contracting (construction) company that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the "trained contractor" shall receive four (4) hours of training every three (3) years. It can also mean an employee from the contracting (construction) company that meets the "qualified inspector" qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity). The "Trained Contractor" will be responsible for the day to day implementation of the SWPPP.

[2] Signatory Requirements:

a. For a corporation, this form shall be signed by (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principle business function, or any other person who performs similar policy or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. For a partnership or sole proprietorship, this form shall be signed by a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public agency, this form shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. Regional Administrators of EPA).

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Stormwater Pollution Prevention Plan
Subcontractor Certification Statement
(whose work involves soil disturbance)

Gas Land Rt 9W
5200 Route 9W, Town of Newburgh, Orange County, New York

Each Subcontractor whose work will involve soil disturbance of any kind is required to complete and sign this Certification Statement before commencing any construction activity at the site. This completed Certification Statement(s) shall be maintained at the construction site in the Site Log Book.

Subcontracting Firm Information

Name: _____

Address: _____

_____

Telephone & Fax: _____

Trained Contractor(s)[2] Responsible for SWPPP Implementation (Provide name, title, and date of last training)

_____

_____

Prior to commencement of construction activities, the following certification shall be issued:

I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations.

Printed Name: _____

Title/Position: _____

Signature: _____ Date: _____

[2] "Trained Contractor" means an employee from a contracting (construction) company that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the "trained contractor" shall receive four (4) hours of training every three (3) years. It can also mean an employee from the contracting (construction) company that meets the "qualified inspector" qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity). The "Trained Contractor" will be responsible for the day to day implementation of the SWPPP.

[2] Signatory Requirements:

a. For a corporation, this form shall be signed by (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principle business function, or any other person who performs similar policy or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. For a partnership or sole proprietorship, this form shall be signed by a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public agency, this form shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. Regional Administrators of EPA).

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Appendix D:
SWPPP Inspection Report
(Sample Form)

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Stormwater Pollution Prevention Plan
Inspection Report

Gas Land Rt 9W
5200 Route 9W
Town of Newburgh, Orange County, New York

A Qualified Inspector[1] shall prepare an inspection report subsequent to each and every inspection, as required in Part IV.C of the SPDES General Permit GP-0-20-001. All sections of this report are to be completed.

1. Inspection Information

Inspection number: _____

Date and Time of Inspection: _____

Weather Conditions: _____

Soil Conditions (e.g. dry, wet, saturated): _____

2. Inspector Information

Qualified Inspector[1]

Printed Name: _____ Date: _____

Signature: _____

Qualified Professional[1]

Printed Name _____ Date: _____

Signature: _____

3. On the included site plan, provide a sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection. Provide additional descriptions below if necessary.

_____

_____

_____

_____

[1] A Qualified Inspector means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s). It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years. It can also mean a person that meets the Qualified Professional qualifications in addition to the Qualified Inspector qualifications. Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

4. **In the following table, provide a description of the condition of the runoff at all points of discharge from the construction site, including conveyance systems (pipes, culverts, ditches, etc.) and overland flow. Provide a description of the condition of all natural surface waterbodies located within the property boundaries of the construction site which receive runoff from disturbed areas. Identify any discharges of sediment from the construction site. Use additional sheets if necessary.**

Description of Discharge Point/Adjacent Natural Surface Waterbodies	Condition of Runoff	Sediment Discharge Noted
		Yes / No
		Yes / No
		Yes / No
		Yes / No

5. **For all discharge points where sediment discharge has been noted in the above table, provide detailed corrective actions that are required. Use additional sheets if necessary.**

6. In the following table, provide checkmarks in the appropriate columns to indicate the condition of all erosion and sediment control practices at the site.

Erosion & Sediment Control Practice	Not Applicable	Functioning as Designed	Needs Repair or Maintenance	Not Installed Properly	Date Deficiency First Reported (If Applicable)	Deficiency Corrected? Y/N (If Applicable)
Temporary Erosion & Sediment Control Practices						
Stabilized construction entrance						
Silt fence						
Inlet protection measures						
Soil stockpiles						
Dust control measures						
Pavement sweeping						
Temporary stabilization						
Dewatering operations						
Slope protection measures						
Temporary parking areas						
Concrete washout						
Temporary swales and berms						
Stone check dams						
Sediment traps						
Fiber Roll						
Other:						
Permanent Erosion & Sediment Control Practices						
Rock outlet protection						
Permanent turf reinforcement						
Permanent stabilization						
Other:						

7. For all erosion and sediment control practices identified in the above table as "needs repair or maintenance" or "not installed properly", provide detailed corrective actions that are required. Use additional sheets if necessary.

8. In the following table, indicate the current phase of construction of all post-construction stormwater management practices and identify all construction that is not in conformance with the SWPPP and technical standards.

SWM Practice	Current Phase of Construction	Items not in conformance with the SWPPP

9. For all post-construction stormwater management practices which are identified in the above table as including "items not in conformance with the SWPPP", provide detailed corrective action(s) that are required to correct the deficiencies. Use additional sheets if necessary.

Photo Log

Date – Item in need of repair or maintenance:	*Date – Corrected Action:*
Date – Item in need of repair or maintenance:	*Date – Corrected Action:*
Date – Item in need of repair or maintenance:	*Date – Corrected Action:*

Photo Log

Date – Item in need of repair or maintenance:	*Date – Corrected Action:*
Date – Item in need of repair or maintenance:	*Date – Corrected Action:*
Date – Item in need of repair or maintenance:	*Date – Corrected Action:*

Appendix E:
NYSDEC “Deep-Ripping and Decompaction,” April 2008

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New York State
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water

Deep-Ripping and Decompaction

April 2008

Document Prepared by:

John E. Lacey,
Land Resource Consultant and Environmental Compliance Monitor
(Formerly with the Division of Agricultural Protection and Development Services,
NYS Dept. of Agriculture & Markets)

New York State
Department of Environmental Conservation

Alternative Stormwater Management
Deep-Ripping and Decompaction

Description

The two-phase practice of 1) “Deep Ripping;” and 2) “Decompaction” (deep subsoiling), of the soil material as a step in the cleanup and restoration/landscaping of a construction site, helps mitigate the physically induced impacts of soil compression; i.e.: soil compaction or the substantial increase in the bulk density of the soil material.

Deep Ripping and Decompaction are key factors which help in restoring soil pore space and permeability for water infiltration. Conversely, the physical actions of cut-and-fill work, land grading, the ongoing movement of construction equipment and the transport of building materials throughout a site alter the architecture and structure of the soil, resulting in: the mixing of layers (horizons) of soil materials, compression of those materials and diminished soil porosity which, if left unchecked, severely impairs the soil’s water holding capacity and vertical drainage (rainfall infiltration), from the surface downward.

In a humid climate region, compaction damage on a site is virtually guaranteed over the duration of a project. Soil in very moist to wet condition when compacted, will have severely reduced permeability. Figure 1 displays the early stage of the deep-ripping phase (Note that all topsoil was stripped prior to construction access, and it remains stockpiled until the next phase – decompaction – is complete). A heavy-duty tractor is pulling a three-shank ripper on the first of several series of incrementally deepening passes through the construction access corridor's densely compressed subsoil material. Figure 2 illustrates the approximate volumetric composition of a loam surface soil when conditions are good for plant growth, with adequate natural pore space for fluctuating moisture conditions.

Fig. 1. A typical deep ripping phase of this practice, during the first in a series of progressively deeper “rips” through severely compressed subsoil.

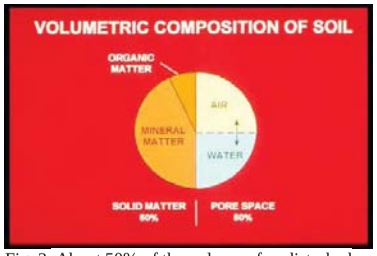

Fig. 2. About 50% of the volume of undisturbed loam surface soil is pore space, when soil is in good condition for plant growth. Brady, 2002.

Recommended Application of Practice

The objective of Deep Ripping and Decompaction is to effectively fracture (vertically and laterallly) through the thickness of the physically compressed subsoil material (see Figure 3), restoring soil porosity and permeability and aiding infiltration to help reduce runoff. Together with topsoil stripping, the “two-phase” practice of Deep Ripping and Decompaction first became established as a “best management practice” through ongoing success on commercial farmlands affected by heavy utility construction right-of-way projects (transmission pipelines and large power lines).

Fig. 3. Construction site with significant compaction of the deep basal till subsoil extends 24 inches below this exposed cut-and-fill work surface.

Soil permeability, soil drainage and cropland productivity were restored. For broader construction application, the two-phase practice of Deep Ripping and Decompaction is best adapted to areas impacted with significant soil compaction, on contiguous open portions of large construction sites and inside long, open construction corridors used as temporary access over the duration of construction. Each mitigation area should have minimal above-and-below-ground obstructions for the easy avoidance and maneuvering of a large tractor and ripping/decompacting implements. Conversely, the complete two-phase practice is not recommended in congested or obstructed areas due to the limitations on tractor and implement movement.

Benefits

Aggressive “deep ripping” through the compressed thickness of exposed subsoil before the replacement/respreading of the topsoil layer, followed by “decompaction,” i.e.: “sub-soiling,” through the restored topsoil layer down into the subsoil, offers the following benefits:

- Increases the project (larger size) area’s direct surface infiltration of rainfall by providing the open site’s mitigated soil condition and lowers the demand on concentrated runoff control structures
- Enhances direct groundwater recharge through greater dispersion across and through a broader surface than afforded by some runoff-control structural measures
- Decreases runoff volume generated and provides hydrologic source control
- May be planned for application in feasible open locations either alone or in

conjunction with plans for structural practices (e.g., subsurface drain line or infiltration basin) serving the same or contiguous areas

- Promotes successful long-term revegetation by restoring soil permeability, drainage and water holding capacity for healthy (rather than restricted) root-system development of trees, shrubs and deep rooted ground cover, minimizing plant drowning during wet periods and burnout during dry periods.

Feasibility/Limitations

The effectiveness of Deep Ripping and Decompaction is governed mostly by site factors such as: the original (undisturbed) soil's hydrologic characteristics; the general slope; local weather/timing (soil moisture) for implementation; the space-related freedom of equipment/implement maneuverability (noted above in **Recommended Application of Practice**), and by the proper selection and operation of tractor and implements (explained below in **Design Guidance**). The more notable site-related factors include:

Soil
In the undisturbed condition, each identified soil type comprising a site is grouped into one of four categories of soil hydrology, Hydrologic Soil Group A, B, C or D, determined primarily by a range of characteristics including soil texture, drainage capability when thoroughly wet, and depth to water table. The natural rates of infiltration and transmission of soil-water through the undisturbed soil layers for Group A is "high" with a low runoff potential while soils in Group B are moderate in infiltration and the transmission of soil-water with a moderate runoff potential, depending somewhat on slope. Soils in Group C have slow rates of infiltration and transmission of soil-water and a moderately high runoff potential influenced by soil texture and slope; while soils in Group D have exceptionally slow rates of infiltration and transmission of soil-water, and high runoff potential.

In Figure 4, the profile displays the undisturbed horizons of a soil in Hydrologic Soil Group C and the naturally slow rate of infiltration through the subsoil. The slow rate of infiltration begins immediately below the topsoil horizon (30 cm), due to the limited amount of macro pores, e.g.: natural subsoil fractures, worm holes and root channels. Infiltration after the construction-induced mixing and compression of such subsoil material is virtually absent; but can be restored back to this natural level with the two-phase practice of deep ripping and decompaction, followed by the permanent establishment of an appropriate, deep taproot

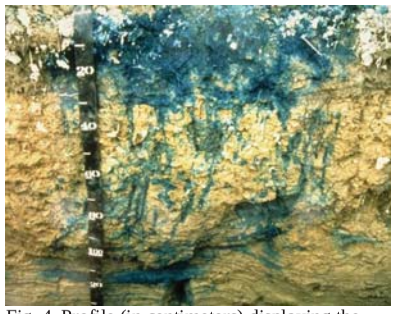

Fig. 4. Profile (in centimeters) displaying the infiltration test result of the natural undisturbed horizons of a soil in Hydrologic Soil Group C.

lawn/ground cover to help maintain the restored subsoil structure. Infiltration after construction-induced mixing and compression of such subsoil material can be notably rehabilitated with the Deep Ripping and Decompaction practice, which prepares the site for the appropriate long-term lawn/ground cover mix including deep taproot plants such as clover, fescue or trefoil, etc. needed for all rehabilitated soils.

Generally, soils in Hydrologic Soil Groups A and B, which respectively may include deep, well-drained, sandy-gravelly materials or deep, moderately well-drained basal till materials, are among the easier ones to restore permeability and infiltration, by deep ripping and decompaction. Among the many different soils in Hydrologic Soil Group C are those unique glacial tills having a natural fragipan zone, beginning about 12 to 18 inches (30 – 45cm), below surface. Although soils in Hydrologic Soil Group C do require a somewhat more carefully applied level of the Deep Ripping and Decompaction practice, it can greatly benefit such affected areas by reducing the runoff and fostering infiltration to a level equal to that of pre-disturbance.

Soils in Hydrologic Soil Group D typically have a permanent high water table close to the surface, influenced by a clay or other highly impervious layer of material. In many locations with clay subsoil material, the bulk density is so naturally high that heavy trafficking has little or no added impact on infiltration; and structural runoff control practices rather than Deep Ripping and Decompaction should be considered.

The information about Hydrologic Soil Groups is merely a general guideline. Site-specific data such as limited depths of cut-and-fill grading with minimal removal or translocation of the inherent subsoil materials (as analyzed in the county soil survey) or, conversely, the excavation and translocation of deeper, unconsolidated substratum or consolidated bedrock materials (unlike the analyzed subsoil horizons' materials referred to in the county soil survey) should always be taken into account.

Sites made up with significant quantities of large rocks, or having a very shallow depth to bedrock, are not conducive to deep ripping and decompation (subsoiling); and other measures may be more practical.

Slope
The two-phase application of 1) deep ripping and 2) decompaction (deep subsoiling), is most practical on flat, gentle and moderate slopes. In some situations, such as but not limited to temporary construction access corridors, inclusion areas that are moderately steep along a project's otherwise gentle or moderate slope may also be deep ripped and decompacted. For limited instances of moderate steepness on other projects, however, the post-construction land use and the relative alignment of the potential ripping and decompaction work in relation to the lay of the slope should be reviewed for safety and practicality. In broad construction areas predominated by moderately steep or steep slopes, the practice is generally not used.

Local Weather/Timing/Soil Moisture
Effective fracturing of compressed subsoil material from the exposed work surface, laterally and vertically down through the affected zone is achieved only when the soil material is moderately dry to moderately moist. Neither one of the two-phases, deep ripping nor decompaction (deep

subsoiling), can be effectively conducted when the soil material (subsoil or replaced topsoil) is in either a “plastic” or “liquid” state of soil consistency. Pulling the respective implements legs through the soil when it is overly moist only results in the “slicing and smearing” of the material or added “squeezing and compression” instead of the necessary fracturing. Ample drying time is needed for a “rippable” soil condition not merely in the material close to the surface, but throughout the material located down to the bottom of the physically compressed zone of the subsoil.

The “poor man’s Atterberg field test” for soil plasticity is a simple “hand-roll” method used for quick, on-site determination of whether or not the moisture level of the affected soil material is low enough for: effective deep ripping of subsoil; respreading of topsoil in a friable state; and final decompaction (deep subsoiling). Using a sample of soil material obtained from the planned bottom depth of ripping, e.g.: 20 - 24 inches below exposed subsoil surface, the sample is hand rolled between the palms down to a 1/8-inch diameter thread. (Use the same test for stored topsoil material before respreading on the site.) If the respective soil sample crumbles apart in segments no greater than 3/8 of an inch long, by the time it is rolled down to 1/8 inch diameter, it is low enough in moisture for deep ripping (or topsoil replacement), and decompaction. Conversely, as shown in Figure 5, if the rolled sample stretches out in increments greater than 3/8 of an inch long before crumbling, it is in a “plastic” state of soil consistency and is too wet for subsoil ripping (as well as topsoil replacement) and final decompaction.

Fig. 5. Augered from a depth of 19 inches below the surface of the replaced topsoil, this subsoil sample was hand rolled to a 1/8-inch diameter. The test shows the soil at this site stretches out too far without crumbling; it indicates the material is in a plastic state of consistence, too wet for final decompaction (deep subsoiling) at this time.

Design Guidance

Beyond the above-noted site factors, a vital requirement for the effective Deep Ripping and Decompaction (deep subsoiling), is implementing the practice in its distinct, two-phase process:

1) Deep rip the affected thickness of exposed subsoil material (see Figure 10 and 11), aggressively fracturing it before the protected topsoil is reapplied on the site (see Figure 12); and

2) Decompact (deep subsoil), simultaneously through the restored topsoil layer and the upper half of the affected subsoil (Figure 13). The second phase, “decompaction,” mitigates the partial recompaction which occurs during the heavy process of topsoil spreading/grading. Prior to deep ripping and decompacting the site, all construction activity, including construction equipment and material storage, site cleanup and trafficking (Figure 14), should be finished; and the site closed off to further disturbance. Likewise, once the practice is underway and the area’s soil permeability and

rainfall infiltration are being restored, a policy limiting all further traffic to permanent travel lanes is maintained.

The other critical elements, outlined below, are: using the proper implements (deep, heavy-duty rippers and subsoilers), and ample pulling-power equipment (tractors); and conducting the practice at the appropriate speed, depth and pattern(s) of movement.

Note that an appropriate plan for the separate practice of establishing a healthy perennial ground cover, with deep rooting to help maintain the restored soil structure, should be developed in advance. This may require the assistance of an agronomist or landscape horticulturist.

Implements

Avoid the use of all undersize implements. The small-to-medium, light-duty tool will, at best, only “scarify” the uppermost surface portion of the mass of compacted subsoil material. The term “chisel plow” is commonly but incorrectly applied to a broad range of implements. While a few may be adapted for the moderate subsoiling of non-impacted soils, the majority are less durable and used for only lighter land-fitting (see Figure 6).

Fig. 6. A light duty chisel implement, not adequate for either the deep ripping or decompaction (deep subsoiling) phase.

Fig. 7. One of several variations of an agricultural ripper. This unit has long, rugged shanks mounted on a steel V-frame for deep, aggressive fracturing through Phase 1.

Use a “heavy duty” agricultural-grade, deep ripper (see Figures 7,9,10 and 11) for the first phase: the lateral and vertical fracturing of the mass of exposed and compressed subsoil, down and through, to the bottom of impact, prior to the replacement of the topsoil layer. (Any oversize rocks which are uplifted to the subsoil surface during the deep ripping phase are picked and removed.) Like the heavy-duty class of implement for the first phase, the decompaction (deep subsoiling) of Phase 2 is conducted with the heavy-duty version of the deep subsoiler. More preferable is the angled-leg variety of deep subsoiler (shown in Figures 8 and 13). It minimizes the inversion of the subsoil and topsoil layers while laterally and vertically fracturing the upper half of the previously ripped subsoil layer and all of the topsoil layer by delivering a momentary, wave-like “lifting and shattering” action up through the soil layers as it is pulled.

Pulling-Power of Equipment
Use the following rule of thumb for tractor horsepower (hp) whenever deep ripping and decompacting a significantly impacted site: For both types of implement, have at least 40 hp of tractor pull available for each mounted shank/ leg.

Using the examples of a 3-shank and a 5-shank implement, the respective tractors should have 120 and 200 hp available for fracturing down to the final depth of 20-to-24 inches per phase. Final depth for the deep ripping in Phase 1 is achieved incrementally by a progressive series of passes (see Depth and Patterns of Movement, below); while for Phase 2, the full operating depth of the deep subsoiler is applied from the beginning.

The operating speed for pulling both types of implement should not exceed 2 to 3 mph. At this slow and managed rate of operating speed, maximum functional performance is sustained by the tractor and the implement performing the soil fracturing. Referring to Figure 8, the implement is the 6-leg version of the deep angled-leg subsoiler. Its two outside legs are "chained up" so that only four legs will be engaged (at the maximum depth), requiring no less than 160 hp, (rather than 240 hp) of pull. The 4-wheel drive, articulated-frame tractor in Figure 8 is 174 hp. It will be decompacting this unobstructed, former construction access area simultaneously through 11 inches of replaced topsoil and the upper 12 inches of the previously deep-ripped subsoil. In constricted areas of Phase 1) Deep Ripping, a medium-size tractor with adequate hp, such as the one in Figure 9 pulling a 3-shank deep ripper, may be more maneuverable.


Fig. 8. A deep, angled-leg subsoiler, ideal for Phase 2 decompaction of after the topsoil layer is graded on top of the ripped subsoil.


Fig. 9. This medium tractor is pulling a 3-shank deep ripper. The severely compacted construction access corridor is narrow, and the 120 hp tractor is more maneuverable for Phase 1 deep ripping (subsoil fracturing), here.

Some industrial-grade variations of ripping implements are attached to power graders and bulldozers. Although highly durable, they are generally not recommended. Typically, the shanks or "teeth" of these rippers are too short and stout; and they are mounted too far apart to achieve the well-distributed type of lateral and vertical fracturing of the soil materials necessary to restore soil permeability and infiltration. In addition, the power graders and bulldozers, as pullers, are far less maneuverable for turns and patterns than the tractor.

Depth and Patterns of Movement
As previously noted both Phase 1 Deep Ripping through significantly compressed, exposed subsoil and Phase 2 Decompaction (deep subsoiling) through the replaced topsoil and upper subsoil need to be performed at maximum capable depth of each implement. With an implement's guide wheels attached, some have a "normal" maximum operating depth of 18 inches, while others may go deeper. In many situations, however, the tractor/implement operator must first remove the guide wheels and other non essential elements from the implement. This adapts the ripper or the deep subsoiler for skillful pulling with its frame only a few inches above surface, while the shanks or legs, fracture the soil material 20-to-24 inches deep.

There may be construction sites where the depth of the exposed subsoil's compression is moderate, e.g.: 12 inches, rather than deep. This can be verified by using a ¾ inch cone penetrometer and a shovel to test the subsoil for its level of compaction, incrementally, every three inches of increasing depth. Once the full thickness of the subsoil's compacted zone is finally "pieced" and there is a significant drop in the psi measurements of the soil penetrometer, the depth/thickness of compaction is determined. This is repeated at several representative locations of the construction site. If the thickness of the site's subsoil compaction is verified as, for example, ten inches, then the Phase 1 Deep Ripping can be correspondingly reduced to the implement's minimum operable depth of 12 inches. However, the Phase 2 simultaneous Decompation (subsoiling) of an 11 inch thick layer of replaced topsoil and the upper subsoil should run at the subsoiling implements full operating depth.


Fig. 10. An early pass with a 3-shank deep ripper penetrating only 8 inches into this worksite's severely compressed subsoil.


Fig. 11. A repeat run of the 3-shank ripper along the same patterned pass area as Fig. 9; here, incrementally reaching 18 of the needed 22 inches of subsoil fracture.

Typically, three separate series (patterns) are used for both the Phase 1 Deep Ripping and the Phase 2 Decompaction on significantly compacted sites. For Phase 1, each series begins with a moderate depth of rip and, by repeat-pass, continues until full depth is reached. Phase 2 applies the full depth of Decompation (subsoiling), from the beginning.

Every separate series (pattern) consists of parallel, forward-and-return runs, with each progressive

pass of the implement's legs or shanks evenly staggered between those from the previous pass. This compensates for the shank or leg-spacing on the implement, e.g., with 24-to-30 inches between each shank or leg. The staggered return pass ensures lateral and vertical fracturing actuated every 12 to 15 inches across the densely compressed soil mass.

Large, Unobstructed Areas
For larger easy areas, use the standard patterns of movement:

- The first series (pattern) of passes is applied lengthwise, parallel with the longest spread of the site; gradually progressing across the site's width, with each successive pass.

- The second series runs obliquely, crossing the first series at an angle of about 45 degrees.

- The third series runs at right angle (or 90 degrees), to the first series to complete the fracturing and shattering on severely compacted sites, and avoid leaving large unbroken blocks of compressed soil material. (In certain instances, the third series may be optional, depending on how thoroughly the first two series loosen the material and eliminate large chunks/blocks of material as verified by tests with a ¾-inch cone penetrometer.)

Fig. 12. Moderately dry topsoil is being replaced on the affected site now that Phase 1 deep ripping of the compressed subsoil is complete.

Fig. 13. The same deep, angled-leg subsoiler shown in Fig. 7 is engaged at maximum depth for Phase 2, decompaction (deep soiling), of the replaced topsoil and the upper subsoil materials.

Corridors
In long corridors of limited width and less maneuverability than larger sites, e.g.: along compacted areas used as temporary construction access, a modified series of pattern passes are used.

- First, apply the same initial lengthwise, parallel series of passes described above.

- A second series of passes makes a broad "S" shaped pattern of rips, continually and gradually alternating the "S" curves between opposite edges inside the compacted corridor.

- The third and final series again uses the broad, alternating S pattern, but it is "flip-flopped" to continually cross the previous S pattern along the corridor's centerline. This final series of the S pattern curves back along the edge areas skipped by the second series.

Maintenance and Cost

Once the two-phase practice of Deep Ripping and Decompation is completed, two items are essential for maintaining a site's soil porosity and permeability for infiltration. They are: planting and maintaining the appropriate ground cover with deep roots to maintain the soil structure (see Figure 15); and keeping the site free of traffic or other weight loads.

Note that site-specific choice of an appropriate vegetative ground-cover seed mix, including the proper seeding ratio of one or more perennial species with a deep taproot system and the proper amount of lime and soil nutrients (fertilizer mix) adapted to the soil-needs, are basic to the final practice of landscaping, i.e: surface tillage, seeding/planting/fertilizing and culti-packing or mulching is applied. The "maintenance" of an effectively deep-ripped and decompacted area is generally limited to the successful perennial (long-term) landscape ground cover; as long as no weight-bearing force of soil compaction is applied.

Fig. 14. The severely compacted soil of a temporary construction yard used daily by heavy equipment for four months; shown before deep ripping, topsoil replacement, and decompaction.

Fig. 15. The same site as Fig. 14 after deep ripping of the exposed subsoil, topsoil replacement, decompaction through the topsoil and upper subsoil and final surface tillage and revegetation to maintain soil permeability and infiltration.

The Deep Ripping and Decompaction practice is, by necessity, more extensive than periodic subsoiling of farmland.The cost of deep ripping and decompacting (deep subsoiling), will vary according to the depth and severity of soil-material compression and the relative amount of tractor and implement time that is required. In some instances, depending on open maneuverability, two-to-three acres of compacted project area may be deep-ripped in one day. In other situations of more severe compaction and - or less maneuverability, as little as one acre may be fully ripped in a day. Generally, if the Phase 1) Deep Ripping is fully effective, the Phase 2) Decompaction should be completed in 2/3 to 3/4 of the time required for Phase 1.

Using the example of two acres of Phase 1) Deep Ripping in one day, at $1800 per day, the net cost is $900 per acre. If the Phase 2) Decompacting or deep subsoiling takes 3/4 the time as Phase 1, it costs $675 per acre for a combined total of $1575 per acre to complete the practice (these figures do not include the cost of the separate practice of topsoil stripping and replacement). Due to the many variables, it must be recognized that cost will be determined by the specific conditions or constraints of the site and the availability of proper equipment.

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- Examples of implements:

V-Rippers. Access by internet search of *John Deere Ag -New Equipment for 915* (larger-frame model) *V-Rippe*; and, *for 913* (smaller-frame model) *V-Ripper*. Deep, angled-leg subsoiler. Access by internet search of: B*igham Brothers Shear Bolt Paratill-Subsoiler.* http://salesmanual.deere.com/sales/salesmanual/en_NA/primary_tillage/2008/feature/rippers/915v_pattern_frame.html?sbu=ag&link=prodcat Last visited March 08.

- Soils data of USDA Natural Resources Conservation Service. *NRCS Web Soil Survey.* http://websoilsurvey.nrcs.usda.gov/app/ and *USDA-NRCS Official Soil Series Descriptions; View by Name.* http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi . *Last visited Jan. 08.*
- Soil penetrometer information. Access by internet searches of: *Diagnosing Soil Compaction using a Penetrometer (soil compaction tester), PSU Extension;* as well as *Dickey-john Soil Compaction Tester.* http://www.dickey-johnproducts.com/pdf/SoilCompactionTest.pdf and http://cropsoil.psu.edu/Extension/Facts/uc178pdf Last visited Sept. 07

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Appendix F:
Post-Construction Inspections and Maintenance

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POST CONSTRUCTION INSPECTIONS AND MAINTENANCE

1. SITE COVER

a. Inspections

Site cover and associated structures and embankments should be inspected periodically for the first few months following construction and then on a biannual basis. Site inspections should also be performed following all major storm events. Items to check for include (but are not limited to):

i. Differential settlement of embankments, cracking or erosion.

ii. Lack of vigor and density of grass turf.

iii. Accumulation of sediments or litter on lawn areas, paved areas, or within catch basin sumps.

iv. Accumulation of pollutants, including oils or grease, in catch basin sumps.

v. Damage or fatigue of storm sewer structures or associated components.

b. Mowing and Sweeping

Vegetated areas and landscaping should be maintained to promote vigorous and dense growth. Lawn areas should be mowed at least three times a year (more frequent mowing may be desired for aesthetic reasons). Resultant yard waste shall be collected and disposed of off-site.

Paved areas should be swept at least twice a year. Additional sweeping may be appropriate in the early spring for removal of deicing materials

c. Debris and Litter Removal

Accumulation of litter and debris should be removed during each mowing or sweep operation.

d. Structural Repair or Replacement

Components of the system which require repair or replacement should be addressed immediately following identification.

e. Catch Basins

The frequency for cleanout of catch basin sumps will depend on the efficiency of mowing, sweeping, and debris and litter removal. Sumps should be cleaned when accumulation of sediments are within six inches of the catch basin outlet pipe.

Disposal of material from catch basins sumps, drainage manholes, and trench drains shall be in accordance with local, state, and federal guidelines.

f. Rip-rap Dissipation structures

Rip-rap used to dissipate energy from pipe outfalls shall be cleaned or replaced when it becomes overburdened with silt or sediment.

g. Winter Maintenance

To prevent impacts to storm water management facilities, the following winter maintenance limitations, restrictions, or requirements are recommended:

i. Remove snow and ice from inlet structures, basin inlet and outlet structures and away from culvert end sections.

ii. Snow removed from paved areas should not be piled at inlets/outlets of the storm water management basin.

iii. Use of deicing materials should be limited to sand and "environmentally friendly" chemical products. Use of salt mixtures should be kept to a minimum.

iv. Sand used for deicing should be clean, course material free of fines, silt, and clay.

v. Materials used for deicing should be removed during the early spring by sweeping and/ or vacuuming.

2. HYDRODYNAMIC DEVICE

The hydrodynamic device is a confined space environment and only properly trained personnel possessing the necessary safety equipment should enter the unit to perform maintenance or inspection.

a. Inspection Schedule

The hydrodynamic device shall be inspected every four months.

b. Inspection Items

The unit's internal components should be inspected for any signs of damage or any loosening of the bolts used to fasten the various components to the manhole structure and to each other.

Refer to attached Operations and Maintenance Guidelines, for the CDS-5 (2020) Hydrodynamic Device, for the manufacturer's detailed inspection and maintenance requirements.

c. Debris, Trash and Litter Control

The screen shall be power washed for the inspection. The floatables shall be removed and the sump cleaned when it has reached 50% capacity. The unit may require cleaning in the event of a spill of a toxic or foreign substance. At a minimum, the hydrodynamic device shall be pumped out at least once a year if the sump does not reach its 50% capacity.

d. Sediment removal

Disposal of material from the hydrodynamic device shall be in accordance with local, state, and federal guidelines.

3. DRY SWALE

a. Inspection Schedule

Dry Swales should be inspected periodically for the first few months after construction and then on an annual basis. Dry Swales shall be inspected after major storm events to ensure inlets and outlets remain clear.

b. Inspection Items

Items to check for include (but are not limited to):

i. Evidence of clogging within pea gravel diaphragm (if applicable).

ii. Evidence of erosion and formation of rills or gullies along swale side slopes.

iii. Erosion of the sand/soil bed of the swale.

iv. Evidence of clogging at inlets or outlets.

v. Brush, shrub or tree growth within swale.

vi. Condition of the overflow spillway.

vii. Condition of the check dams.

viii. Lack of vigor and density of plants/turf on the swale side slopes.

ix. If original grass species has been successfully established. If not, then plant an alternative grass species.

x. If wetland species for wet swale have been successfully established. If not, then replant.

c. Mowing

The side slopes, inlets, and overflow spillways of the swales should be mowed to maintain a height of 4 to 6 inches and resultant yard wastes shall be collected and disposed of off-site.

d. Debris and Litter Control

Removal of debris and litter should be accomplished during mowing operations. Inlet and outlet structures and pretreatment areas should be cleared of all debris and litter.

e. Structural repairs and Replacement

Components of the wet and dry swales, which include, but are not limited to, pretreatment check dams and outlet structures, which require repair or replacement, should be addressed immediately following identification.

f. Erosion Control

Sources of sedimentation, specifically eroded areas in upland drainage areas, should be stabilized immediately upon identification. Stabilization should be with vegetative practices or other erosion control practices when vegetative measures do not prove effective.

Soil slumpage, erosion of the swale side slopes or around inlets/outlets, and cracking should be stabilized and repaired immediately upon identification.

g. Sediment Removal

Sediments, which accumulate in the wet or dry swales, should be removed periodically to prevent clogging of inlet or outlet structures. A typical clean-out cycle should occur when the sediment build up reaches 25% of the original swale depth; more frequent cleanings near inlet and outlet structures may be necessary.

Appendix G:
Figures

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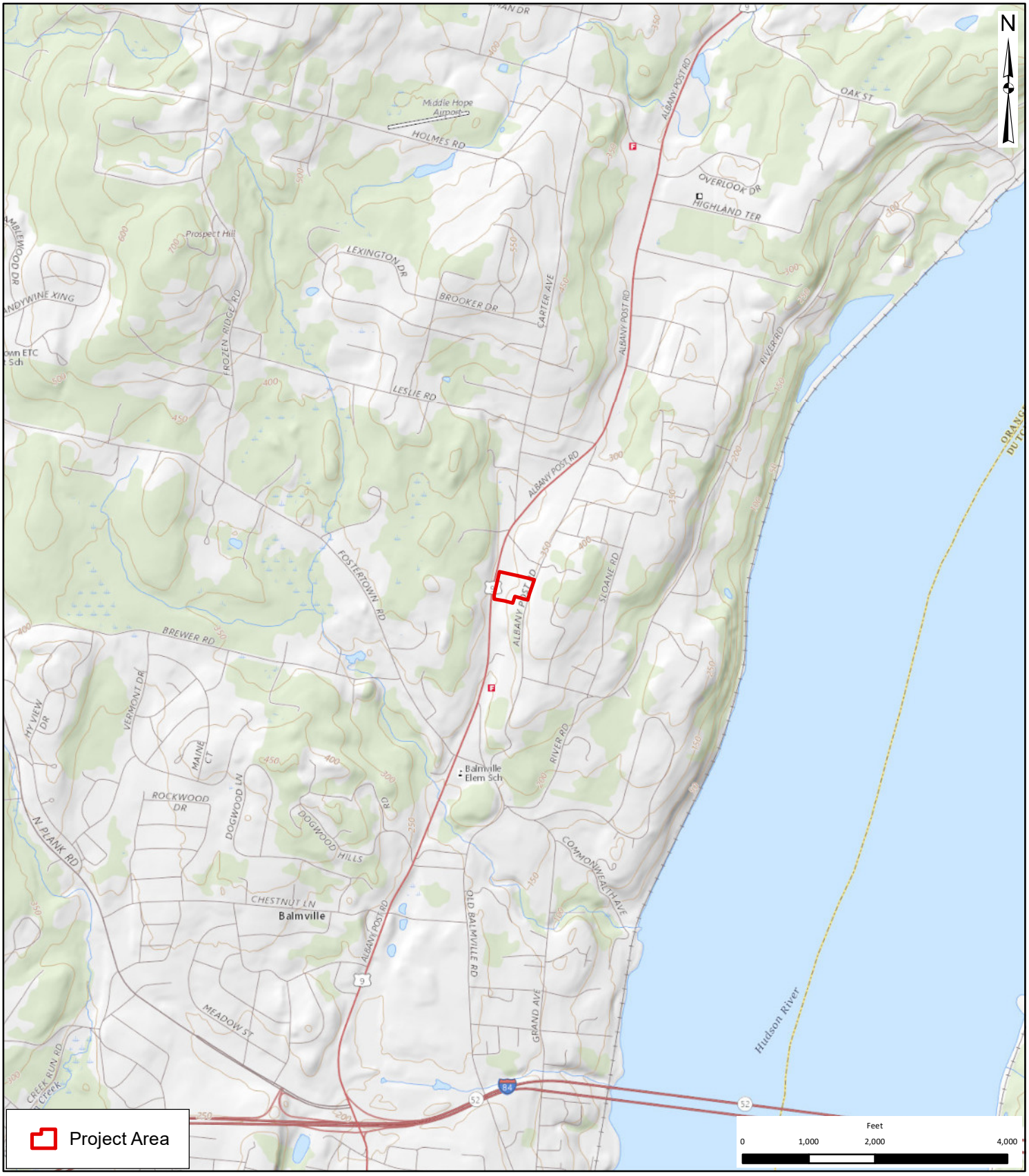

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North Country Office:
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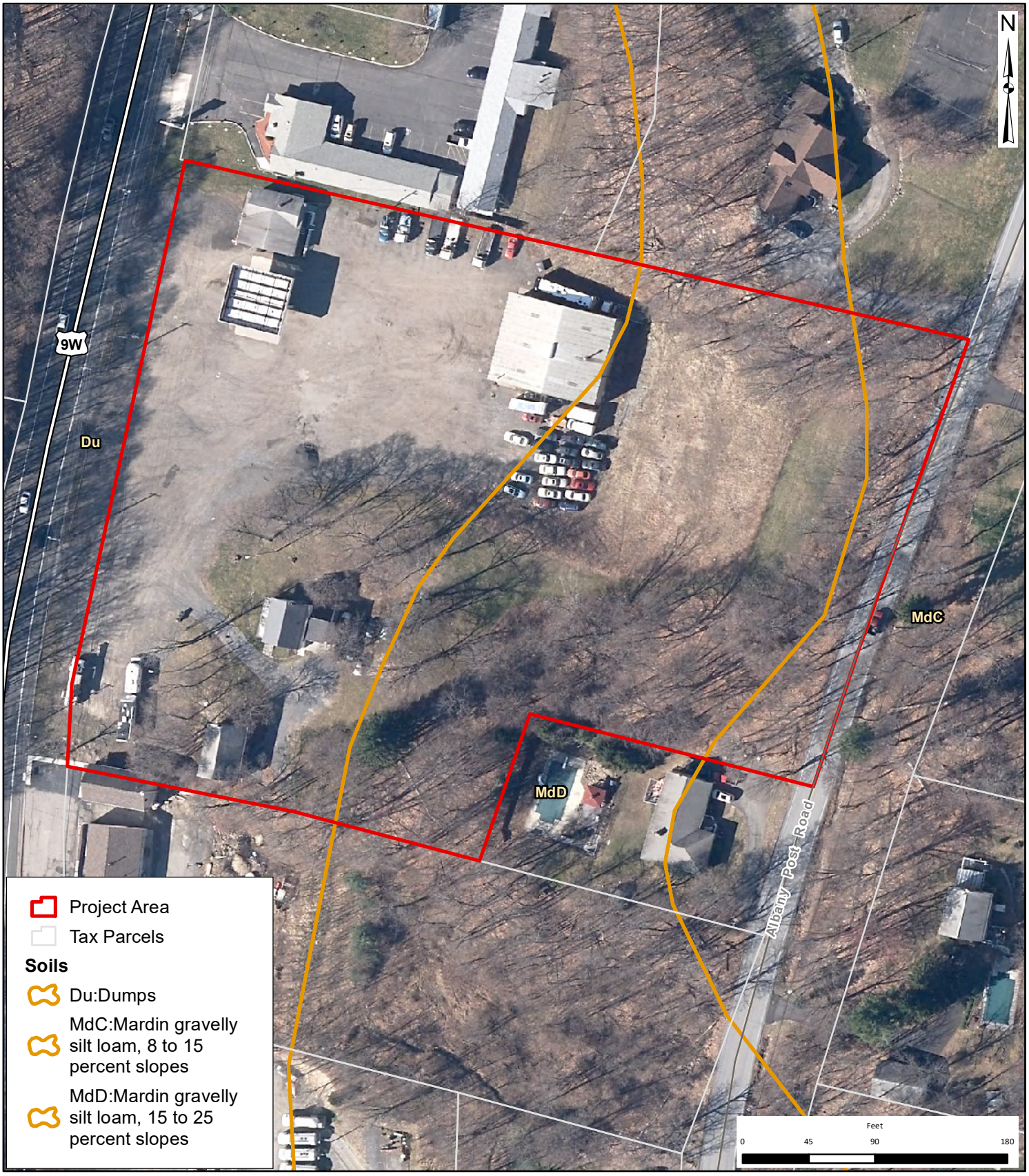
Phone: (518) 812-0513

Proposed Subdivision and Gas Land Petroleum, Inc., Site Plan

USGS Location Map

5200 Route 9W, Town of Newburgh - Orange County NY

Drawn:	RL-B
Date:	06/04/2019
Scale:	1 in = 2,000 feet
Project:	81912.00
Figure:	1



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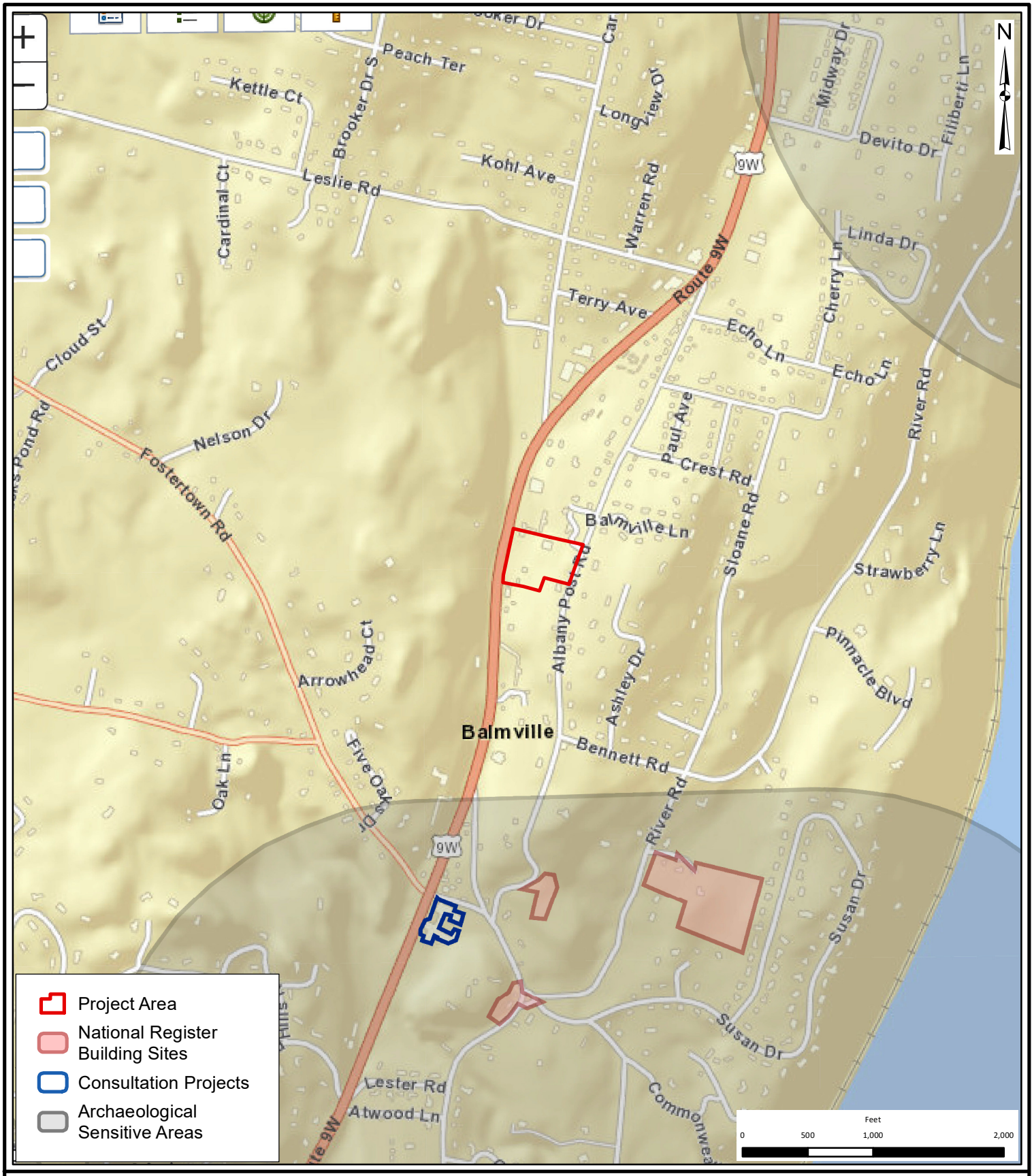
Proposed Subdivision and Gas Land Petroleum, Inc., Site Plan

Soils

5200 Route 9W, Town of Newburgh - Orange County NY

Drawn:	RL-B
Date:	06/04/2019
Scale:	1 in = 90 feet
Project:	81912.00
Figure:	2



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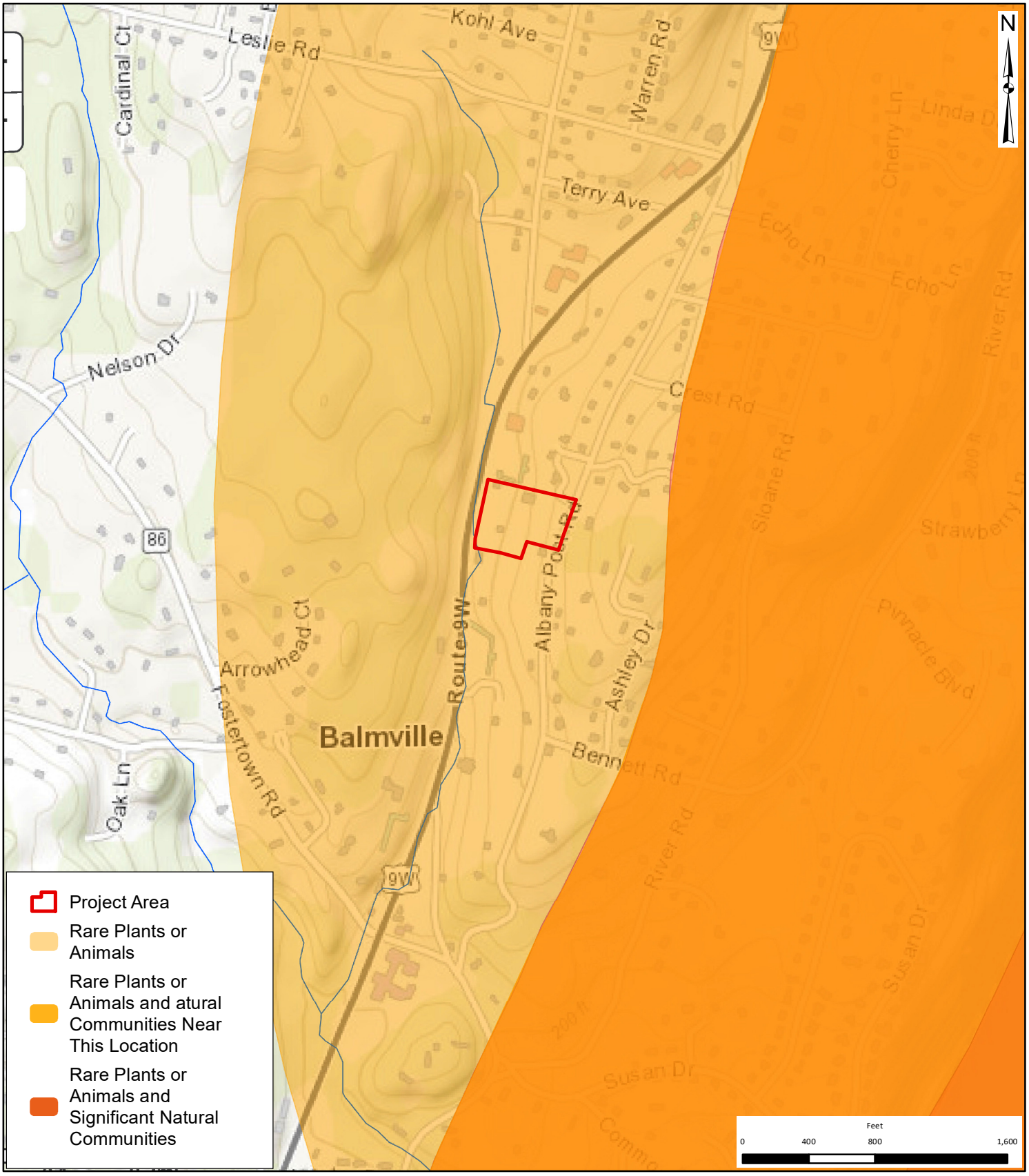
Proposed Subdivision and Gas Land Petroleum, Inc., Site Plan

NYSOPRHP Cultural Resource Information System (CRIS) Map

5200 Route 9W, Town of Newburgh - Orange County NY

Drawn:	RL-B
Date:	06/04/2019
Scale:	1 in = 1,000 feet
Project:	81912.00
Figure:	3



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Proposed Subdivision and Gas Land Petroleum, Inc., Site Plan

NYSDEC Environmental Resource Map

5200 Route 9W, Town of Newburgh - Orange County NY

Drawn:	RL-B
Date:	06/04/2019
Scale:	1 in = 800 feet
Project:	81912.00
Figure:	4

STORM WATER LEGEND

- EXISTING DIVIDE
- FLOW PATH
- XxX – SOIL GROUP LABEL AND DIVIDE
- # – SUBCATCHMENT
- # – DESIGN POINT
- # – STORMWATER MANAGEMENT PRACTICE OR STRUCTURE

FOR PRELIMINARY REVIEW - NOT FOR CONSTRUCTION

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- Troy, NY
- Poughkeepsie, NY
- White Plains, NY
- New York City, NY

rev.	date	description

GAS LAND 5200 ROUTE 9W

PRE-DEVELOPMENT WATERSHED MAP

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SPL	CPL
date	scale
07/22/21	1"=20'
project no.	
81912.00	
sheet no.	
FIG 5	

0 1 2 3
ORIGINAL SCALE IN INCHES

Drawing Name: Z:\projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\06_SWPPP_FIGS_81912-00_PRE-DEV.dwg
Xref's Attached: XBASE-ENG_81912-00_Stridiron; XLAYOUT_81912-00; XTB_30X42_81912-00; XSTORM_81912-00
Date Printed: Jul 14, 2021, 3:06pm

STORM WATER LEGEND

- PROPOSED DIVIDE
- FLOW PATH
- XxX — SOIL GROUP LABEL AND DIVIDE
- SUBCATCHMENT
- DESIGN POINT
- STORMWATER MANAGEMENT PRACTICE OR STRUCTURE

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

CHAZEN ENGINEERING, LAND SURVEYING, LANDSCAPE ARCHITECTURE & GEOLOGY CO., D.P.C.
THE Chazen COMPANIES® Proud to be Employee Owned
www.chazencompanies.com (888) 539-9073
Hudson Valley Office: 21 Fox Street, Poughkeepsie, New York 12601
Office Locations: Glens Falls, NY; Troy, NY; Poughkeepsie, NY; White Plains, NY; New York City, NY

rev.	date	description

GAS LAND 5200 ROUTE 9W

POST-DEVELOPMENT WATERSHED MAP

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SPL	CPL
date	scale
01/20/22	1"=20'
project no.	
81912.00	
sheet no.	
FIG 6	

0 1 2 3
ORIGINAL SCALE IN INCHES

Drawing Name: Z:\projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\06_SWPPP_FIG6_81912-00_POST-DEV.dwg
Xref's Attached: XBASE-ENG_81912-00_Shddrion; XLAYOUT_81912-00; XTB_30X42_81912-00; XSTORM_81912-00; XENG_81912-00
Date Printed: Jan 21, 2022, 4:25pm

Appendix H:
Chazen Certifying Professionals Letter

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THE Chazen COMPANIES®
Civil Engineers
Land Surveyors
Planners
Environmental & Safety Professionals
Landscape Architects
Transportation Planners & Engineers
Proud to be Employee Owned

HUDSON VALLEY OFFICE
21 Fox Street
Poughkeepsie, NY 12601
P: 845.454.3980 or 888.539.9073
www.chazencompanies.com

January 29, 2020

To Whom it May Concern:

In accordance with the NYSDEC SPDES General Permit GP-0-20-001, part VII.H.2, the New York State licensed Professional Engineers employed by the Chazen Companies and listed on the attachment to this letter are duly authorized to sign and seal Stormwater Pollution Prevention Plan (SWPPPs), NOIs, and NOTs prepared under their direct supervision.

Sincerely,

Richard M. Loewenstein, Jr., P.E.
Chief Executive Officer

THE Chazen COMPANIES®
Civil Engineers
Land Surveyors
Planners
Environmental & Safety Professionals
Landscape Architects
Transportation Planners & Engineers
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Poughkeepsie, NY 12601
P: 845.454.3980 or 888.539.9073
www.chazencompanies.com

Chazen Professional Engineers duly authorized to sign and seal SWPPPs, NOIs, and NOTs

Name:	Position:	Signature:	Date:
Joseph Lanaro, P.E.	Vice President of Engineering		1/30/2020
James Connors, P.E.	Senior Director		1/30/2020
Christopher Lapine, P.E.	Director	Christopher Lapine	1/31/2020
Roger Keating, P.E.	Director		1/30/2020
Peter Romano, P.E.	Director		1/31/2020
Walter Kubow, P.E.	Manager		1/29/2020
Eric Johnson, P.E.	Director	Eric P. Johnson	1/30/2020
George Cronk, P.E.	Director		1/31/2020
Sean Doty, P.E.	Director		1/31/2020
Michael Flanagan, P.E.	Sr. Project Engineer/Project Manager		1/31/2020
Kyle Ahearn, P.E.	Project Manager		1/31/2020

Appendix I:
Pre-Development Stormwater Modeling

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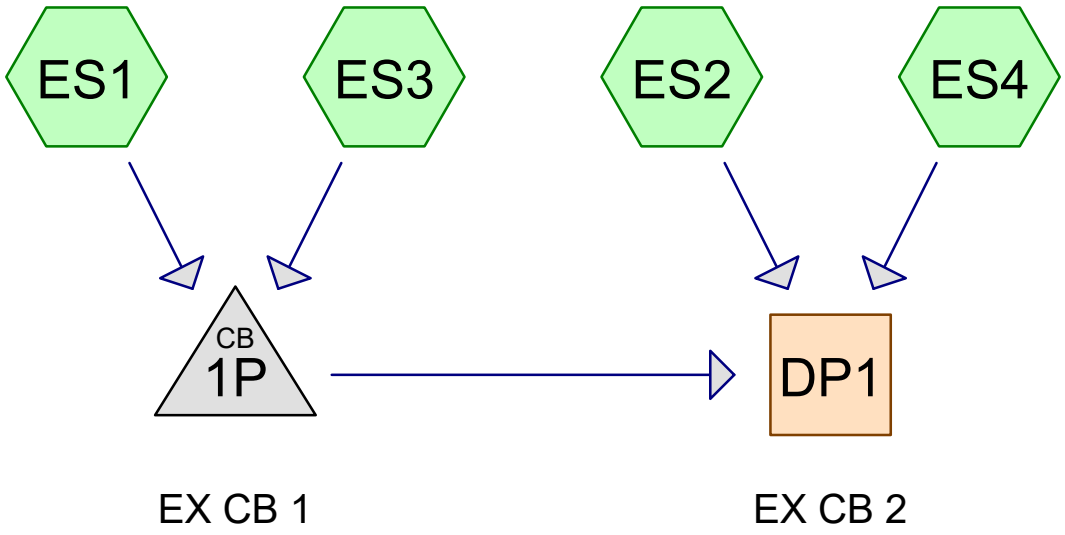

Subcat Reach Pond Link

Routing Diagram for PreDevelopment_HydroCAD_81912-00
Prepared by The Chazen Companies, Printed 1/17/2022

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Summary for Subcatchment ES1:

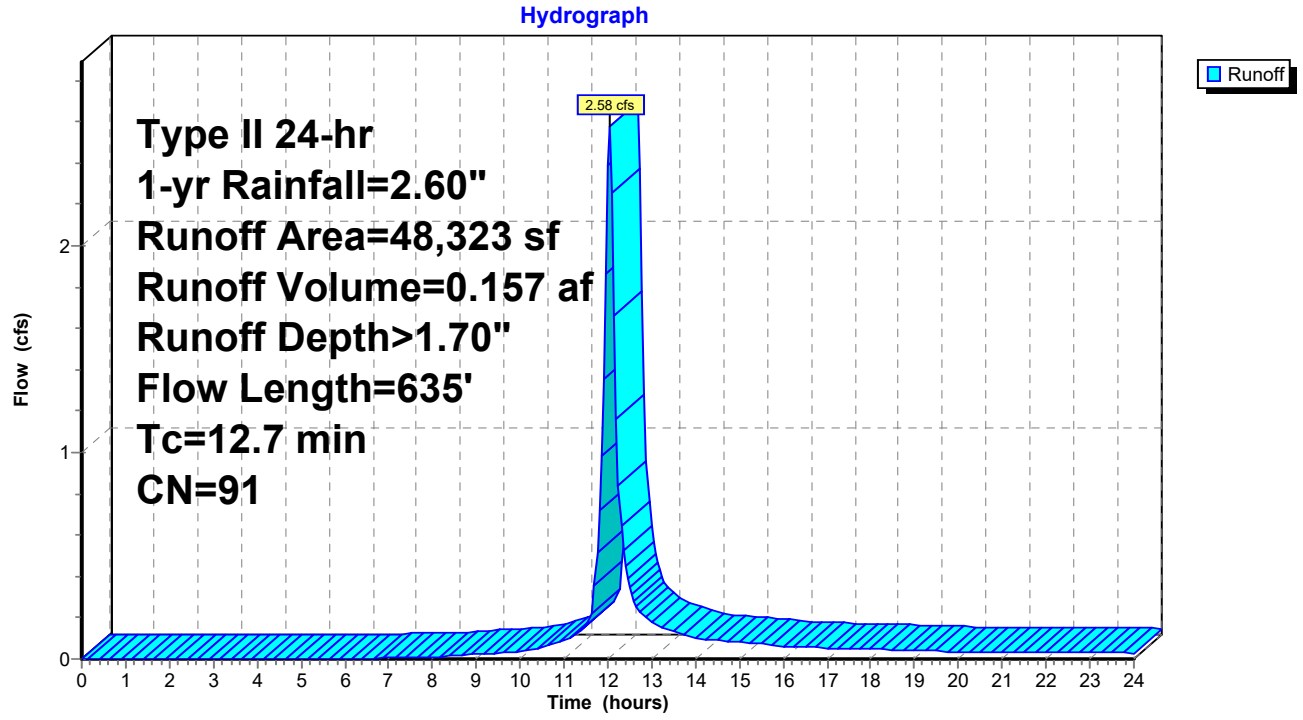
Runoff = 2.58 cfs @ 12.04 hrs, Volume= 0.157 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	25,611	98	Paved parking
	9,352	84	50-75% Grass cover, Fair, HSG D
	13,360	82	Woods/grass comb., Fair, HSG D
	48,323	91	Weighted Average
	22,712		47.00% Pervious Area
	25,611		53.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1600	0.18		**Sheet Flow, 100' woods @ 16%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.5	100	0.3700	3.04		**Shallow Concentrated Flow, 100' woods @ 37%** Woodland Kv= 5.0 fps
0.8	89	0.0674	1.82		**Shallow Concentrated Flow, 89' grass @ 6.7%** Short Grass Pasture Kv= 7.0 fps
2.0	346	0.0197	2.85		**Shallow Concentrated Flow, 346' gravel/paved @ 1.97%** Paved Kv= 20.3 fps
12.7	635	Total			

Subcatchment ES1:



Summary for Subcatchment ES2:

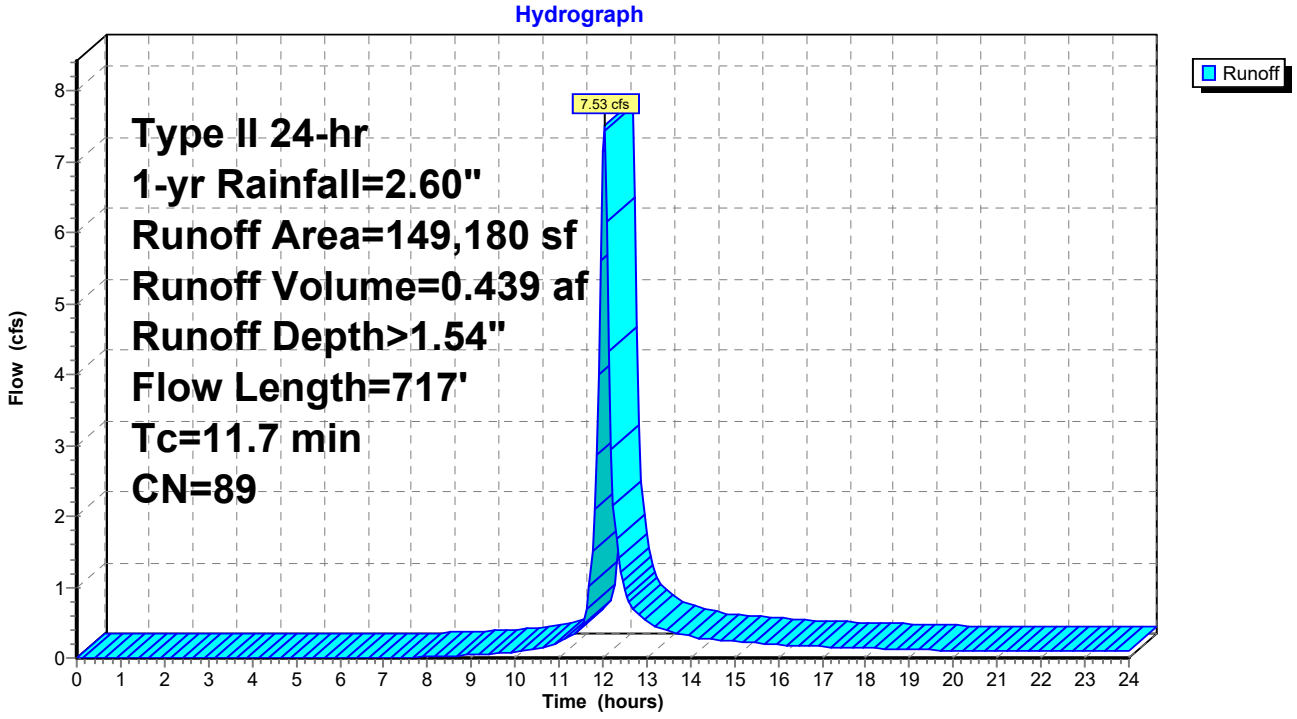
Runoff = 7.53 cfs @ 12.03 hrs, Volume= 0.439 af, Depth> 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	60,759	98	Paved parking
	40,490	84	50-75% Grass cover, Fair, HSG D
	47,931	82	Woods/grass comb., Fair, HSG D
	149,180	89	Weighted Average
	88,421		59.27% Pervious Area
	60,759		40.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	110	0.2700	0.22		**Sheet Flow, 110' woods @ 27%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.5	87	0.3260	2.85		**Shallow Concentrated Flow, 87' grass @ 33%** Woodland Kv= 5.0 fps
3.0	520	0.0198	2.86		**Shallow Concentrated Flow, 520' gravel/paved @ 2%** Paved Kv= 20.3 fps
11.7	717	Total			

Subcatchment ES2:



Summary for Subcatchment ES3:

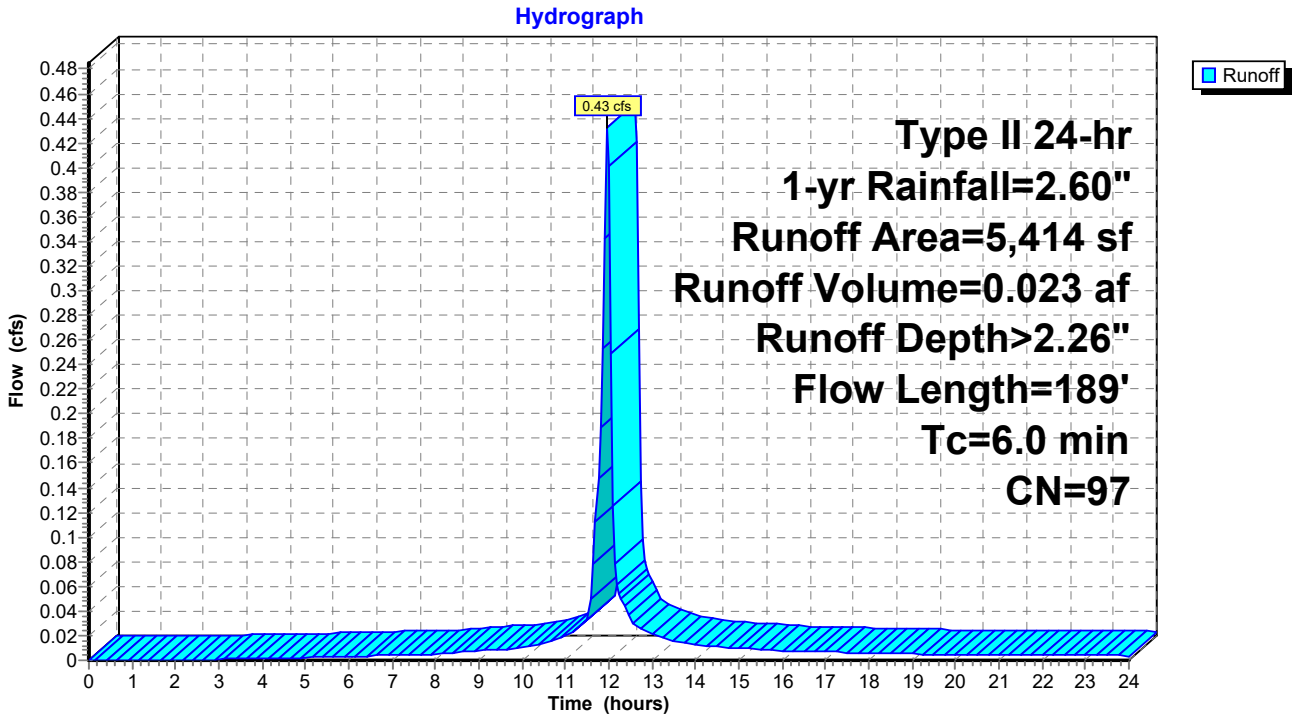
Runoff = 0.43 cfs @ 11.96 hrs, Volume= 0.023 af, Depth> 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	4,873	98	Paved parking
	541	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	5,414	97	Weighted Average
	541		9.99% Pervious Area
	4,873		90.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.03		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	89	0.0200	2.87		**Shallow Concentrated Flow, 89' PAVED** Paved Kv= 20.3 fps
2.1	189	Total, Increased to minimum Tc = 6.0 min			

Subcatchment ES3:



Summary for Subcatchment ES4:

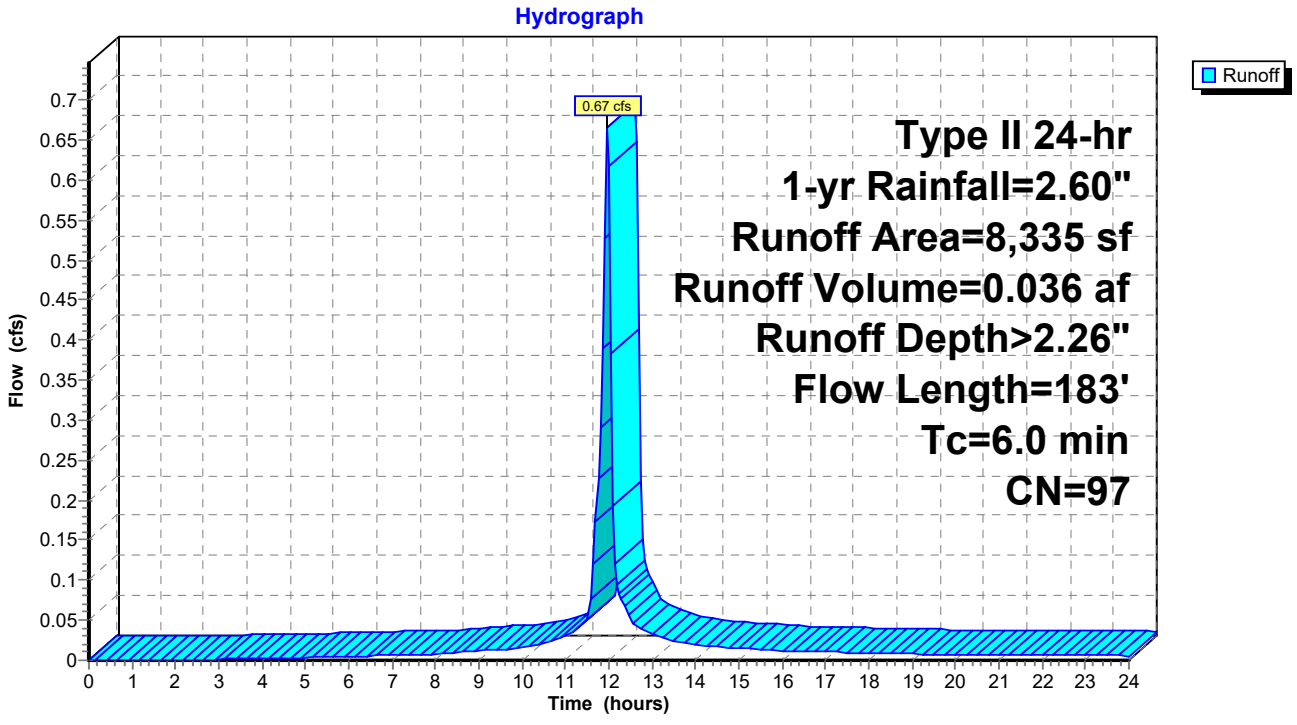
Runoff = 0.67 cfs @ 11.96 hrs, Volume= 0.036 af, Depth> 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	7,998	98	Paved parking
	337	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	8,335	97	Weighted Average
	337		4.04% Pervious Area
	7,998		95.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0330	1.67		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	83	0.0205	2.91		**Shallow Concentrated Flow, 83' PAVED** Paved Kv= 20.3 fps
1.5	183	Total, Increased to minimum Tc = 6.0 min			

Subcatchment ES4:

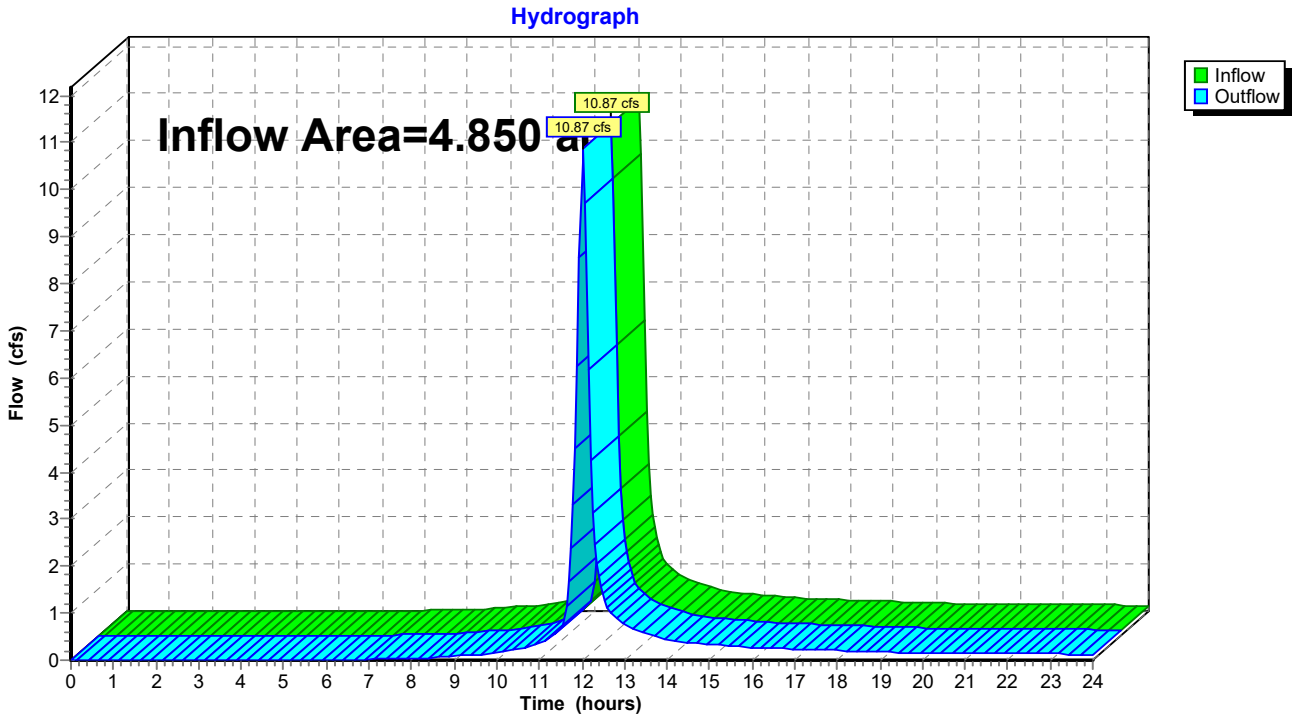


Summary for Reach DP1: EX CB 2

Inflow Area = 4.850 ac, 46.98% Impervious, Inflow Depth > 1.62" for 1-yr event
Inflow = 10.87 cfs @ 12.03 hrs, Volume= 0.655 af
Outflow = 10.87 cfs @ 12.03 hrs, Volume= 0.655 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: EX CB 2



Summary for Pond 1P: EX CB 1

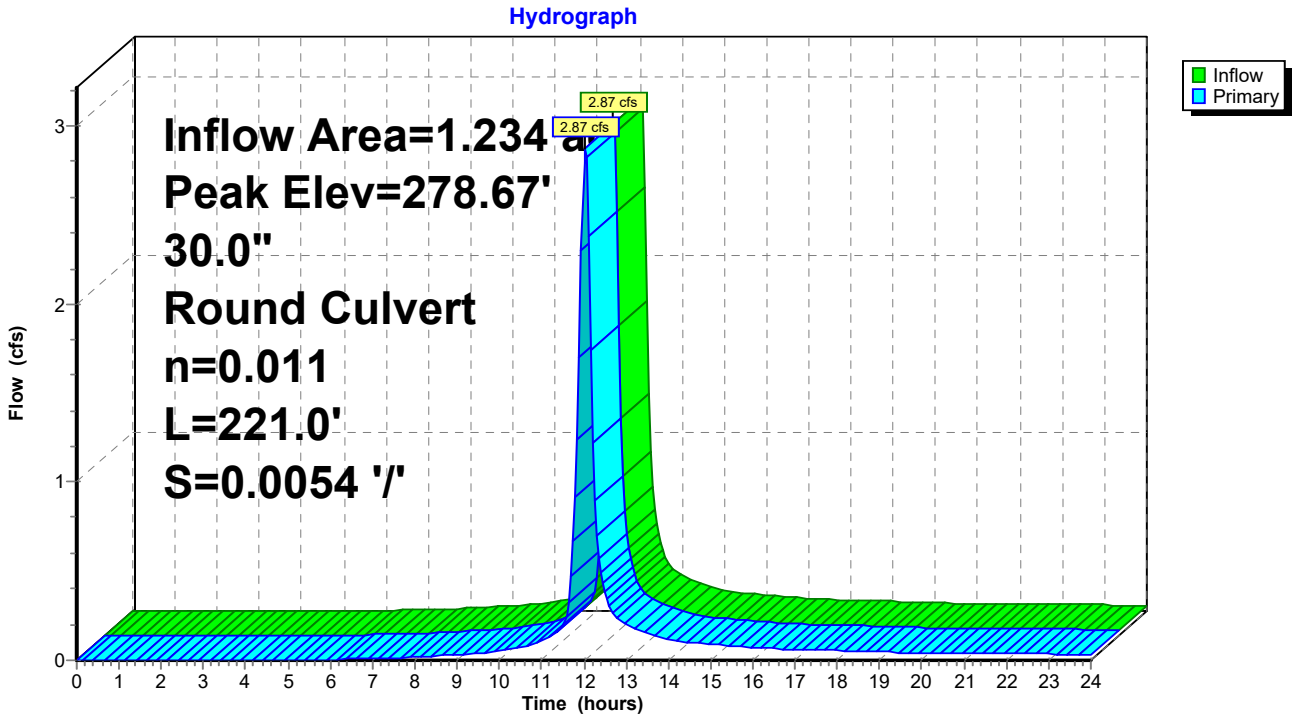
Inflow Area = 1.234 ac, 56.73% Impervious, Inflow Depth > 1.75" for 1-yr event
Inflow = 2.87 cfs @ 12.03 hrs, Volume= 0.180 af
Outflow = 2.87 cfs @ 12.03 hrs, Volume= 0.180 af, Atten= 0%, Lag= 0.0 min
Primary = 2.87 cfs @ 12.03 hrs, Volume= 0.180 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.67' @ 12.03 hrs
Flood Elev= 288.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**30.0" Round Culvert** L= 221.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.00' / 276.80' S= 0.0054 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 4.91 sf

Primary OutFlow Max=2.81 cfs @ 12.03 hrs HW=278.66' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.81 cfs @ 4.04 fps)

Pond 1P: EX CB 1



Summary for Subcatchment ES1:

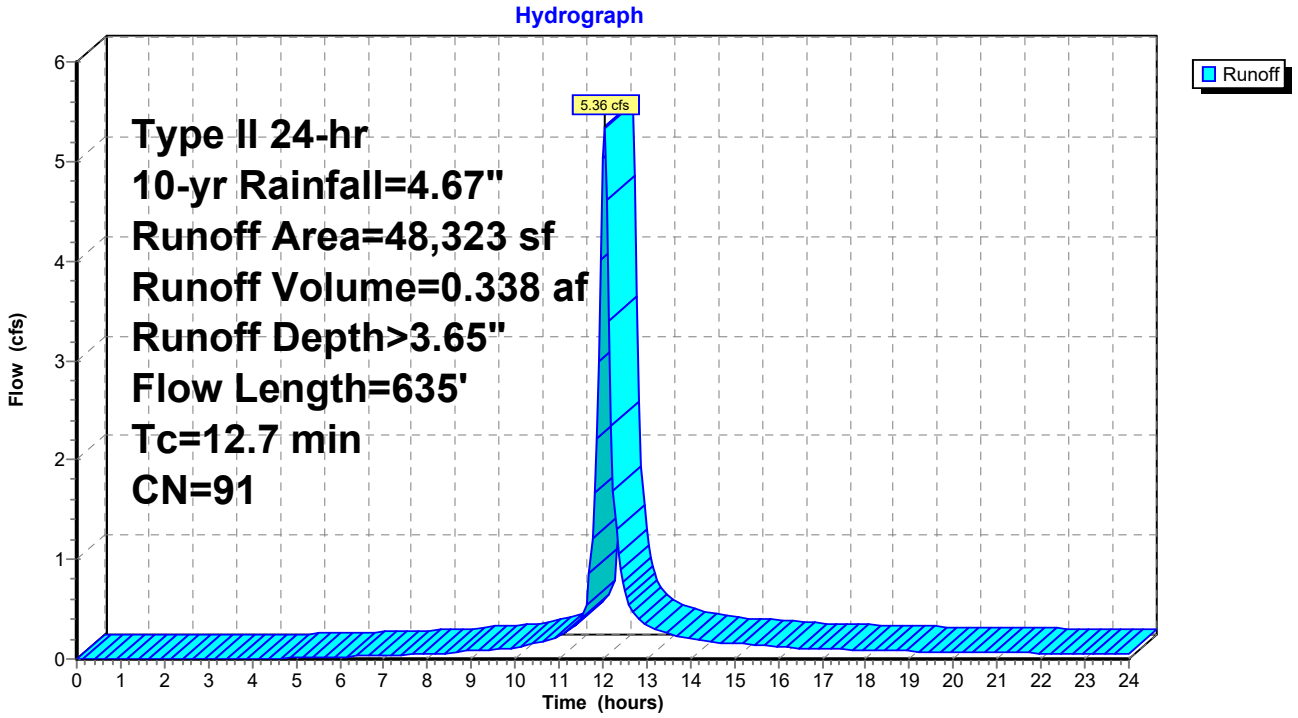
Runoff = 5.36 cfs @ 12.04 hrs, Volume= 0.338 af, Depth> 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.67"

	Area (sf)	CN	Description
*	25,611	98	Paved parking
	9,352	84	50-75% Grass cover, Fair, HSG D
	13,360	82	Woods/grass comb., Fair, HSG D
	48,323	91	Weighted Average
	22,712		47.00% Pervious Area
	25,611		53.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1600	0.18		**Sheet Flow, 100' woods @ 16%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.5	100	0.3700	3.04		**Shallow Concentrated Flow, 100' woods @ 37%** Woodland Kv= 5.0 fps
0.8	89	0.0674	1.82		**Shallow Concentrated Flow, 89' grass @ 6.7%** Short Grass Pasture Kv= 7.0 fps
2.0	346	0.0197	2.85		**Shallow Concentrated Flow, 346' gravel/paved @ 1.97%** Paved Kv= 20.3 fps
12.7	635	Total			

Subcatchment ES1:



Summary for Subcatchment ES2:

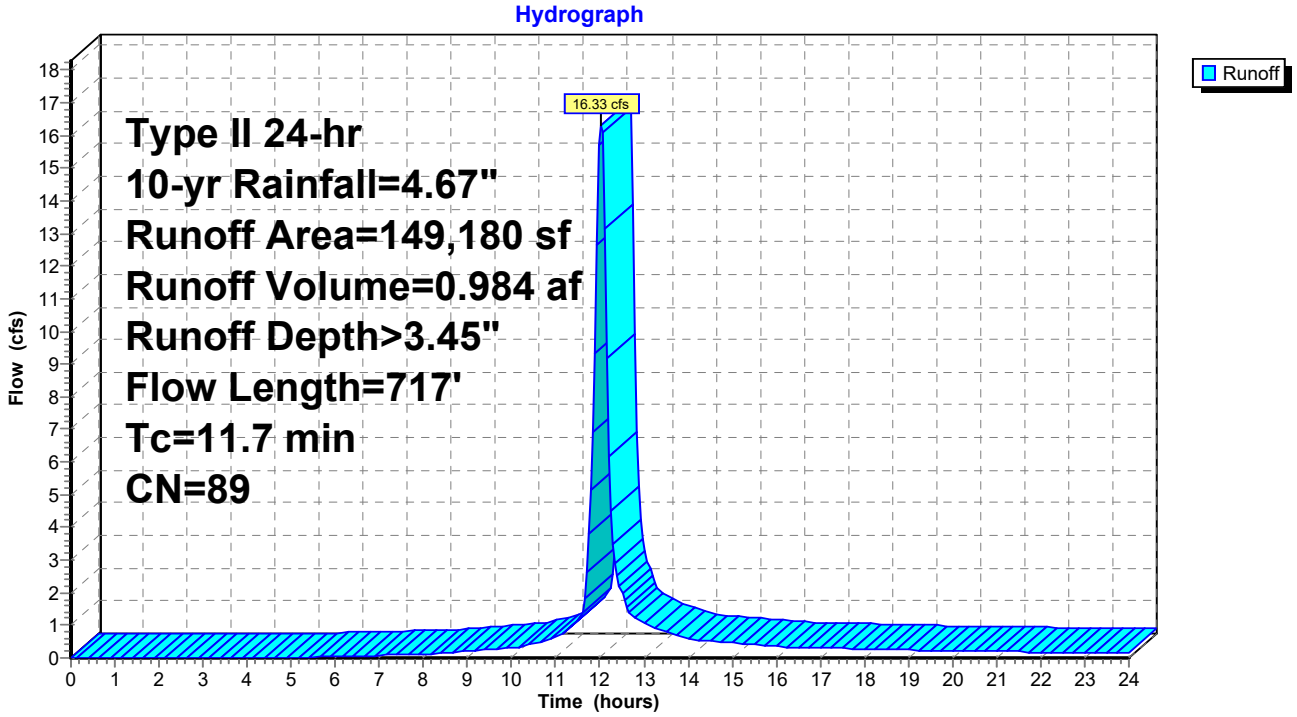
Runoff = 16.33 cfs @ 12.03 hrs, Volume= 0.984 af, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.67"

	Area (sf)	CN	Description
*	60,759	98	Paved parking
	40,490	84	50-75% Grass cover, Fair, HSG D
	47,931	82	Woods/grass comb., Fair, HSG D
	149,180	89	Weighted Average
	88,421		59.27% Pervious Area
	60,759		40.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	110	0.2700	0.22		**Sheet Flow, 110' woods @ 27%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.5	87	0.3260	2.85		**Shallow Concentrated Flow, 87' grass @ 33%** Woodland Kv= 5.0 fps
3.0	520	0.0198	2.86		**Shallow Concentrated Flow, 520' gravel/paved @ 2%** Paved Kv= 20.3 fps
11.7	717	Total			

Subcatchment ES2:



Summary for Subcatchment ES3:

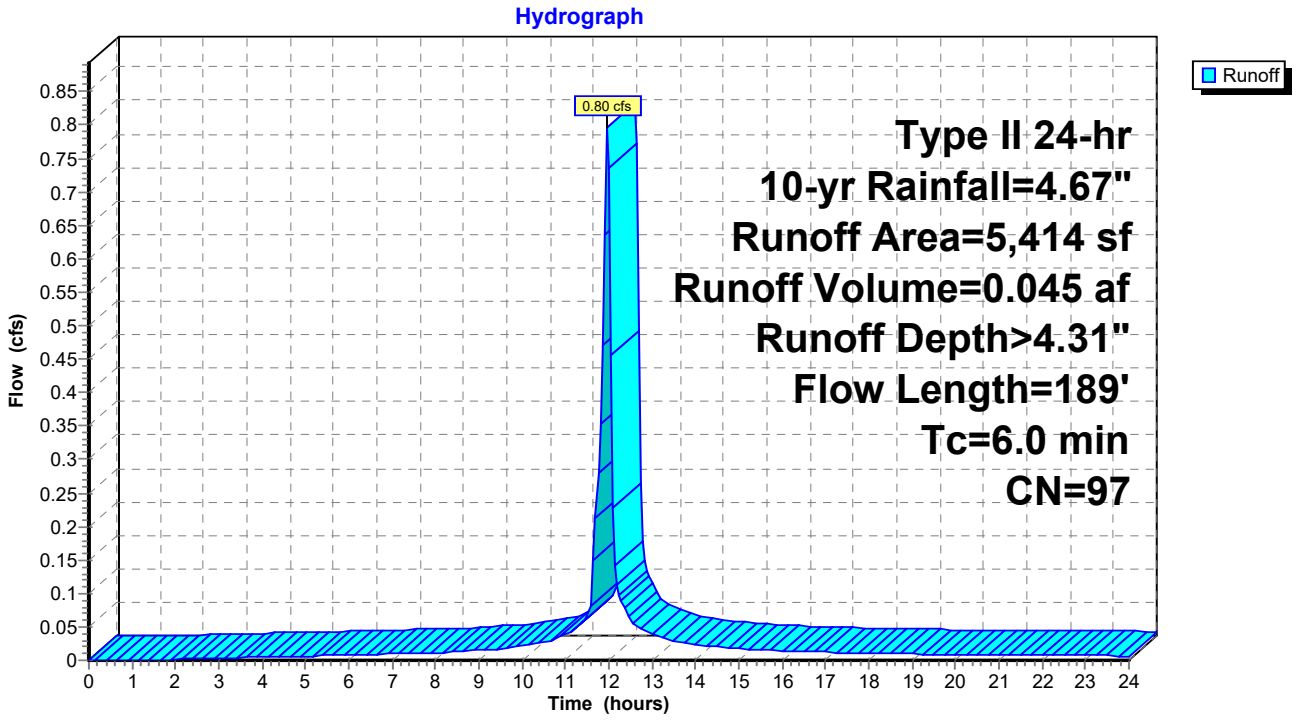
Runoff = 0.80 cfs @ 11.96 hrs, Volume= 0.045 af, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.67"

	Area (sf)	CN	Description
*	4,873	98	Paved parking
	541	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	5,414	97	Weighted Average
	541		9.99% Pervious Area
	4,873		90.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.03		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	89	0.0200	2.87		**Shallow Concentrated Flow, 89' PAVED** Paved Kv= 20.3 fps
2.1	189	Total, Increased to minimum Tc = 6.0 min			

Subcatchment ES3:



Summary for Subcatchment ES4:

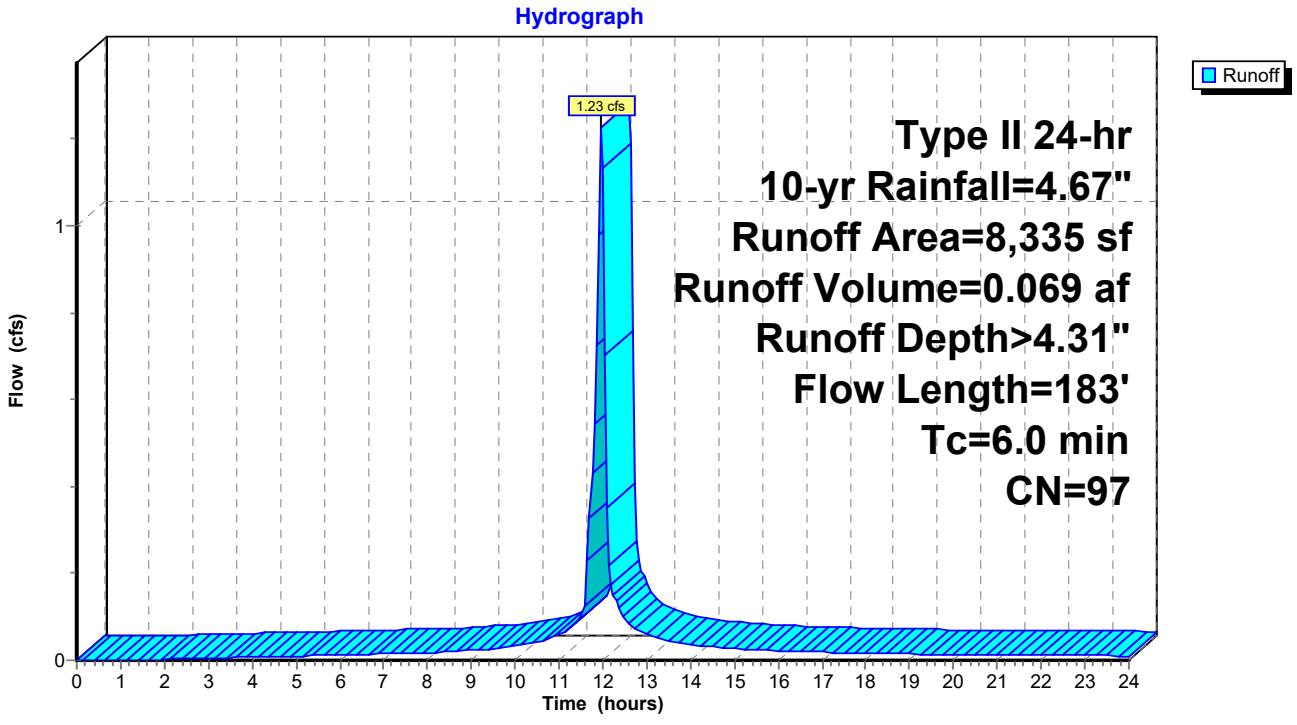
Runoff = 1.23 cfs @ 11.96 hrs, Volume= 0.069 af, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.67"

	Area (sf)	CN	Description
*	7,998	98	Paved parking
	337	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	8,335	97	Weighted Average
	337		4.04% Pervious Area
	7,998		95.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0330	1.67		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	83	0.0205	2.91		**Shallow Concentrated Flow, 83' PAVED** Paved Kv= 20.3 fps
1.5	183	Total, Increased to minimum Tc = 6.0 min			

Subcatchment ES4:

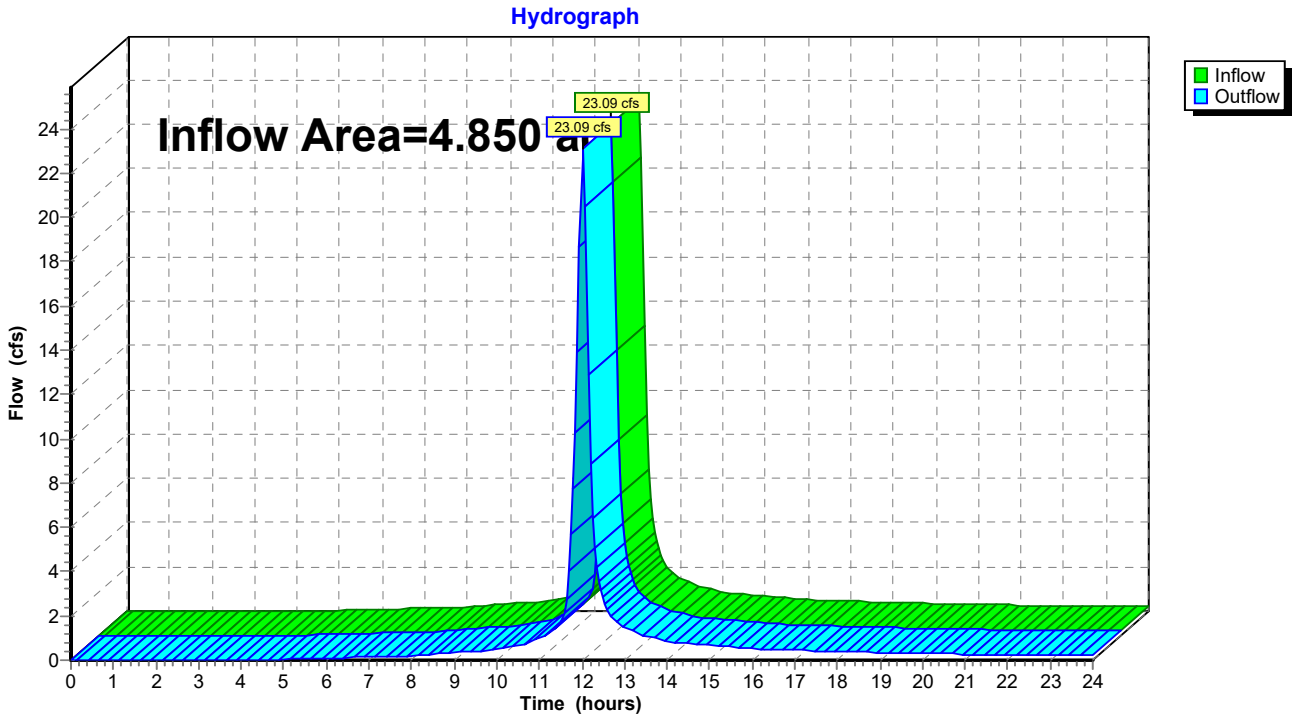


Summary for Reach DP1: EX CB 2

Inflow Area = 4.850 ac, 46.98% Impervious, Inflow Depth > 3.55" for 10-yr event
Inflow = 23.09 cfs @ 12.02 hrs, Volume= 1.436 af
Outflow = 23.09 cfs @ 12.02 hrs, Volume= 1.436 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: EX CB 2



Summary for Pond 1P: EX CB 1

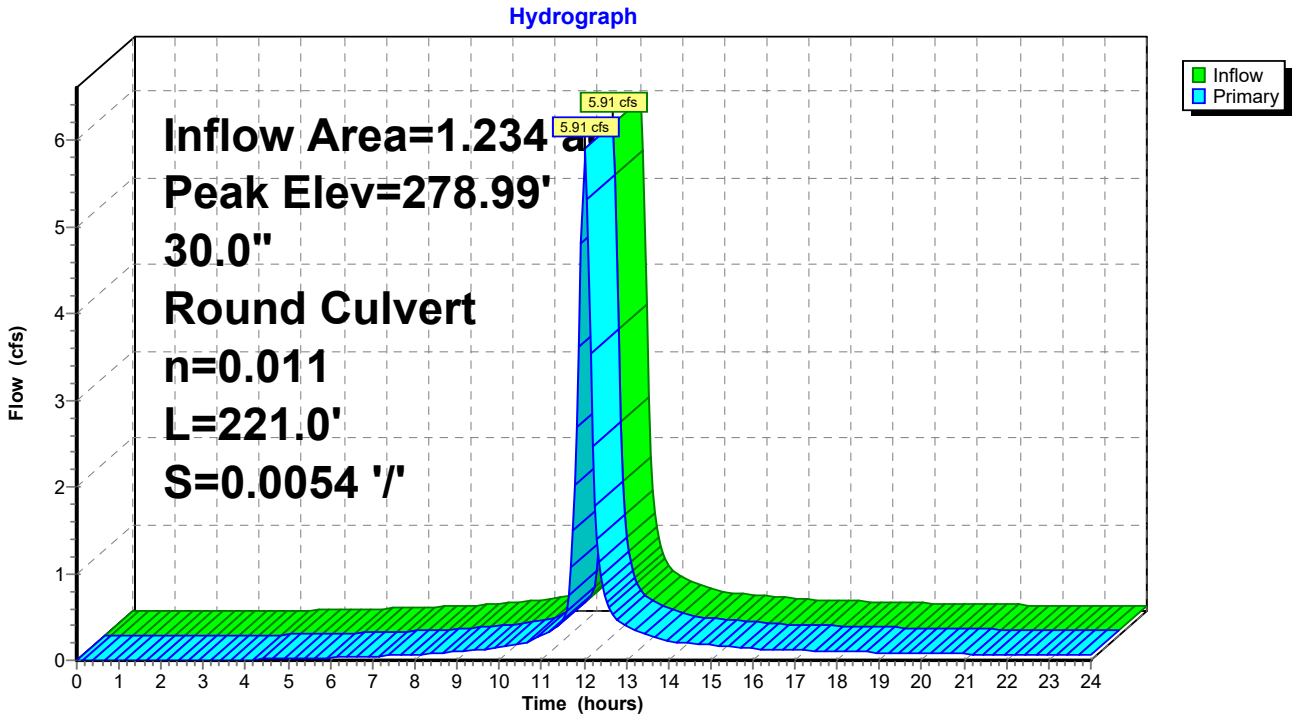
Inflow Area = 1.234 ac, 56.73% Impervious, Inflow Depth > 3.72" for 10-yr event
Inflow = 5.91 cfs @ 12.03 hrs, Volume= 0.382 af
Outflow = 5.91 cfs @ 12.03 hrs, Volume= 0.382 af, Atten= 0%, Lag= 0.0 min
Primary = 5.91 cfs @ 12.03 hrs, Volume= 0.382 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.99' @ 12.03 hrs
Flood Elev= 288.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**30.0" Round Culvert** L= 221.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.00' / 276.80' S= 0.0054 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 4.91 sf

Primary OutFlow Max=5.78 cfs @ 12.03 hrs HW=278.98' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.78 cfs @ 4.82 fps)

Pond 1P: EX CB 1



Summary for Subcatchment ES1:

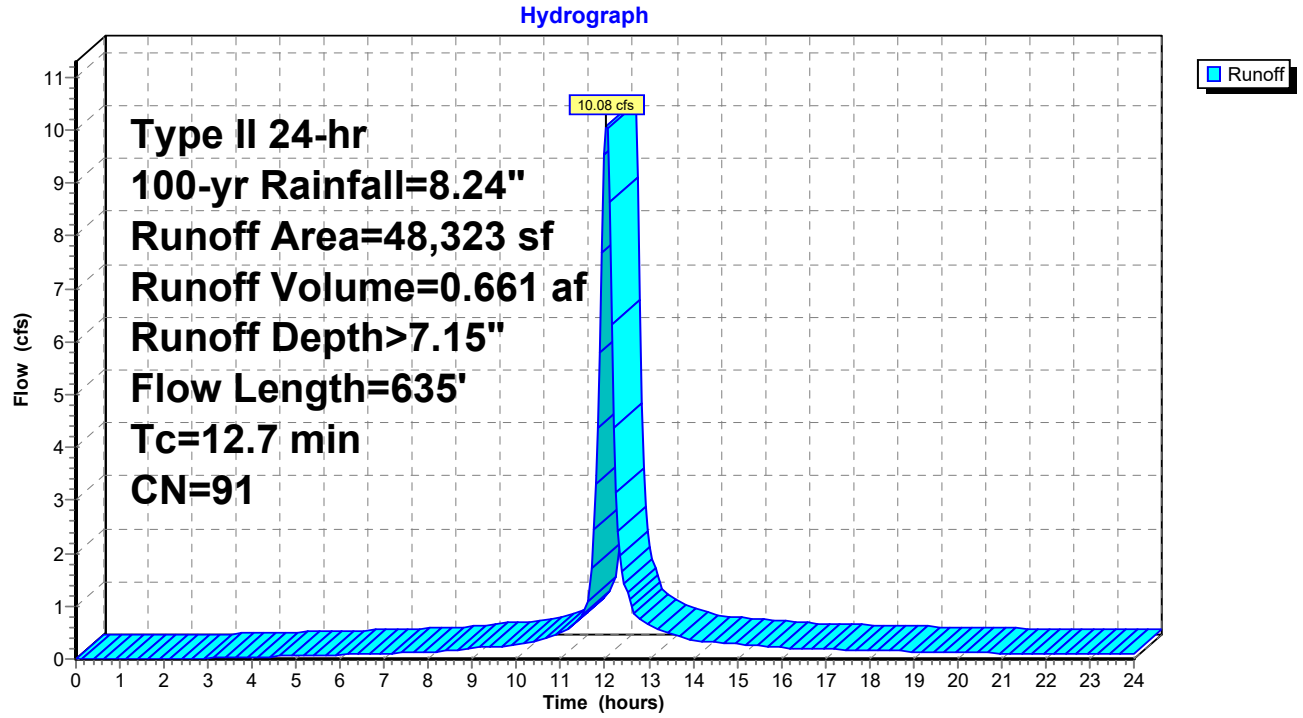
Runoff = 10.08 cfs @ 12.04 hrs, Volume= 0.661 af, Depth> 7.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.24"

	Area (sf)	CN	Description
*	25,611	98	Paved parking
	9,352	84	50-75% Grass cover, Fair, HSG D
	13,360	82	Woods/grass comb., Fair, HSG D
	48,323	91	Weighted Average
	22,712		47.00% Pervious Area
	25,611		53.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1600	0.18		**Sheet Flow, 100' woods @ 16%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.5	100	0.3700	3.04		**Shallow Concentrated Flow, 100' woods @ 37%** Woodland Kv= 5.0 fps
0.8	89	0.0674	1.82		**Shallow Concentrated Flow, 89' grass @ 6.7%** Short Grass Pasture Kv= 7.0 fps
2.0	346	0.0197	2.85		**Shallow Concentrated Flow, 346' gravel/paved @ 1.97%** Paved Kv= 20.3 fps
12.7	635	Total			

Subcatchment ES1:



Summary for Subcatchment ES2:

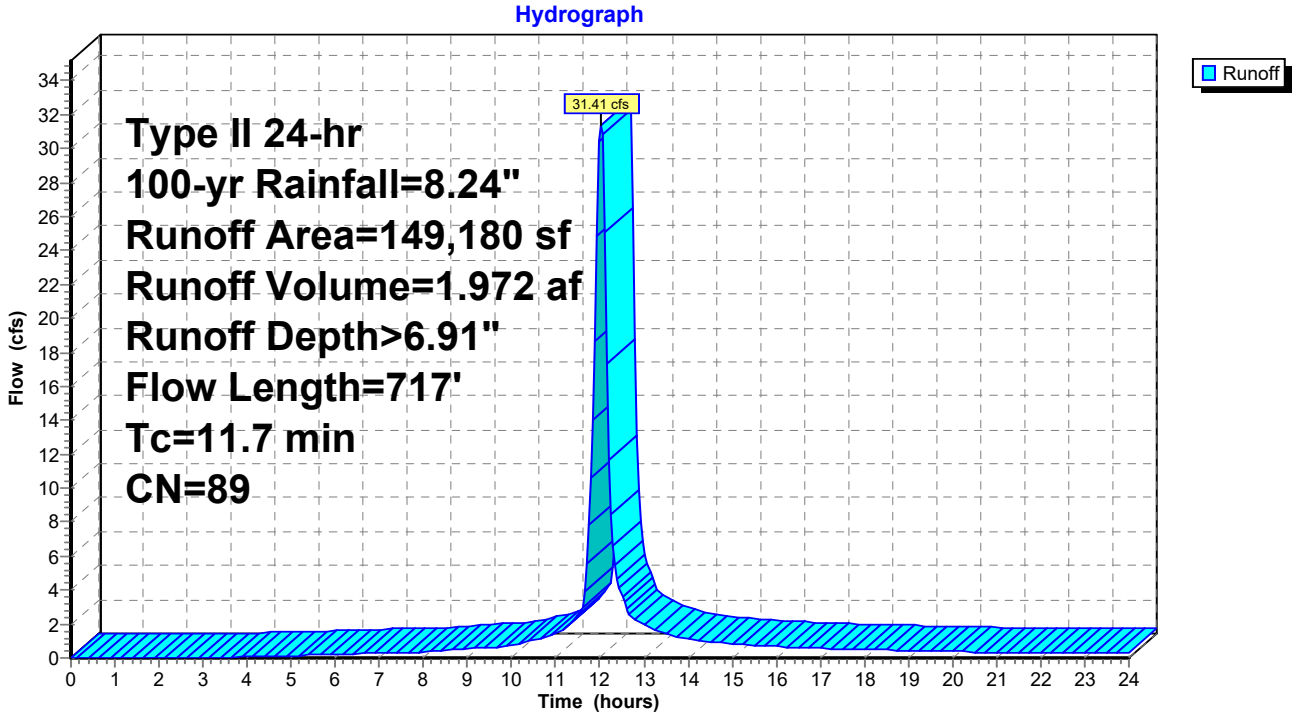
Runoff = 31.41 cfs @ 12.03 hrs, Volume= 1.972 af, Depth> 6.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.24"

	Area (sf)	CN	Description
*	60,759	98	Paved parking
	40,490	84	50-75% Grass cover, Fair, HSG D
	47,931	82	Woods/grass comb., Fair, HSG D
	149,180	89	Weighted Average
	88,421		59.27% Pervious Area
	60,759		40.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	110	0.2700	0.22		**Sheet Flow, 110' woods @ 27%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.5	87	0.3260	2.85		**Shallow Concentrated Flow, 87' grass @ 33%** Woodland Kv= 5.0 fps
3.0	520	0.0198	2.86		**Shallow Concentrated Flow, 520' gravel/paved @ 2%** Paved Kv= 20.3 fps
11.7	717	Total			

Subcatchment ES2:



Summary for Subcatchment ES3:

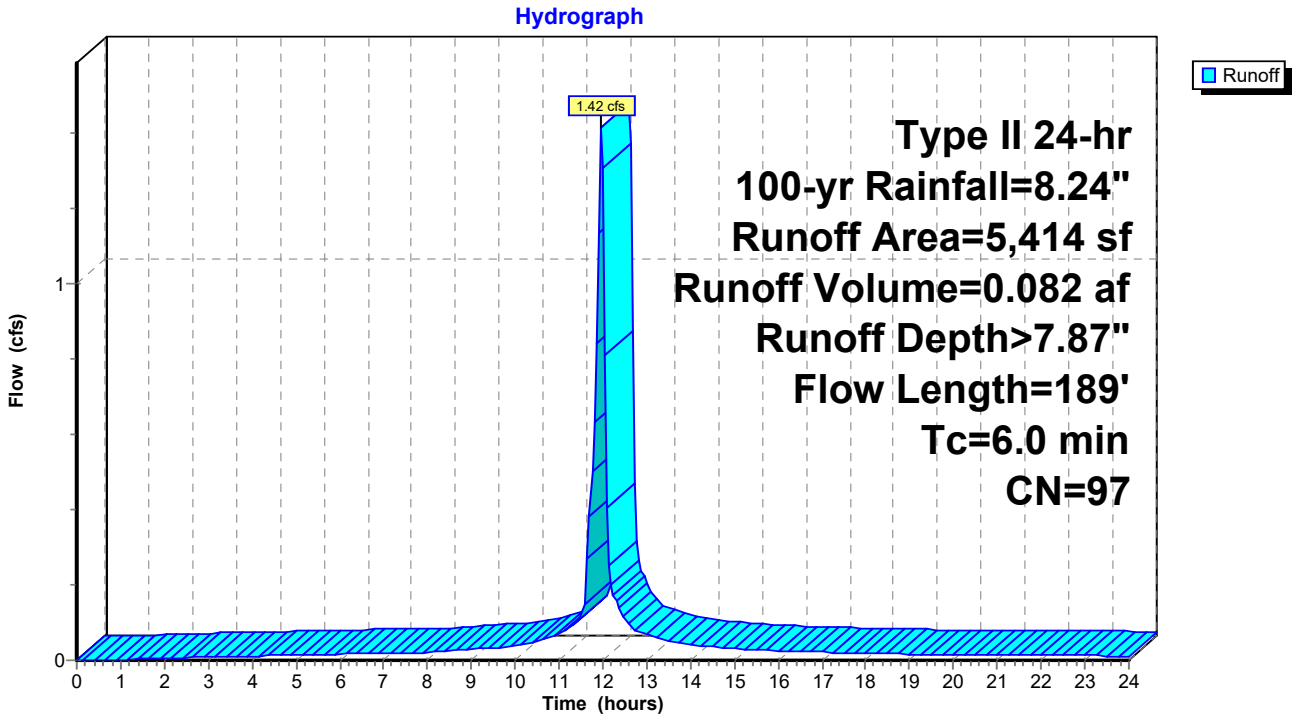
Runoff = 1.42 cfs @ 11.96 hrs, Volume= 0.082 af, Depth> 7.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.24"

	Area (sf)	CN	Description
*	4,873	98	Paved parking
	541	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	5,414	97	Weighted Average
	541		9.99% Pervious Area
	4,873		90.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.03		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	89	0.0200	2.87		**Shallow Concentrated Flow, 89' PAVED** Paved Kv= 20.3 fps
2.1	189	Total, Increased to minimum Tc = 6.0 min			

Subcatchment ES3:



Summary for Subcatchment ES4:

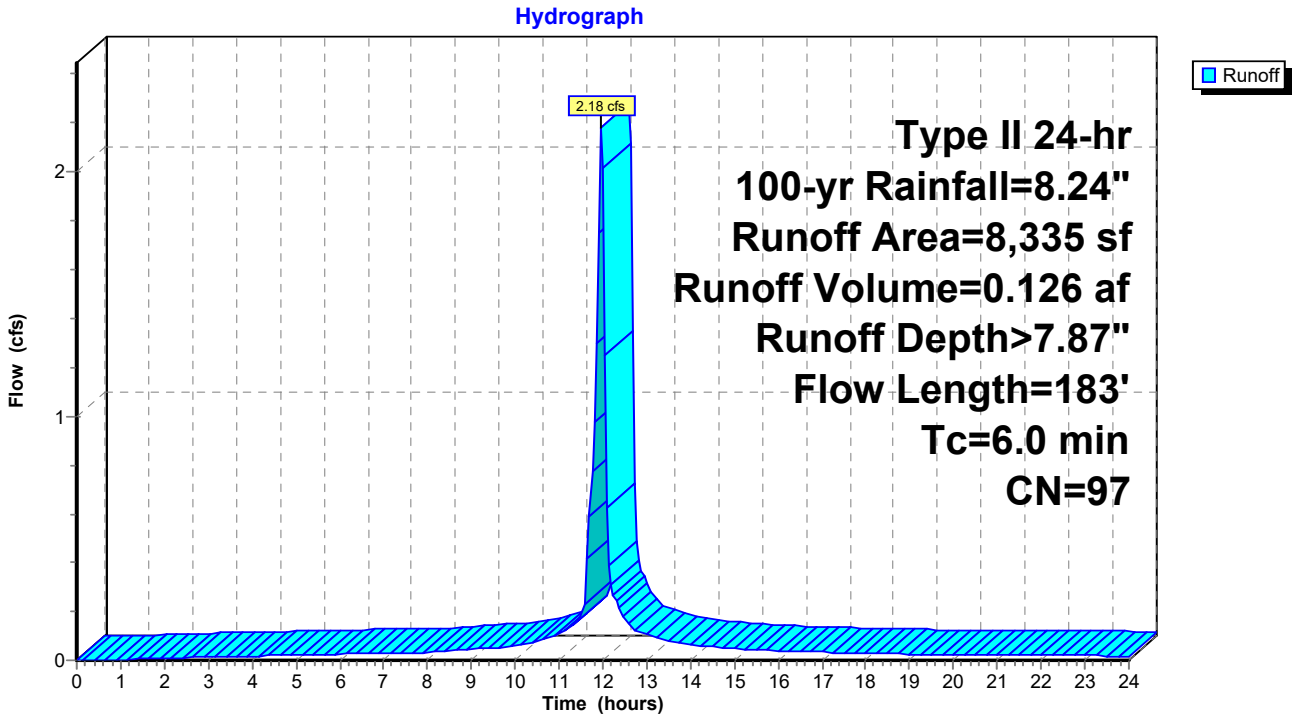
Runoff = 2.18 cfs @ 11.96 hrs, Volume= 0.126 af, Depth> 7.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.24"

	Area (sf)	CN	Description
*	7,998	98	Paved parking
	337	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	8,335	97	Weighted Average
	337		4.04% Pervious Area
	7,998		95.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0330	1.67		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	83	0.0205	2.91		**Shallow Concentrated Flow, 83' PAVED** Paved Kv= 20.3 fps
1.5	183	Total, Increased to minimum Tc = 6.0 min			

Subcatchment ES4:

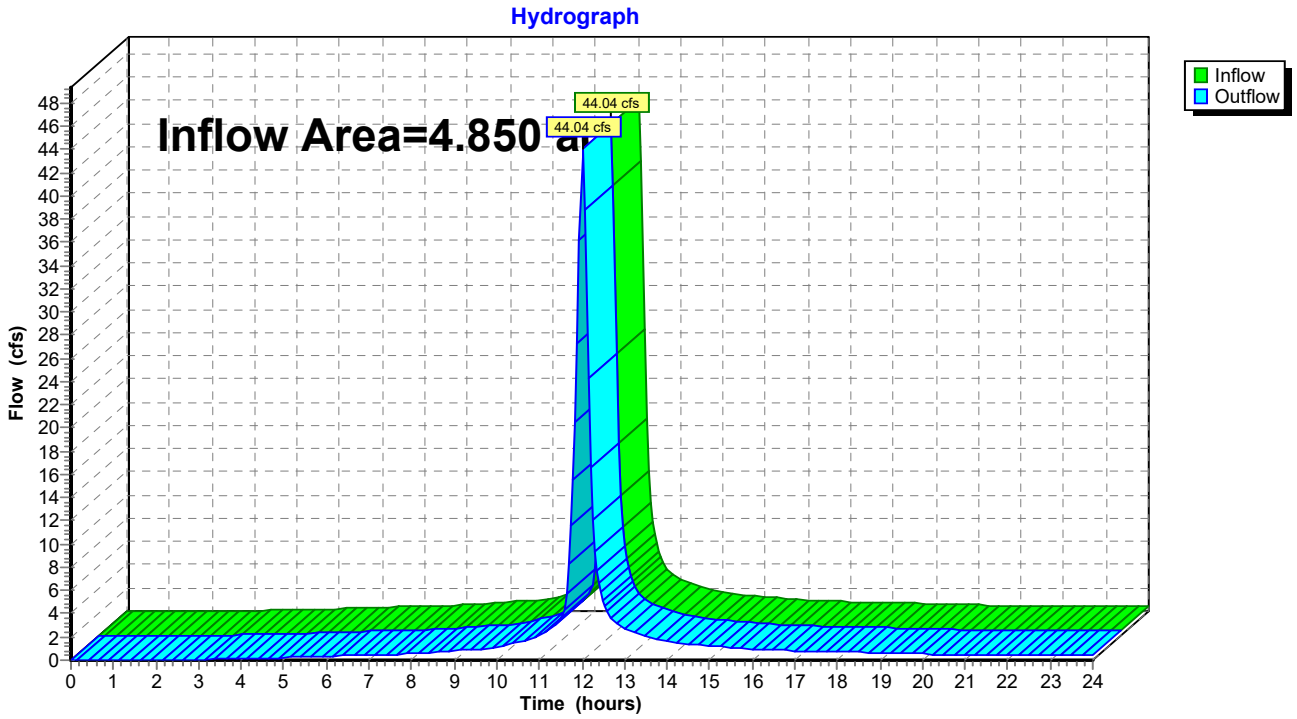


Summary for Reach DP1: EX CB 2

Inflow Area = 4.850 ac, 46.98% Impervious, Inflow Depth > 7.03" for 100-yr event
Inflow = 44.04 cfs @ 12.02 hrs, Volume= 2.839 af
Outflow = 44.04 cfs @ 12.02 hrs, Volume= 2.839 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: EX CB 2



Summary for Pond 1P: EX CB 1

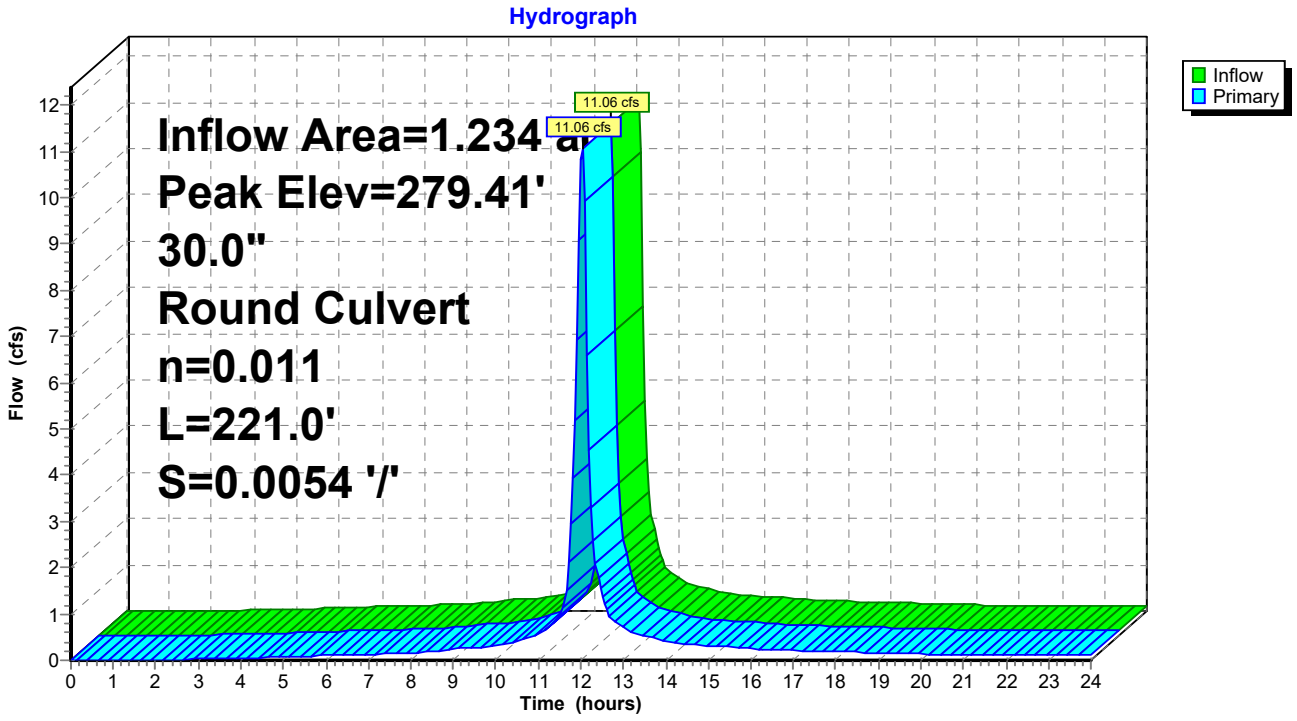
Inflow Area = 1.234 ac, 56.73% Impervious, Inflow Depth > 7.22" for 100-yr event
Inflow = 11.06 cfs @ 12.03 hrs, Volume= 0.742 af
Outflow = 11.06 cfs @ 12.03 hrs, Volume= 0.742 af, Atten= 0%, Lag= 0.0 min
Primary = 11.06 cfs @ 12.03 hrs, Volume= 0.742 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 279.41' @ 12.03 hrs
Flood Elev= 288.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**30.0" Round Culvert** L= 221.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.00' / 276.80' S= 0.0054 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 4.91 sf

Primary OutFlow Max=10.83 cfs @ 12.03 hrs HW=279.39' TW=0.00' (Dynamic Tailwater)
↳**1=Culvert** (Barrel Controls 10.83 cfs @ 5.56 fps)

Pond 1P: EX CB 1



Appendix J:
Post-Development Stormwater Modeling

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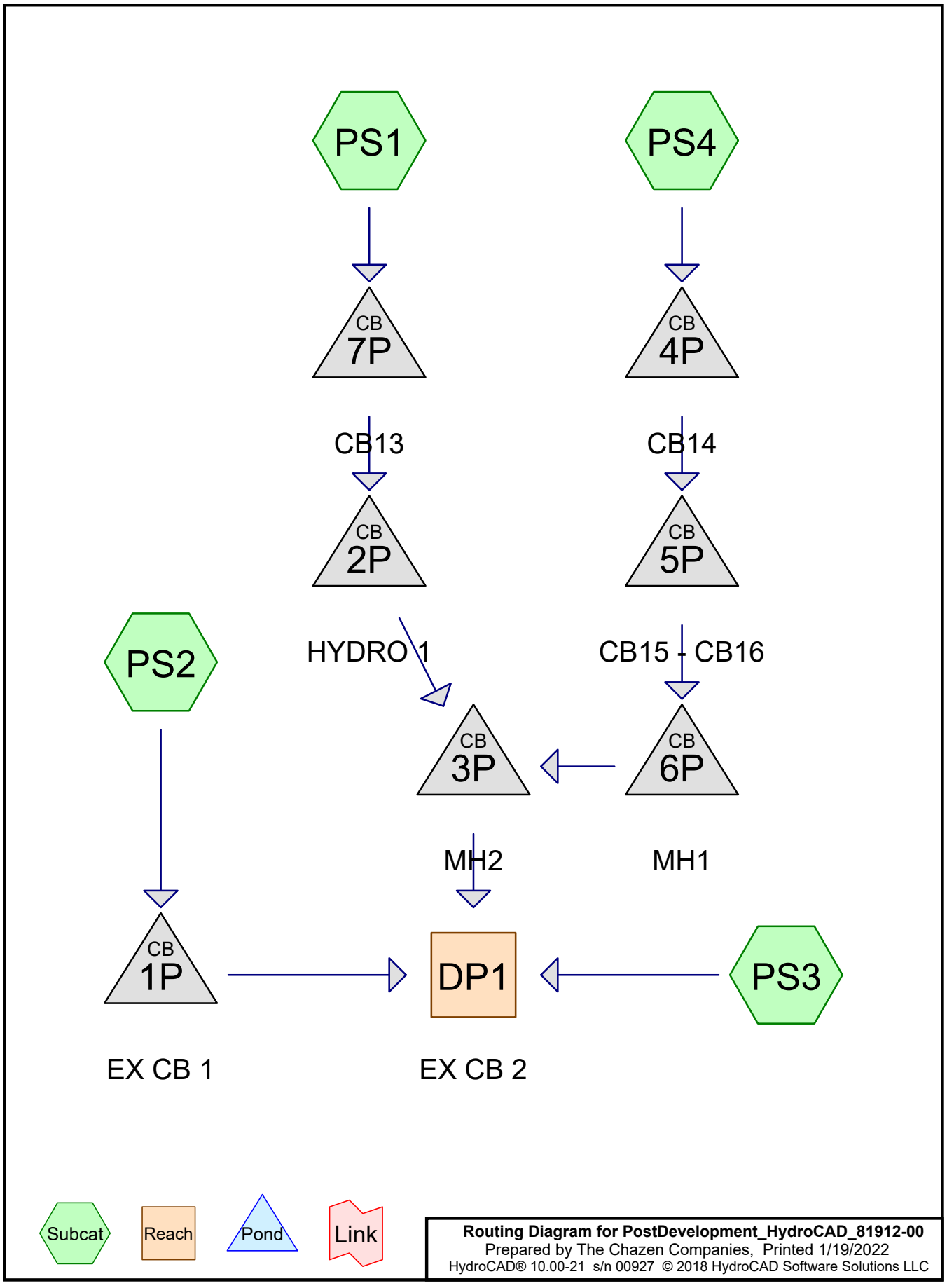
PS1
PS4
CB 7P
CB 4P
CB13
CB14
CB 2P
CB 5P
PS2
HYDRO 1
CB15 - CB16
CB 3P
CB 6P
MH2
MH1
CB 1P
DP1
PS3
EX CB 1
EX CB 2
Subcat
Reach
Pond
Link

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Summary for Subcatchment PS1:

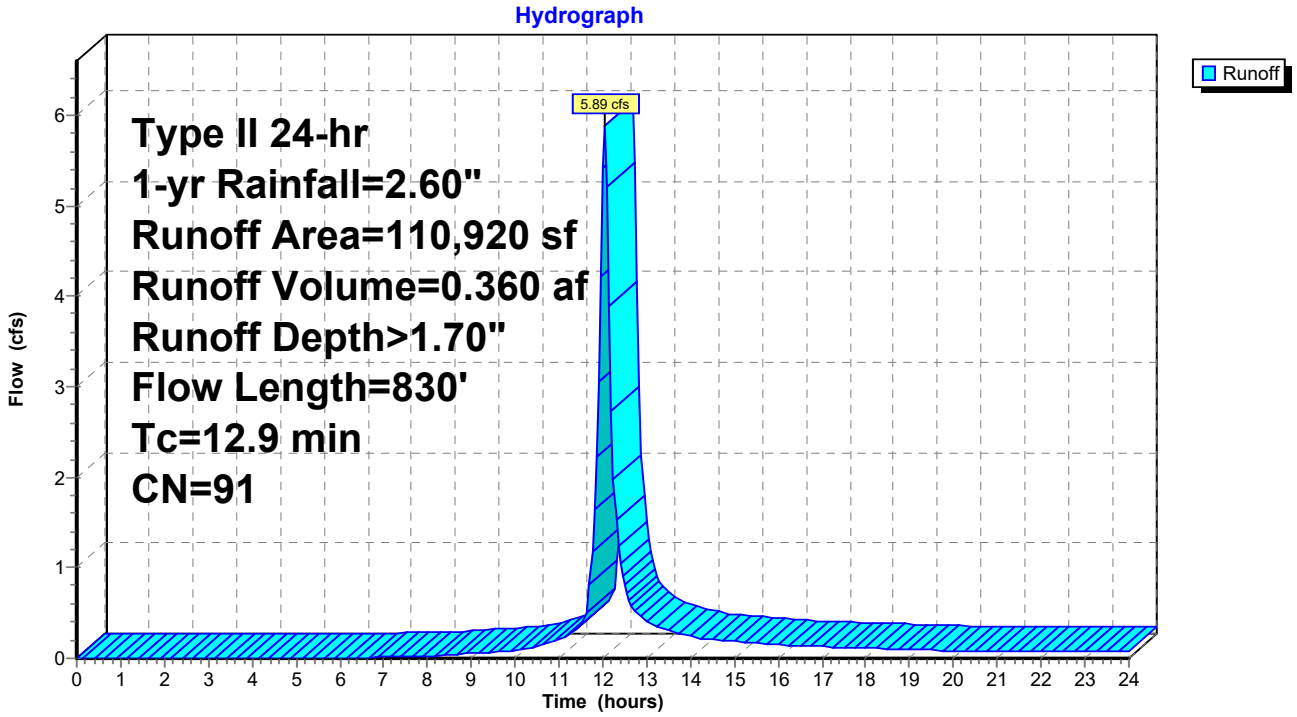
Runoff = 5.89 cfs @ 12.05 hrs, Volume= 0.360 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	59,605	98	Paved parking
	32,219	84	50-75% Grass cover, Fair, HSG D
	19,096	82	Woods/grass comb., Fair, HSG D
	110,920	91	Weighted Average
	51,315		46.26% Pervious Area
	59,605		53.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1600	0.18		**Sheet Flow, 100' woods @ 16%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.5	100	0.3700	3.04		**Shallow Concentrated Flow, 100' woods @ 37%** Woodland Kv= 5.0 fps
0.8	89	0.0674	1.82		**Shallow Concentrated Flow, 89' grass @ 6.7%** Short Grass Pasture Kv= 7.0 fps
1.2	170	0.0147	2.46		**Shallow Concentrated Flow, 170' gravel/paved @ 1.50%** Paved Kv= 20.3 fps
0.4	157	0.0175	6.00	4.71	**Pipe Channel, CB2 - CB3** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.3	100	0.0150	6.45	7.91	**Pipe Channel, CB6-CB7** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.2	66	0.0150	7.28	12.87	**Pipe Channel, CB9** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.1	48	0.0072	6.11	19.20	**Pipe Channel, CB10** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
12.9	830	Total			

Subcatchment PS1:



Summary for Subcatchment PS2:

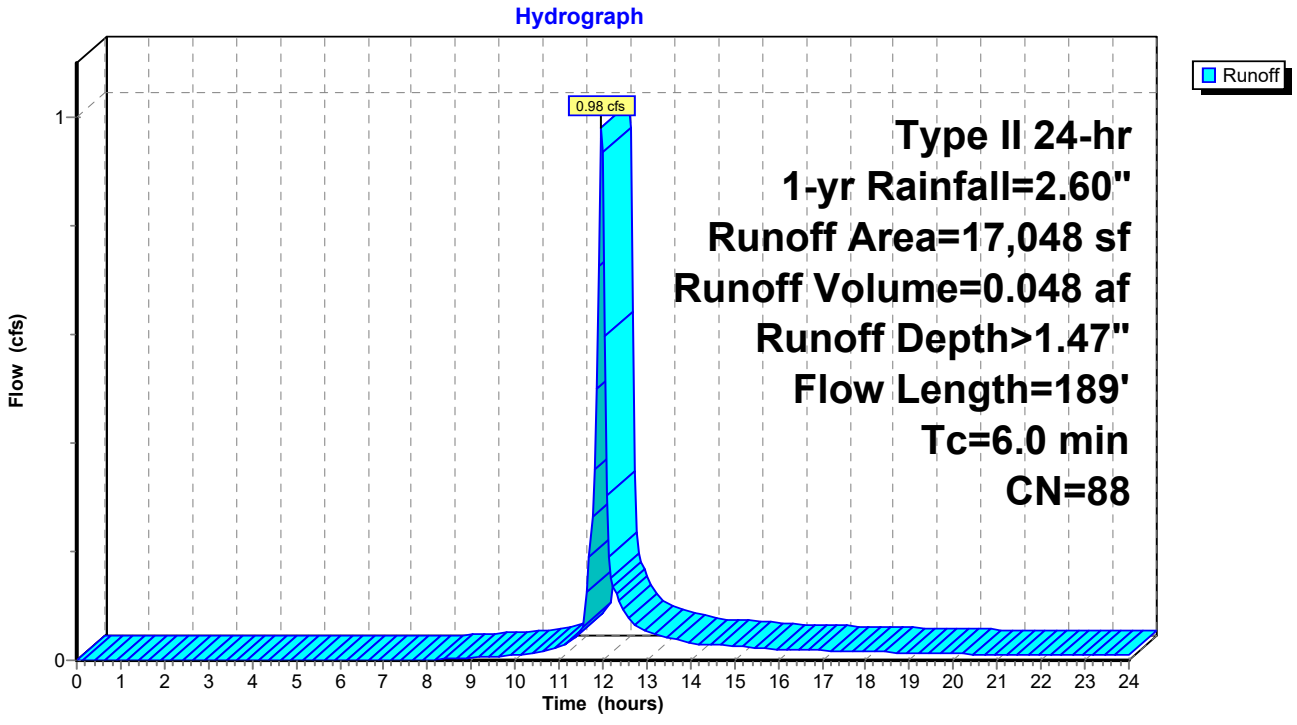
Runoff = 0.98 cfs @ 11.97 hrs, Volume= 0.048 af, Depth> 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	5,331	98	Paved parking
	11,717	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	17,048	88	Weighted Average
	11,717		68.73% Pervious Area
	5,331		31.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.03		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	89	0.0200	2.87		**Shallow Concentrated Flow, 89' PAVED** Paved Kv= 20.3 fps
2.1	189	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PS2:



Summary for Subcatchment PS3:

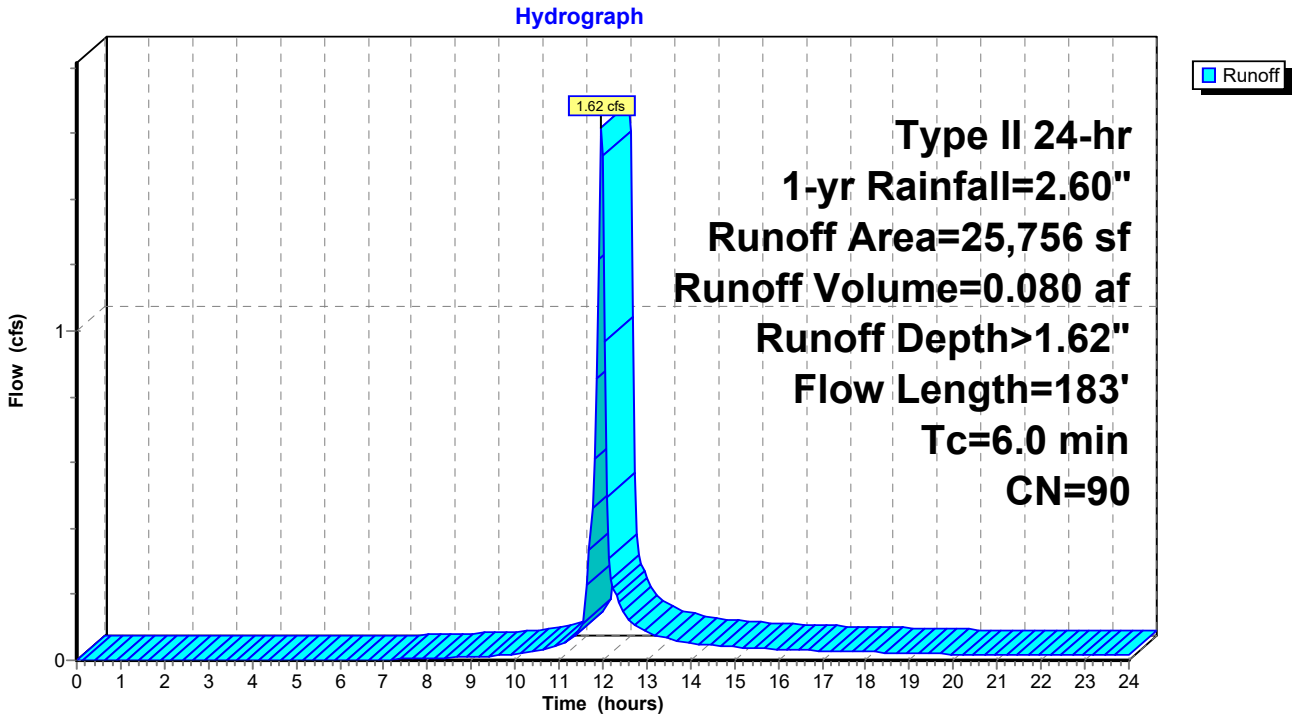
Runoff = 1.62 cfs @ 11.97 hrs, Volume= 0.080 af, Depth> 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	10,516	98	Paved parking
	15,240	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	25,756	90	Weighted Average
	15,240		59.17% Pervious Area
	10,516		40.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0330	1.67		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	83	0.0205	2.91		**Shallow Concentrated Flow, 83' PAVED** Paved Kv= 20.3 fps
1.5	183	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PS3:



Summary for Subcatchment PS4:

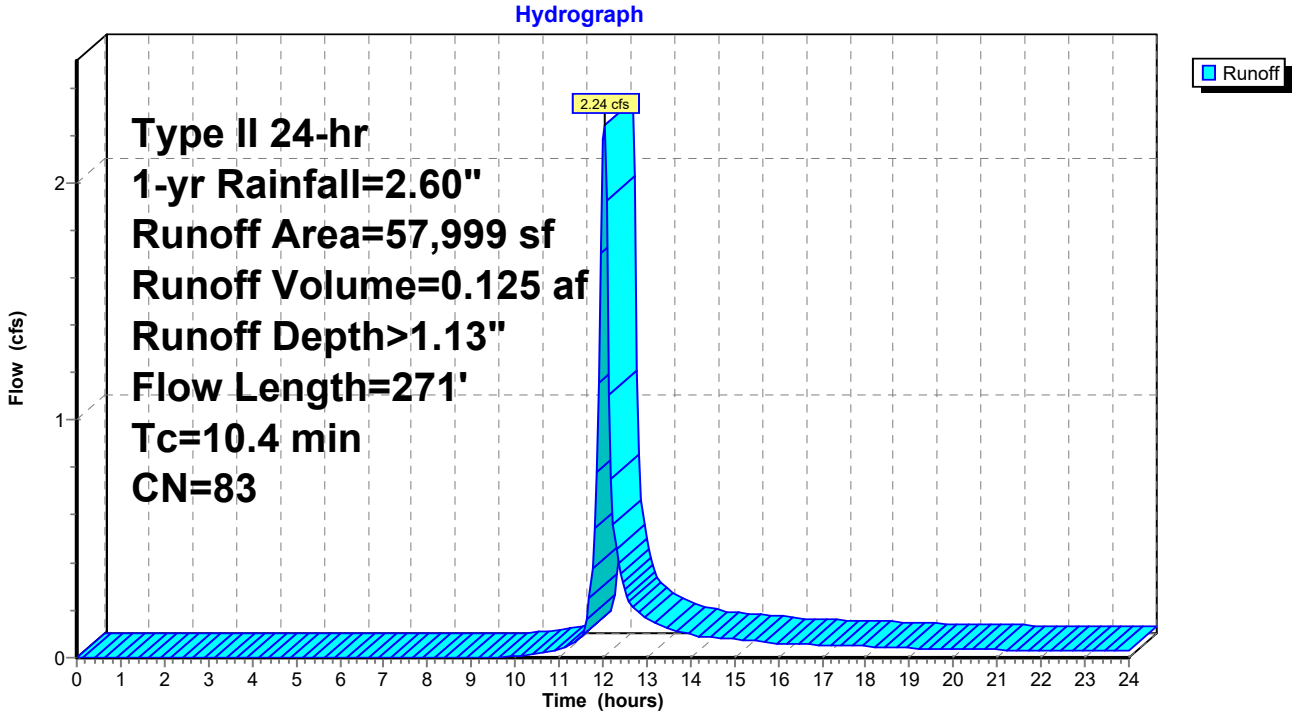
Runoff = 2.24 cfs @ 12.02 hrs, Volume= 0.125 af, Depth> 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

	Area (sf)	CN	Description
*	0	98	Paved parking
	25,732	84	50-75% Grass cover, Fair, HSG D
	32,267	82	Woods/grass comb., Fair, HSG D
	57,999	83	Weighted Average
	57,999		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1600	0.18		**Sheet Flow, 100' woods @ 16%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.6	81	0.2200	2.35		**Shallow Concentrated Flow, 81' woods @ 22%** Woodland Kv= 5.0 fps
0.4	90	0.3300	4.02		**Shallow Concentrated Flow, 90' grass @ 33%** Short Grass Pasture Kv= 7.0 fps
10.4	271	Total			

Subcatchment PS4:

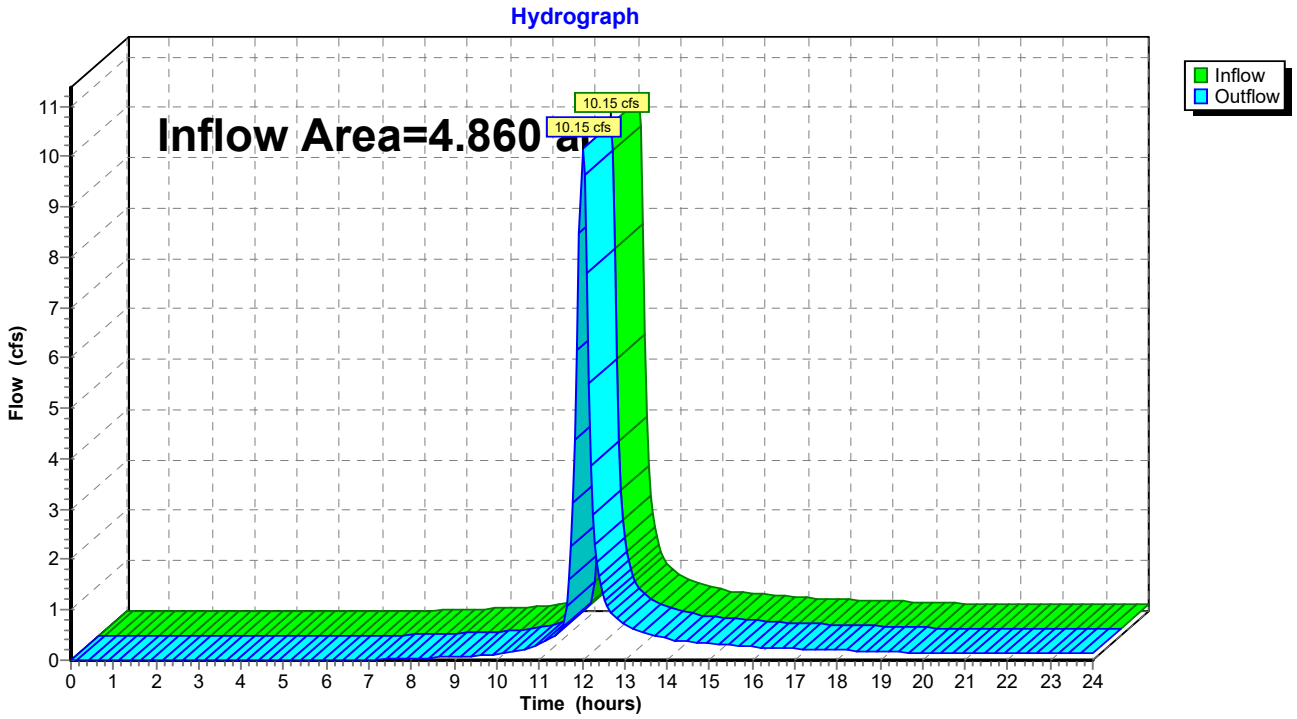


Summary for Reach DP1: EX CB 2

Inflow Area = 4.860 ac, 35.64% Impervious, Inflow Depth > 1.51" for 1-yr event
Inflow = 10.15 cfs @ 12.01 hrs, Volume= 0.613 af
Outflow = 10.15 cfs @ 12.01 hrs, Volume= 0.613 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: EX CB 2



Summary for Pond 1P: EX CB 1

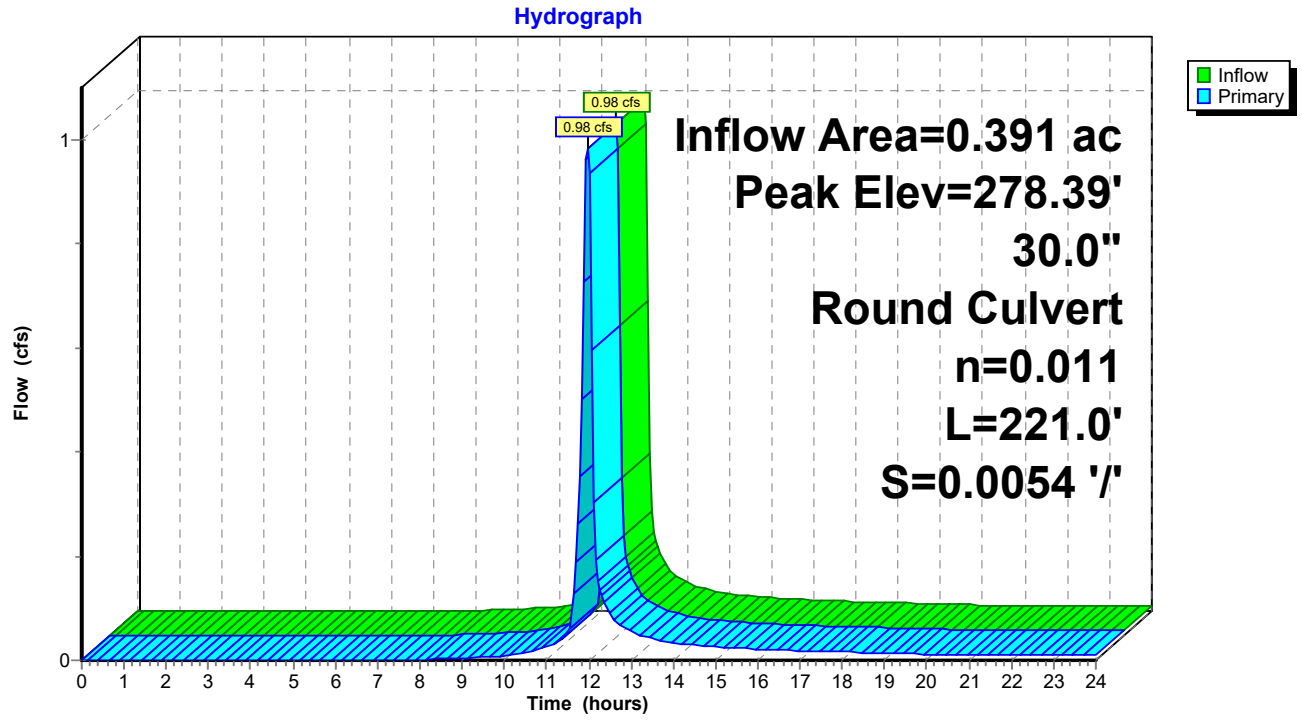
Inflow Area = 0.391 ac, 31.27% Impervious, Inflow Depth > 1.47" for 1-yr event
Inflow = 0.98 cfs @ 11.97 hrs, Volume= 0.048 af
Outflow = 0.98 cfs @ 11.97 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min
Primary = 0.98 cfs @ 11.97 hrs, Volume= 0.048 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.39' @ 11.97 hrs
Flood Elev= 288.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**30.0" Round Culvert** L= 221.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.00' / 276.80' S= 0.0054 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 4.91 sf

Primary OutFlow Max=0.95 cfs @ 11.97 hrs HW=278.38' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.95 cfs @ 3.03 fps)

Pond 1P: EX CB 1



Summary for Pond 2P: HYDRO 1

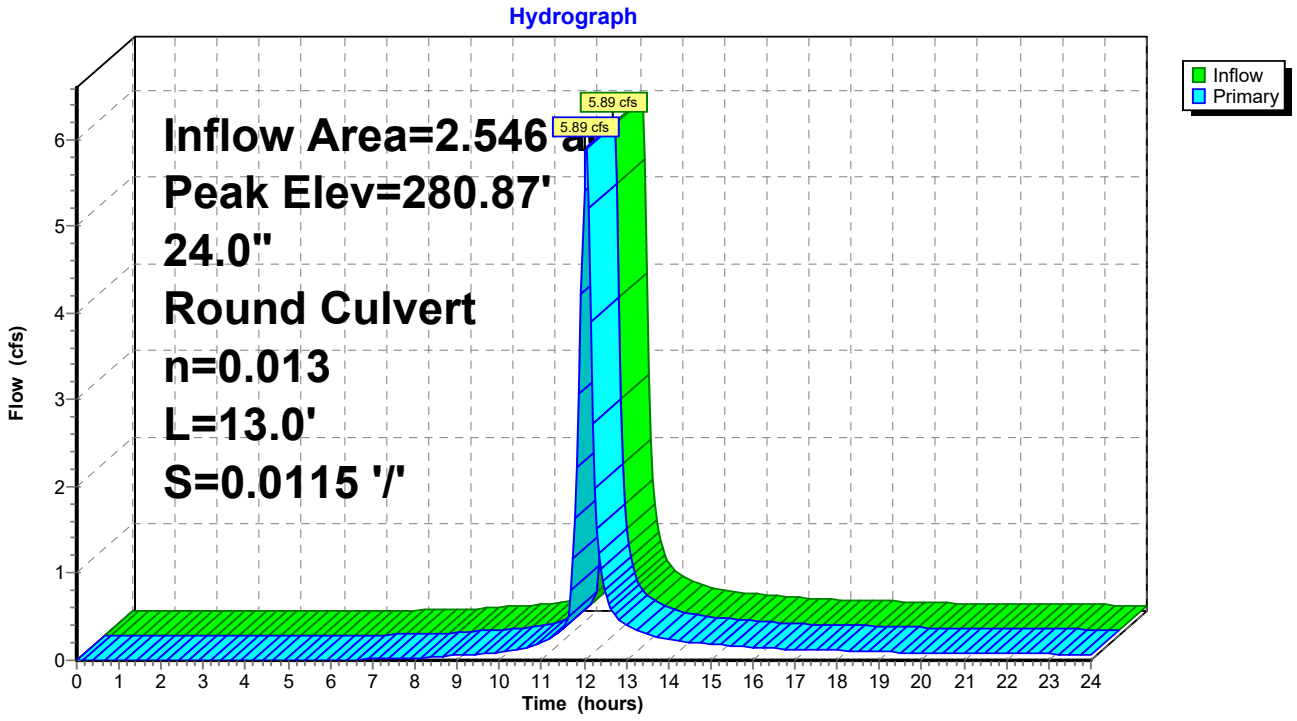
Inflow Area = 2.546 ac, 53.74% Impervious, Inflow Depth > 1.70" for 1-yr event
Inflow = 5.89 cfs @ 12.05 hrs, Volume= 0.360 af
Outflow = 5.89 cfs @ 12.05 hrs, Volume= 0.360 af, Atten= 0%, Lag= 0.0 min
Primary = 5.89 cfs @ 12.05 hrs, Volume= 0.360 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 280.87' @ 12.05 hrs
Flood Elev= 285.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.65'	**24.0" Round Culvert** L= 13.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 279.65' / 279.50' S= 0.0115 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.84 cfs @ 12.05 hrs HW=280.87' TW=280.19' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.84 cfs @ 4.18 fps)

Pond 2P: HYDRO 1



Summary for Pond 3P: MH2

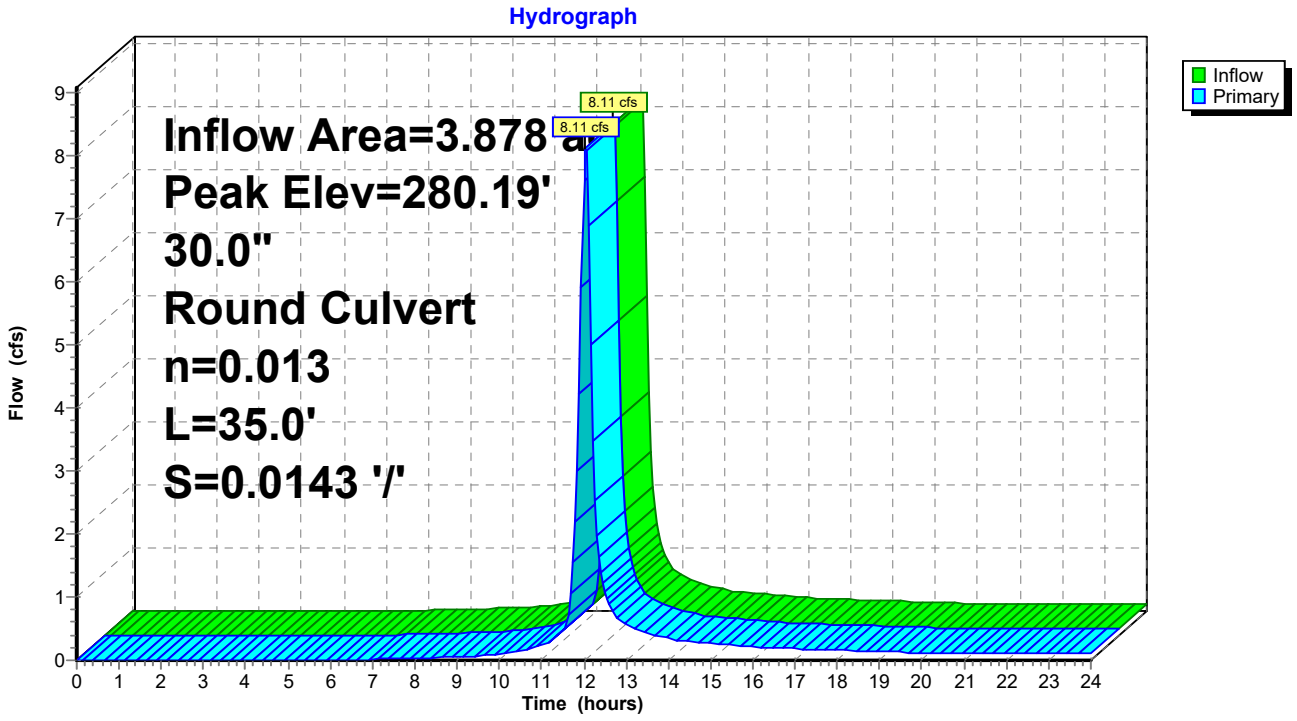
Inflow Area = 3.878 ac, 35.29% Impervious, Inflow Depth > 1.50" for 1-yr event
Inflow = 8.11 cfs @ 12.04 hrs, Volume= 0.485 af
Outflow = 8.11 cfs @ 12.04 hrs, Volume= 0.485 af, Atten= 0%, Lag= 0.0 min
Primary = 8.11 cfs @ 12.04 hrs, Volume= 0.485 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 280.19' @ 12.04 hrs
Flood Elev= 285.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.00'	**30.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 279.00' / 278.50' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=7.96 cfs @ 12.04 hrs HW=280.18' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.96 cfs @ 5.12 fps)

Pond 3P: MH2



Summary for Pond 4P: CB14

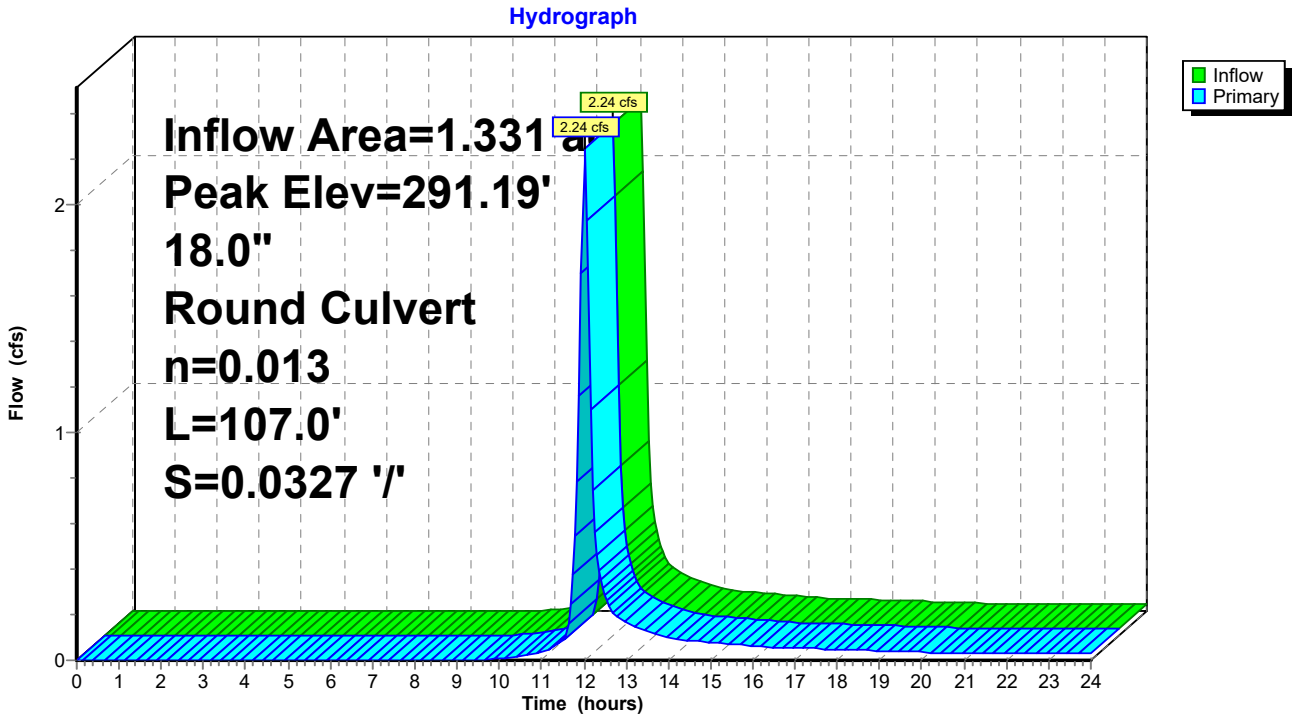
Inflow Area = 1.331 ac, 0.00% Impervious, Inflow Depth > 1.13" for 1-yr event
Inflow = 2.24 cfs @ 12.02 hrs, Volume= 0.125 af
Outflow = 2.24 cfs @ 12.02 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min
Primary = 2.24 cfs @ 12.02 hrs, Volume= 0.125 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 291.19' @ 12.02 hrs
Flood Elev= 295.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.50'	**18.0" Round Culvert** L= 107.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 290.50' / 287.00' S= 0.0327 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.18 cfs @ 12.02 hrs HW=291.18' TW=287.68' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.18 cfs @ 2.81 fps)

Pond 4P: CB14



Summary for Pond 5P: MH3

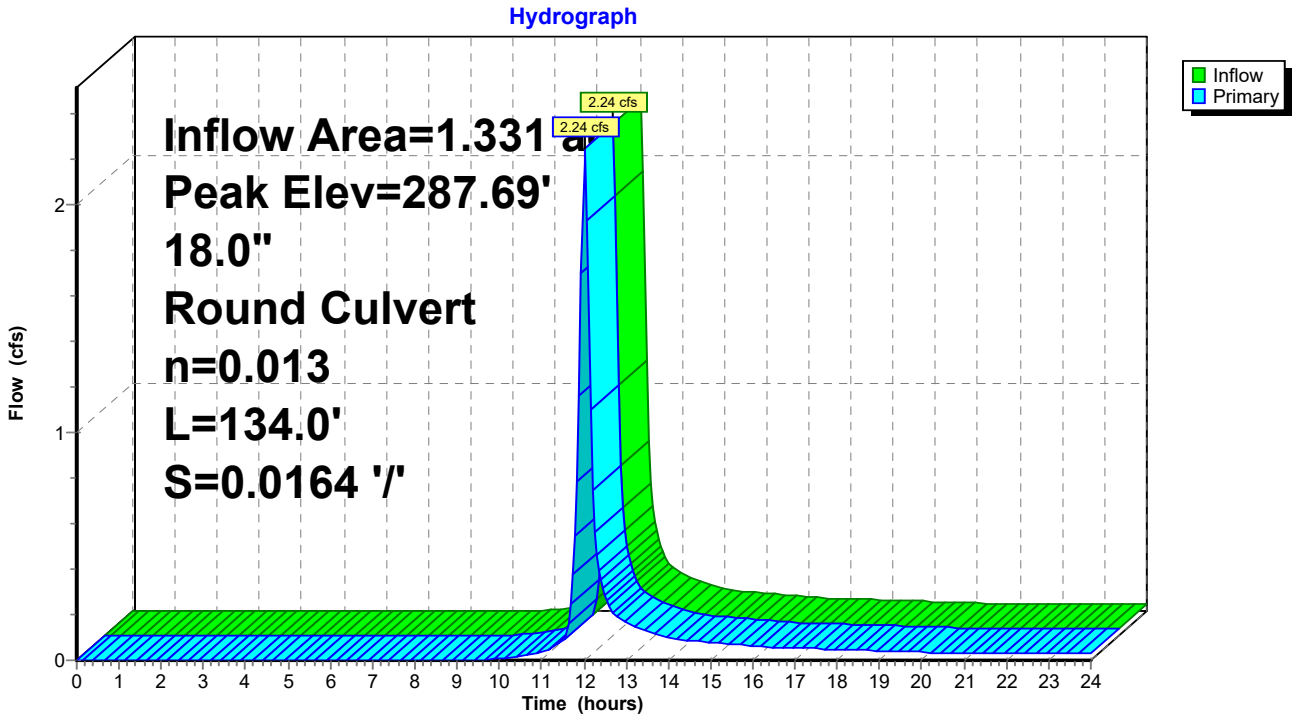
Inflow Area = 1.331 ac, 0.00% Impervious, Inflow Depth > 1.13" for 1-yr event
Inflow = 2.24 cfs @ 12.02 hrs, Volume= 0.125 af
Outflow = 2.24 cfs @ 12.02 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min
Primary = 2.24 cfs @ 12.02 hrs, Volume= 0.125 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 287.69' @ 12.02 hrs
Flood Elev= 292.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	287.00'	**18.0" Round Culvert** L= 134.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 287.00' / 284.80' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.18 cfs @ 12.02 hrs HW=287.68' TW=284.18' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.18 cfs @ 2.81 fps)

Pond 5P: MH3



Summary for Pond 6P: MH1

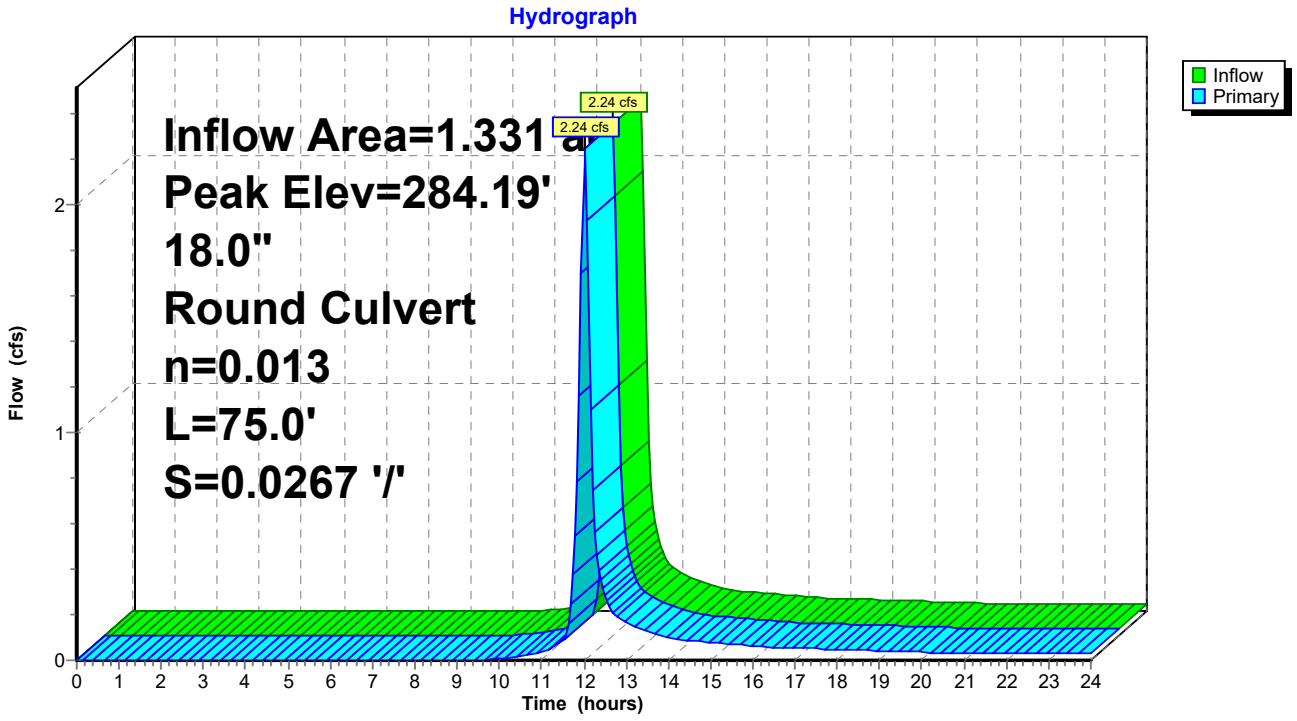
Inflow Area = 1.331 ac, 0.00% Impervious, Inflow Depth > 1.13" for 1-yr event
Inflow = 2.24 cfs @ 12.02 hrs, Volume= 0.125 af
Outflow = 2.24 cfs @ 12.02 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min
Primary = 2.24 cfs @ 12.02 hrs, Volume= 0.125 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 284.19' @ 12.02 hrs
Flood Elev= 289.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	283.50'	**18.0" Round Culvert** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 283.50' / 281.50' S= 0.0267 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.18 cfs @ 12.02 hrs HW=284.18' TW=280.17' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.18 cfs @ 2.81 fps)

Pond 6P: MH1



Summary for Pond 7P: CB13

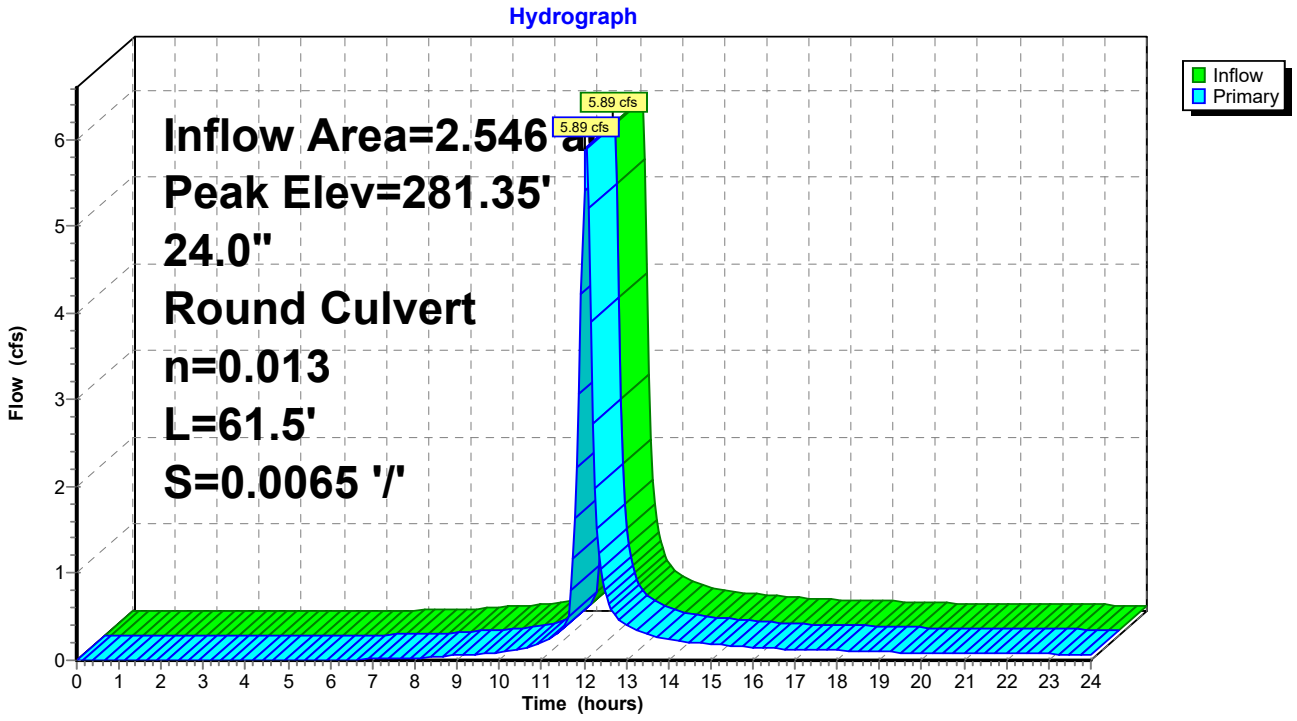
Inflow Area = 2.546 ac, 53.74% Impervious, Inflow Depth > 1.70" for 1-yr event
Inflow = 5.89 cfs @ 12.05 hrs, Volume= 0.360 af
Outflow = 5.89 cfs @ 12.05 hrs, Volume= 0.360 af, Atten= 0%, Lag= 0.0 min
Primary = 5.89 cfs @ 12.05 hrs, Volume= 0.360 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 281.35' @ 12.06 hrs
Flood Elev= 286.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.05'	**24.0" Round Culvert** L= 61.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 280.05' / 279.65' S= 0.0065 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.46 cfs @ 12.05 hrs HW=281.34' TW=280.87' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.46 cfs @ 3.64 fps)

Pond 7P: CB13



Summary for Subcatchment PS1:

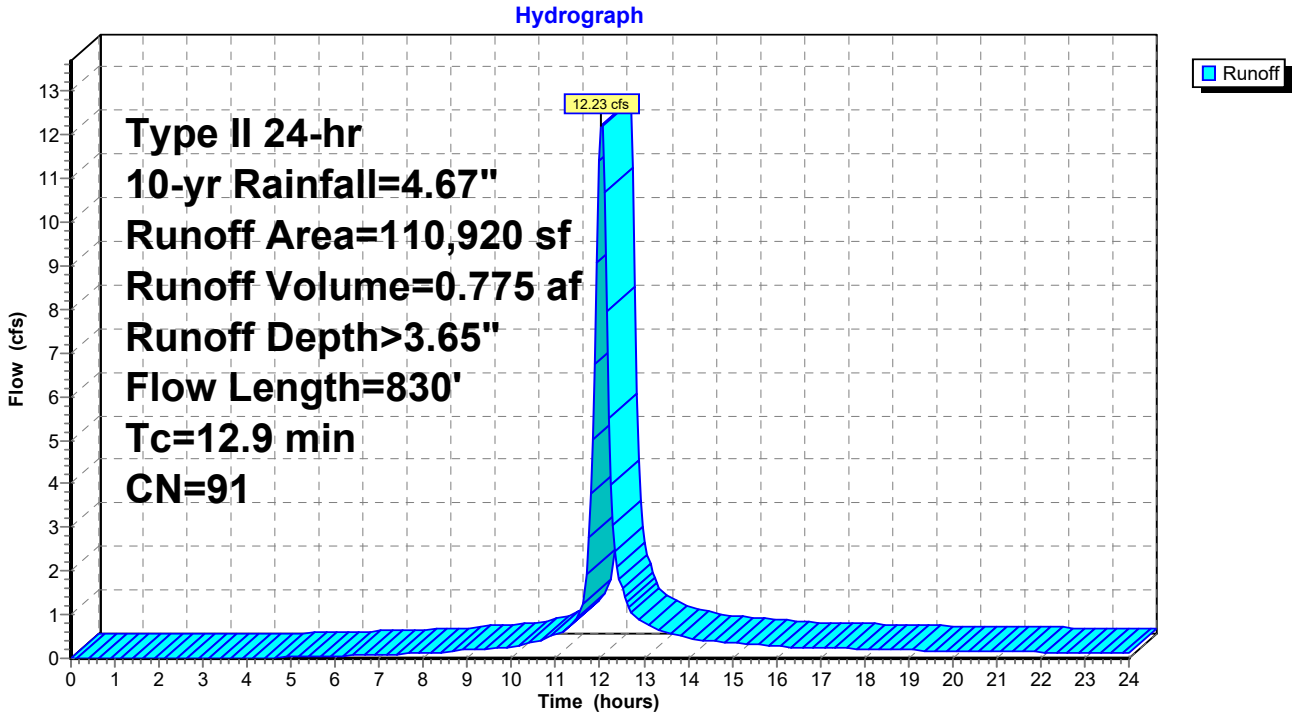
Runoff = 12.23 cfs @ 12.04 hrs, Volume= 0.775 af, Depth> 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.67"

	Area (sf)	CN	Description
*	59,605	98	Paved parking
	32,219	84	50-75% Grass cover, Fair, HSG D
	19,096	82	Woods/grass comb., Fair, HSG D
	110,920	91	Weighted Average
	51,315		46.26% Pervious Area
	59,605		53.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1600	0.18		**Sheet Flow, 100' woods @ 16%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.5	100	0.3700	3.04		**Shallow Concentrated Flow, 100' woods @ 37%** Woodland Kv= 5.0 fps
0.8	89	0.0674	1.82		**Shallow Concentrated Flow, 89' grass @ 6.7%** Short Grass Pasture Kv= 7.0 fps
1.2	170	0.0147	2.46		**Shallow Concentrated Flow, 170' gravel/paved @ 1.50%** Paved Kv= 20.3 fps
0.4	157	0.0175	6.00	4.71	**Pipe Channel, CB2 - CB3** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.3	100	0.0150	6.45	7.91	**Pipe Channel, CB6-CB7** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.2	66	0.0150	7.28	12.87	**Pipe Channel, CB9** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.1	48	0.0072	6.11	19.20	**Pipe Channel, CB10** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
12.9	830	Total			

Subcatchment PS1:



Summary for Subcatchment PS2:

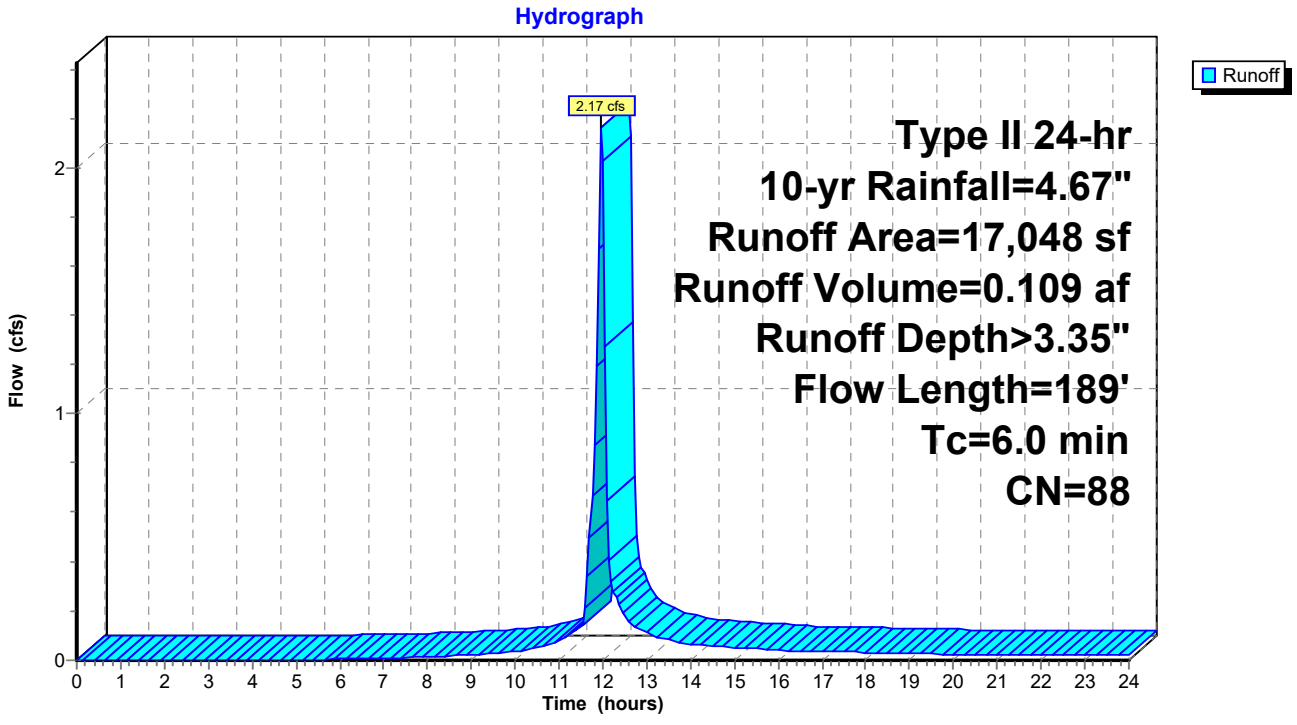
Runoff = 2.17 cfs @ 11.97 hrs, Volume= 0.109 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.67"

	Area (sf)	CN	Description
*	5,331	98	Paved parking
	11,717	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	17,048	88	Weighted Average
	11,717		68.73% Pervious Area
	5,331		31.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.03		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	89	0.0200	2.87		**Shallow Concentrated Flow, 89' PAVED** Paved Kv= 20.3 fps
2.1	189	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PS2:



Summary for Subcatchment PS3:

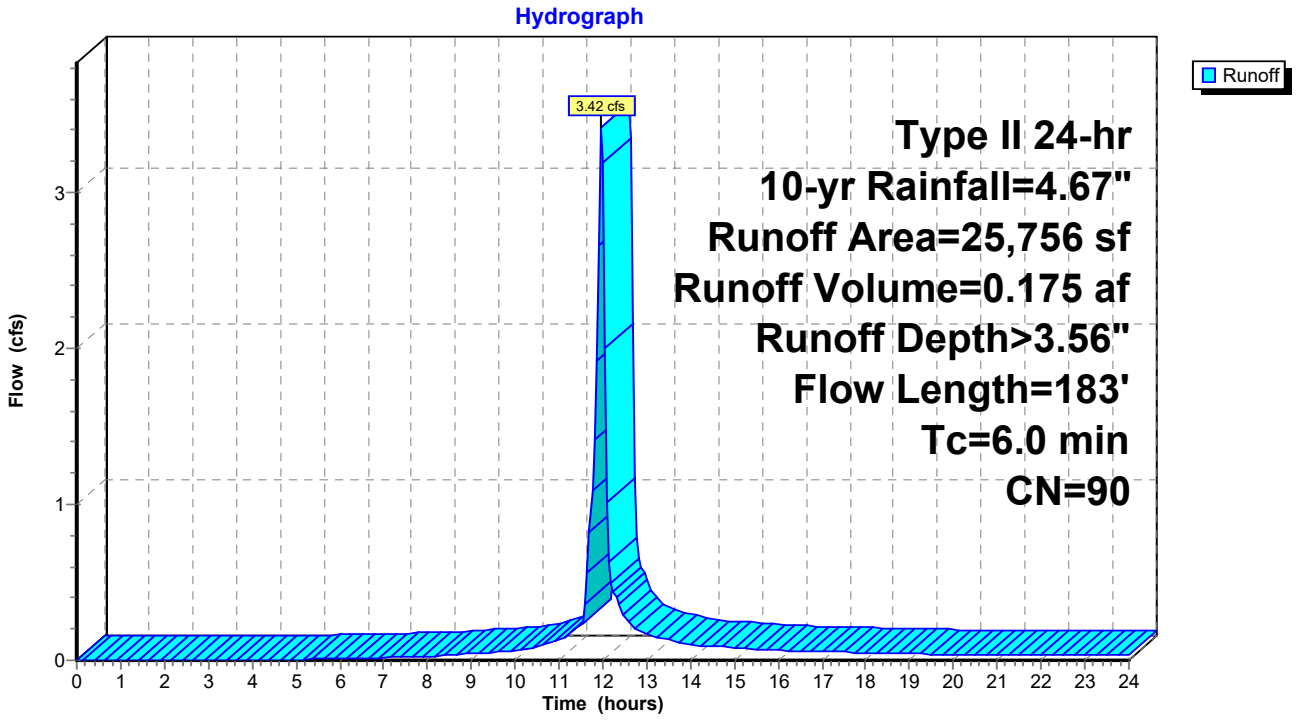
Runoff = 3.42 cfs @ 11.96 hrs, Volume= 0.175 af, Depth> 3.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.67"

	Area (sf)	CN	Description
*	10,516	98	Paved parking
	15,240	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	25,756	90	Weighted Average
	15,240		59.17% Pervious Area
	10,516		40.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0330	1.67		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	83	0.0205	2.91		**Shallow Concentrated Flow, 83' PAVED** Paved Kv= 20.3 fps
1.5	183	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PS3:



Summary for Subcatchment PS4:

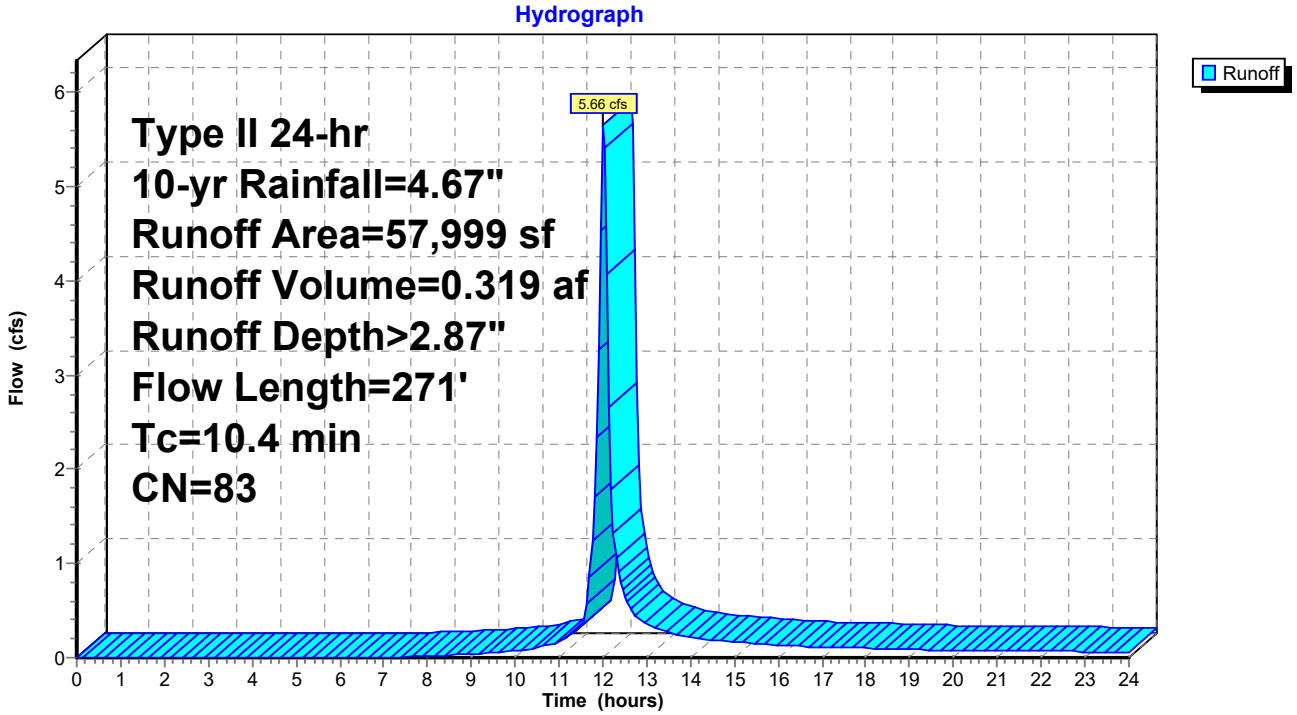
Runoff = 5.66 cfs @ 12.02 hrs, Volume= 0.319 af, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.67"

	Area (sf)	CN	Description
*	0	98	Paved parking
	25,732	84	50-75% Grass cover, Fair, HSG D
	32,267	82	Woods/grass comb., Fair, HSG D
	57,999	83	Weighted Average
	57,999		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1600	0.18		**Sheet Flow, 100' woods @ 16%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.6	81	0.2200	2.35		**Shallow Concentrated Flow, 81' woods @ 22%** Woodland Kv= 5.0 fps
0.4	90	0.3300	4.02		**Shallow Concentrated Flow, 90' grass @ 33%** Short Grass Pasture Kv= 7.0 fps
10.4	271	Total			

Subcatchment PS4:

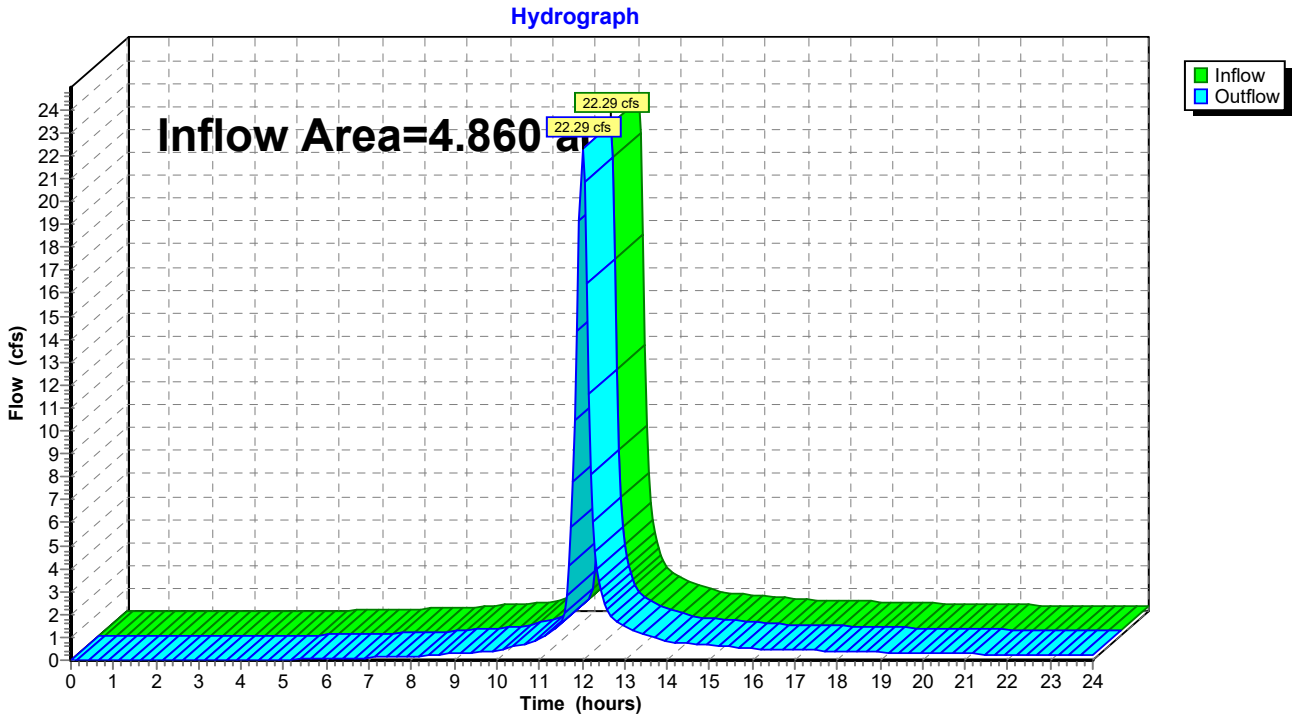


Summary for Reach DP1: EX CB 2

Inflow Area = 4.860 ac, 35.64% Impervious, Inflow Depth > 3.40" for 10-yr event
Inflow = 22.29 cfs @ 12.01 hrs, Volume= 1.378 af
Outflow = 22.29 cfs @ 12.01 hrs, Volume= 1.378 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: EX CB 2



Summary for Pond 1P: EX CB 1

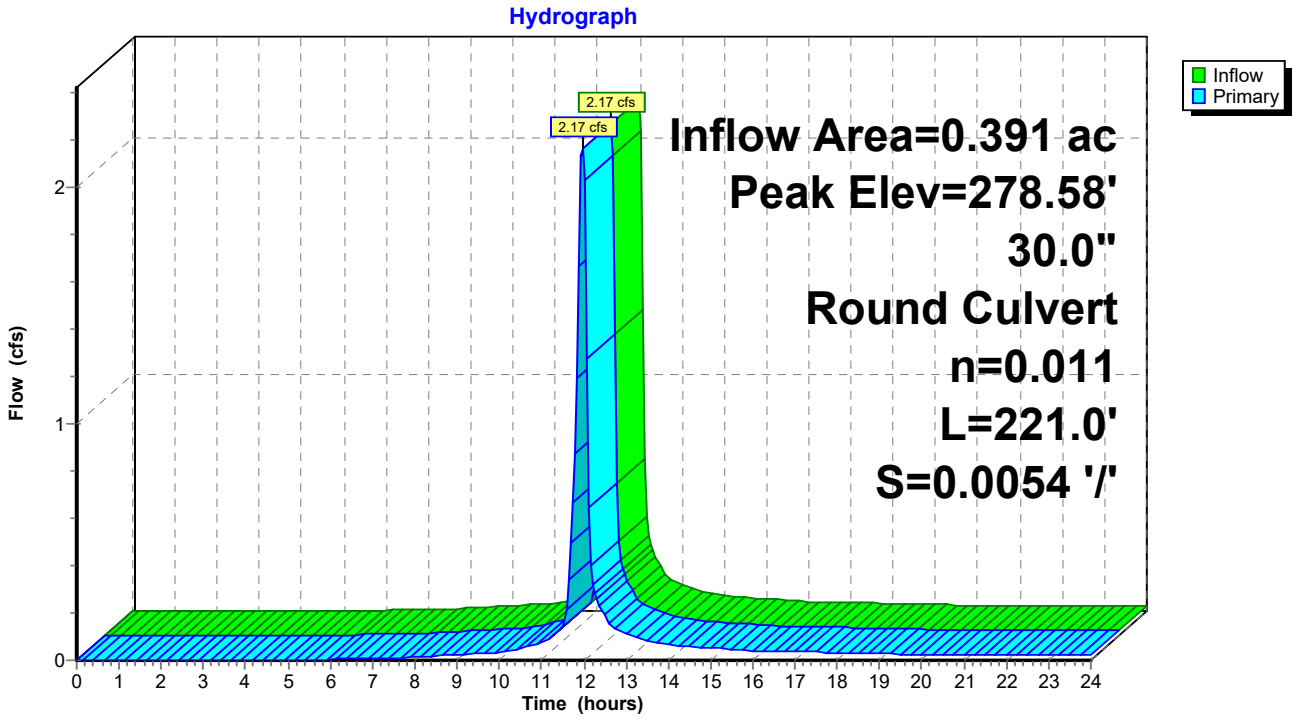
Inflow Area = 0.391 ac, 31.27% Impervious, Inflow Depth > 3.35" for 10-yr event
Inflow = 2.17 cfs @ 11.97 hrs, Volume= 0.109 af
Outflow = 2.17 cfs @ 11.97 hrs, Volume= 0.109 af, Atten= 0%, Lag= 0.0 min
Primary = 2.17 cfs @ 11.97 hrs, Volume= 0.109 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.58' @ 11.97 hrs
Flood Elev= 288.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**30.0" Round Culvert** L= 221.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.00' / 276.80' S= 0.0054 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 4.91 sf

Primary OutFlow Max=2.10 cfs @ 11.97 hrs HW=278.57' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.10 cfs @ 3.75 fps)

Pond 1P: EX CB 1



Summary for Pond 2P: HYDRO 1

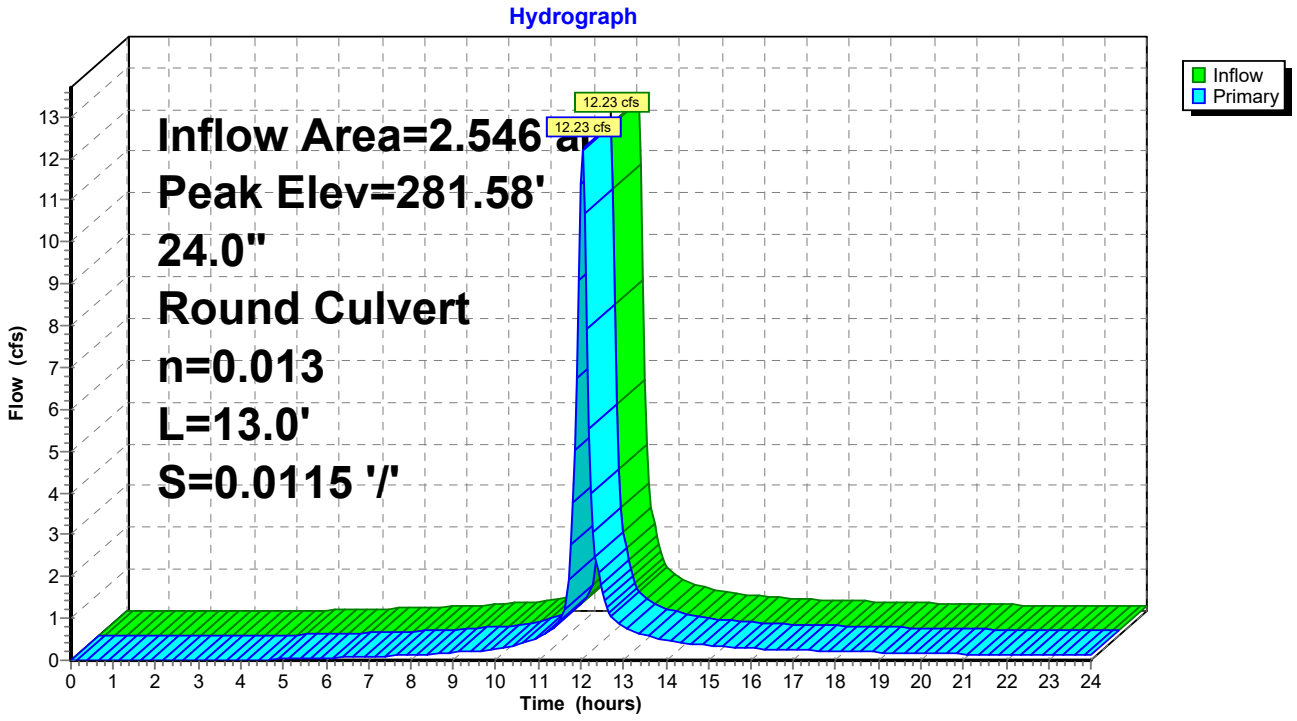
Inflow Area = 2.546 ac, 53.74% Impervious, Inflow Depth > 3.65" for 10-yr event
Inflow = 12.23 cfs @ 12.04 hrs, Volume= 0.775 af
Outflow = 12.23 cfs @ 12.04 hrs, Volume= 0.775 af, Atten= 0%, Lag= 0.0 min
Primary = 12.23 cfs @ 12.04 hrs, Volume= 0.775 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 281.58' @ 12.05 hrs
Flood Elev= 285.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.65'	**24.0" Round Culvert** L= 13.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 279.65' / 279.50' S= 0.0115 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=11.93 cfs @ 12.04 hrs HW=281.57' TW=280.93' (Dynamic Tailwater)
1=Culvert (Inlet Controls 11.93 cfs @ 3.85 fps)

Pond 2P: HYDRO 1



Summary for Pond 3P: MH2

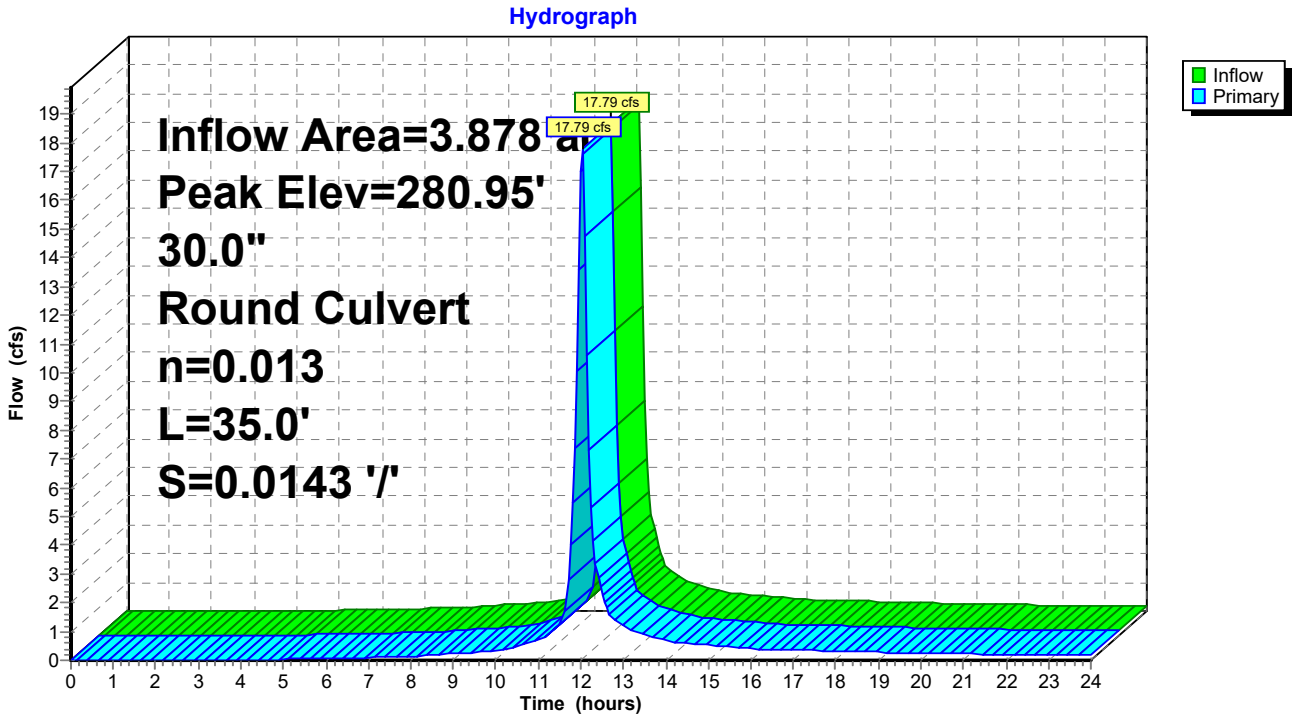
Inflow Area = 3.878 ac, 35.29% Impervious, Inflow Depth > 3.38" for 10-yr event
Inflow = 17.79 cfs @ 12.03 hrs, Volume= 1.094 af
Outflow = 17.79 cfs @ 12.03 hrs, Volume= 1.094 af, Atten= 0%, Lag= 0.0 min
Primary = 17.79 cfs @ 12.03 hrs, Volume= 1.094 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 280.95' @ 12.03 hrs
Flood Elev= 285.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.00'	**30.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 279.00' / 278.50' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=17.41 cfs @ 12.03 hrs HW=280.92' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 17.41 cfs @ 5.94 fps)

Pond 3P: MH2



Summary for Pond 4P: CB14

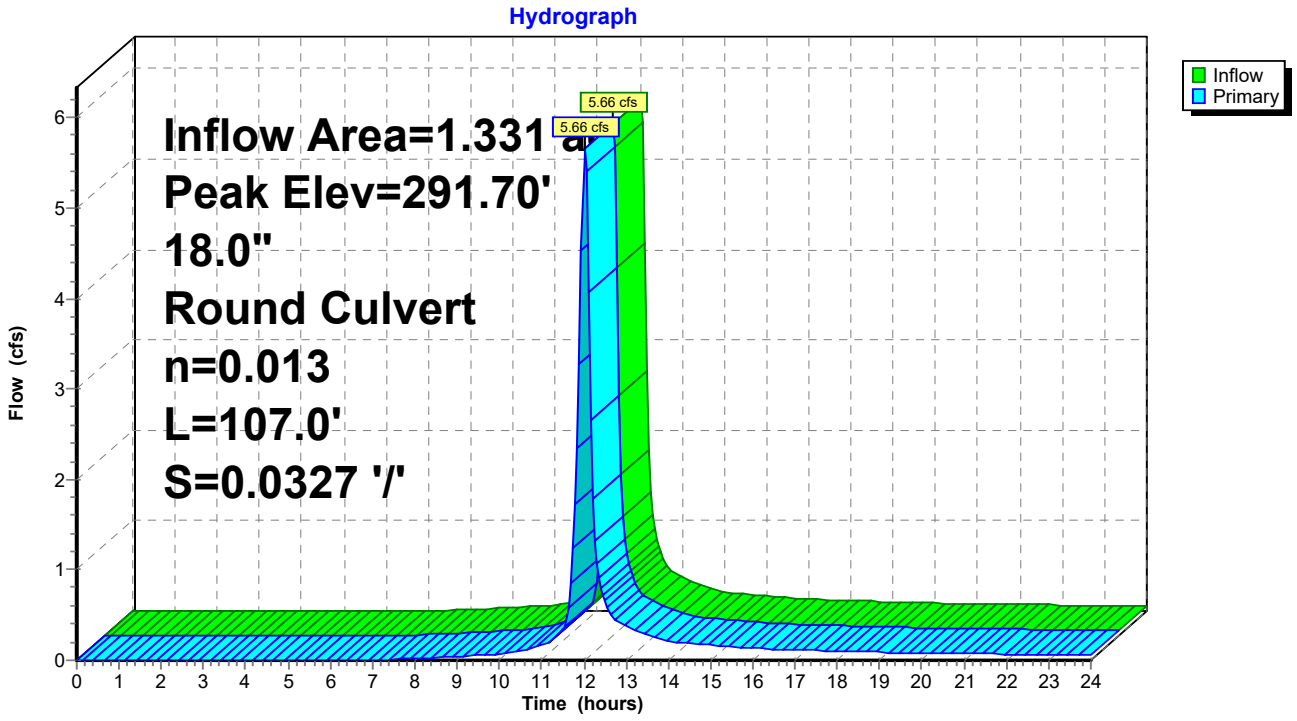
Inflow Area = 1.331 ac, 0.00% Impervious, Inflow Depth > 2.87" for 10-yr event
Inflow = 5.66 cfs @ 12.02 hrs, Volume= 0.319 af
Outflow = 5.66 cfs @ 12.02 hrs, Volume= 0.319 af, Atten= 0%, Lag= 0.0 min
Primary = 5.66 cfs @ 12.02 hrs, Volume= 0.319 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 291.70' @ 12.02 hrs
Flood Elev= 295.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.50'	**18.0" Round Culvert** L= 107.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 290.50' / 287.00' S= 0.0327 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.52 cfs @ 12.02 hrs HW=291.68' TW=288.18' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.52 cfs @ 3.70 fps)

Pond 4P: CB14



Summary for Pond 5P: MH3

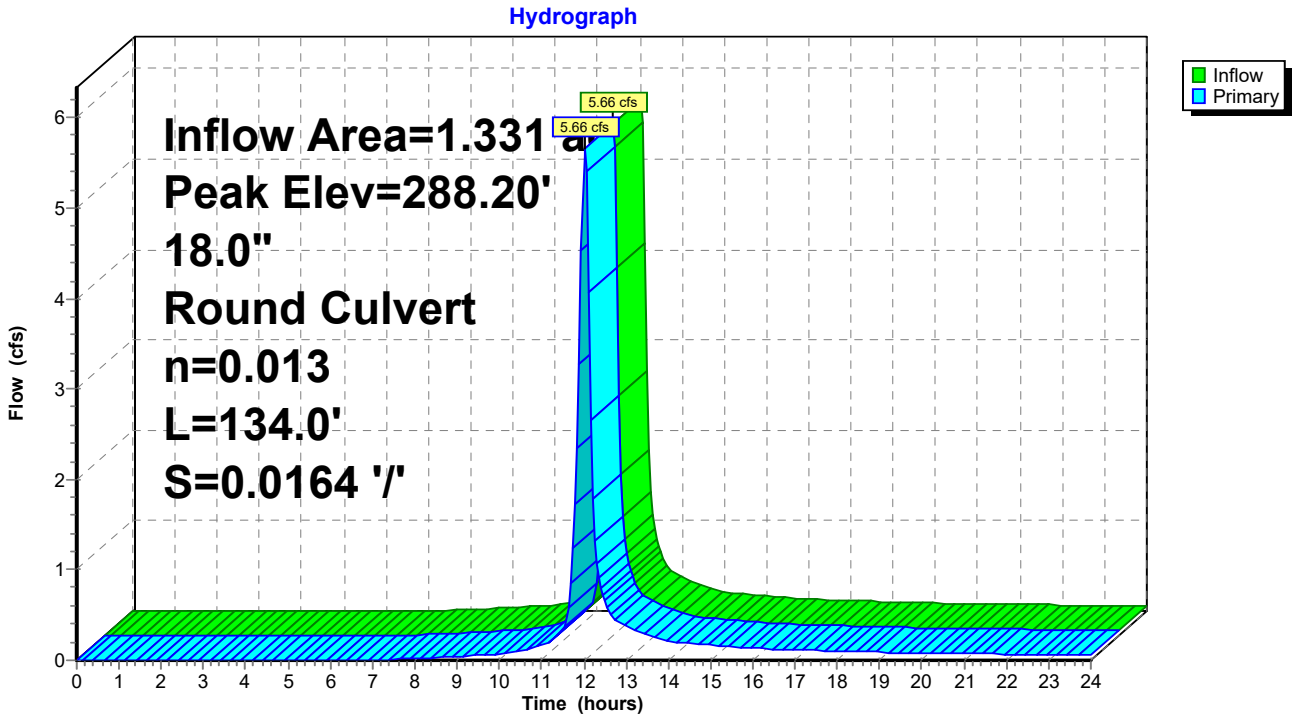
Inflow Area = 1.331 ac, 0.00% Impervious, Inflow Depth > 2.87" for 10-yr event
Inflow = 5.66 cfs @ 12.02 hrs, Volume= 0.319 af
Outflow = 5.66 cfs @ 12.02 hrs, Volume= 0.319 af, Atten= 0%, Lag= 0.0 min
Primary = 5.66 cfs @ 12.02 hrs, Volume= 0.319 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 288.20' @ 12.02 hrs
Flood Elev= 292.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	287.00'	**18.0" Round Culvert** L= 134.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 287.00' / 284.80' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.52 cfs @ 12.02 hrs HW=288.18' TW=284.68' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.52 cfs @ 3.70 fps)

Pond 5P: MH3



Summary for Pond 6P: MH1

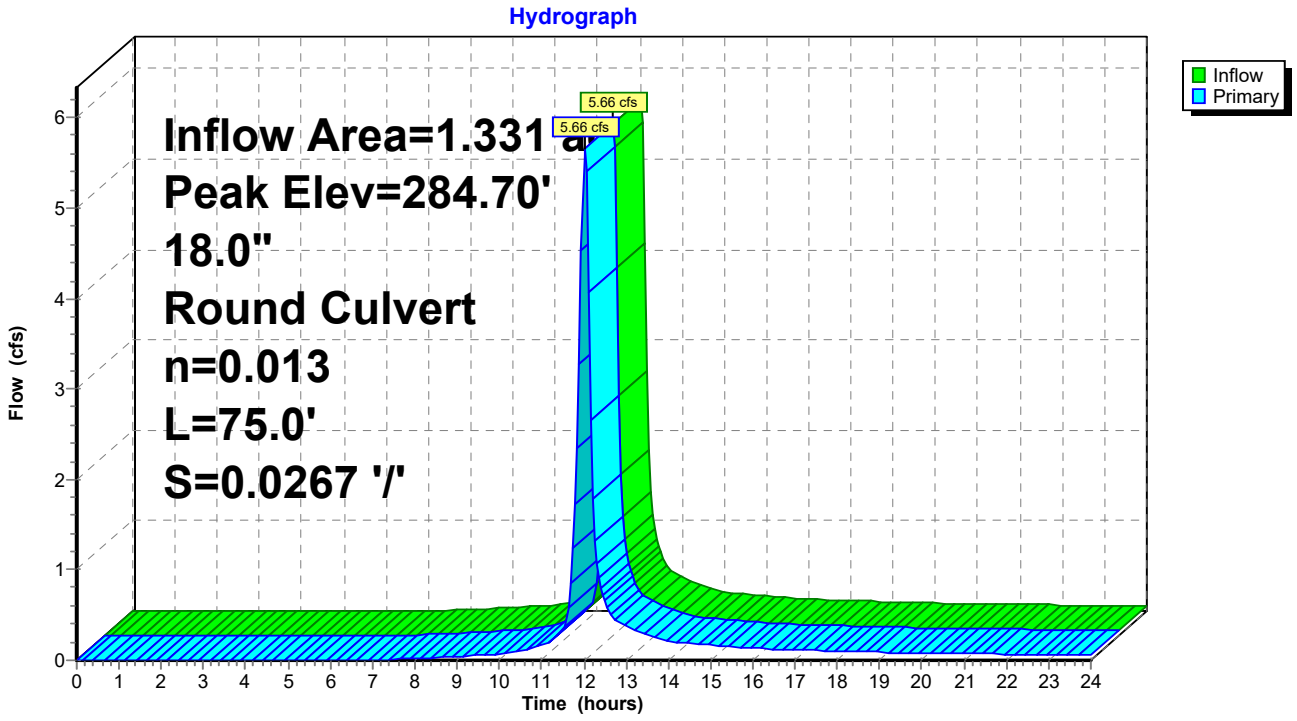
Inflow Area = 1.331 ac, 0.00% Impervious, Inflow Depth > 2.87" for 10-yr event
Inflow = 5.66 cfs @ 12.02 hrs, Volume= 0.319 af
Outflow = 5.66 cfs @ 12.02 hrs, Volume= 0.319 af, Atten= 0%, Lag= 0.0 min
Primary = 5.66 cfs @ 12.02 hrs, Volume= 0.319 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 284.70' @ 12.02 hrs
Flood Elev= 289.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	283.50'	**18.0" Round Culvert** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 283.50' / 281.50' S= 0.0267 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.52 cfs @ 12.02 hrs HW=284.68' TW=280.91' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.52 cfs @ 3.70 fps)

Pond 6P: MH1



Summary for Pond 7P: CB13

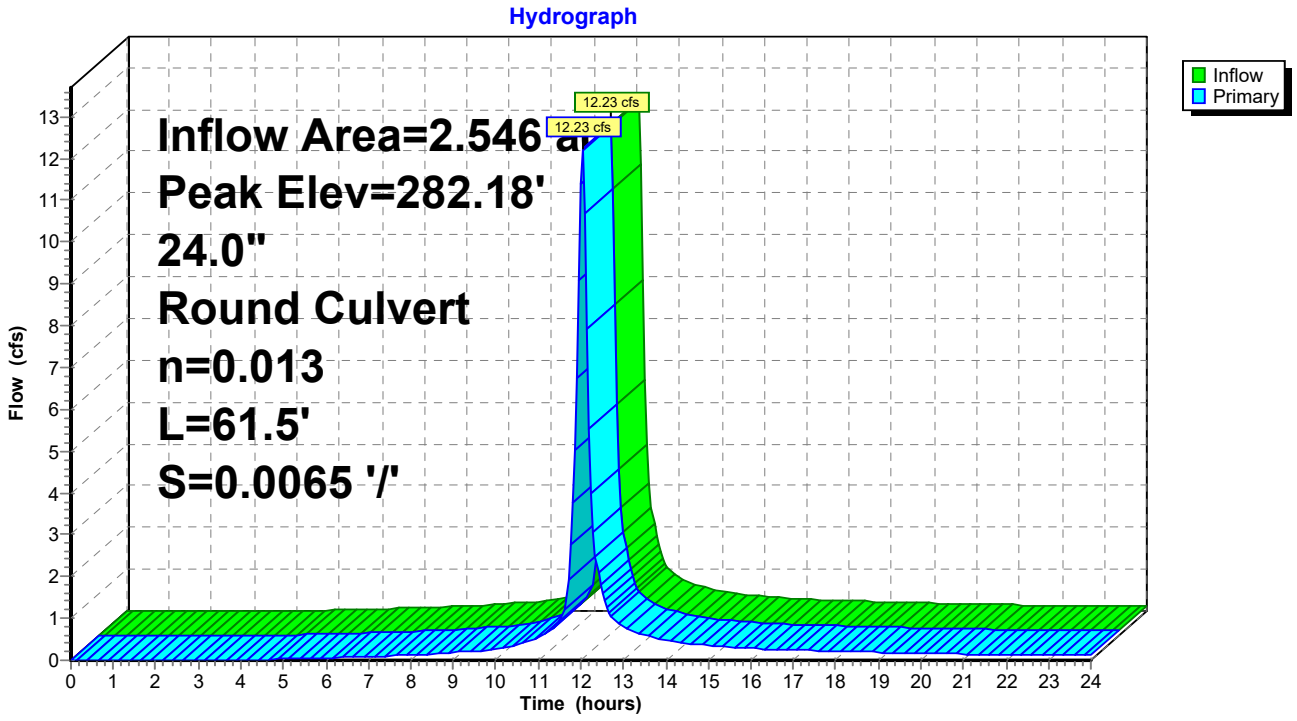
Inflow Area = 2.546 ac, 53.74% Impervious, Inflow Depth > 3.65" for 10-yr event
Inflow = 12.23 cfs @ 12.04 hrs, Volume= 0.775 af
Outflow = 12.23 cfs @ 12.04 hrs, Volume= 0.775 af, Atten= 0%, Lag= 0.0 min
Primary = 12.23 cfs @ 12.04 hrs, Volume= 0.775 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 282.18' @ 12.07 hrs
Flood Elev= 286.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.05'	**24.0" Round Culvert** L= 61.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 280.05' / 279.65' S= 0.0065 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=11.05 cfs @ 12.04 hrs HW=282.14' TW=281.57' (Dynamic Tailwater)
↳**1=Culvert** (Outlet Controls 11.05 cfs @ 4.19 fps)

Pond 7P: CB13



Summary for Subcatchment PS1:

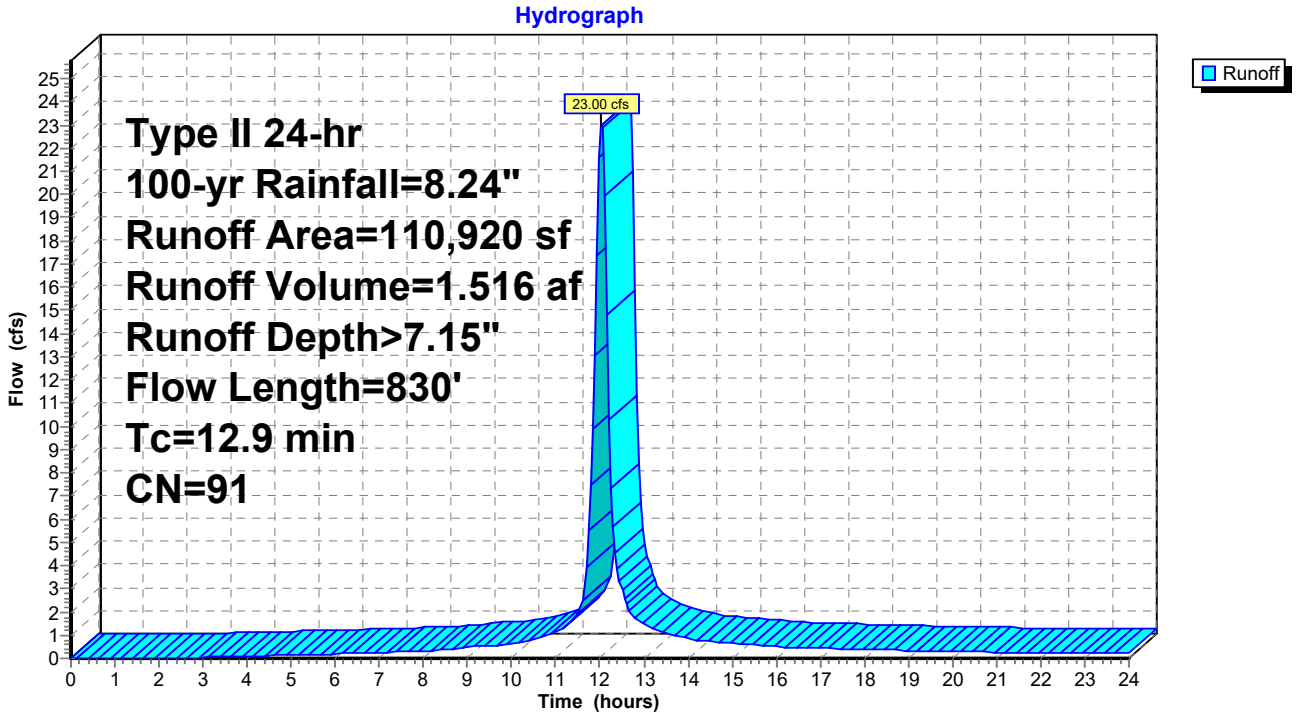
Runoff = 23.00 cfs @ 12.04 hrs, Volume= 1.516 af, Depth> 7.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.24"

	Area (sf)	CN	Description
*	59,605	98	Paved parking
	32,219	84	50-75% Grass cover, Fair, HSG D
	19,096	82	Woods/grass comb., Fair, HSG D
	110,920	91	Weighted Average
	51,315		46.26% Pervious Area
	59,605		53.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1600	0.18		**Sheet Flow, 100' woods @ 16%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.5	100	0.3700	3.04		**Shallow Concentrated Flow, 100' woods @ 37%** Woodland Kv= 5.0 fps
0.8	89	0.0674	1.82		**Shallow Concentrated Flow, 89' grass @ 6.7%** Short Grass Pasture Kv= 7.0 fps
1.2	170	0.0147	2.46		**Shallow Concentrated Flow, 170' gravel/paved @ 1.50%** Paved Kv= 20.3 fps
0.4	157	0.0175	6.00	4.71	**Pipe Channel, CB2 - CB3** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.3	100	0.0150	6.45	7.91	**Pipe Channel, CB6-CB7** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.2	66	0.0150	7.28	12.87	**Pipe Channel, CB9** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.1	48	0.0072	6.11	19.20	**Pipe Channel, CB10** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
12.9	830	Total			

Subcatchment PS1:



Summary for Subcatchment PS2:

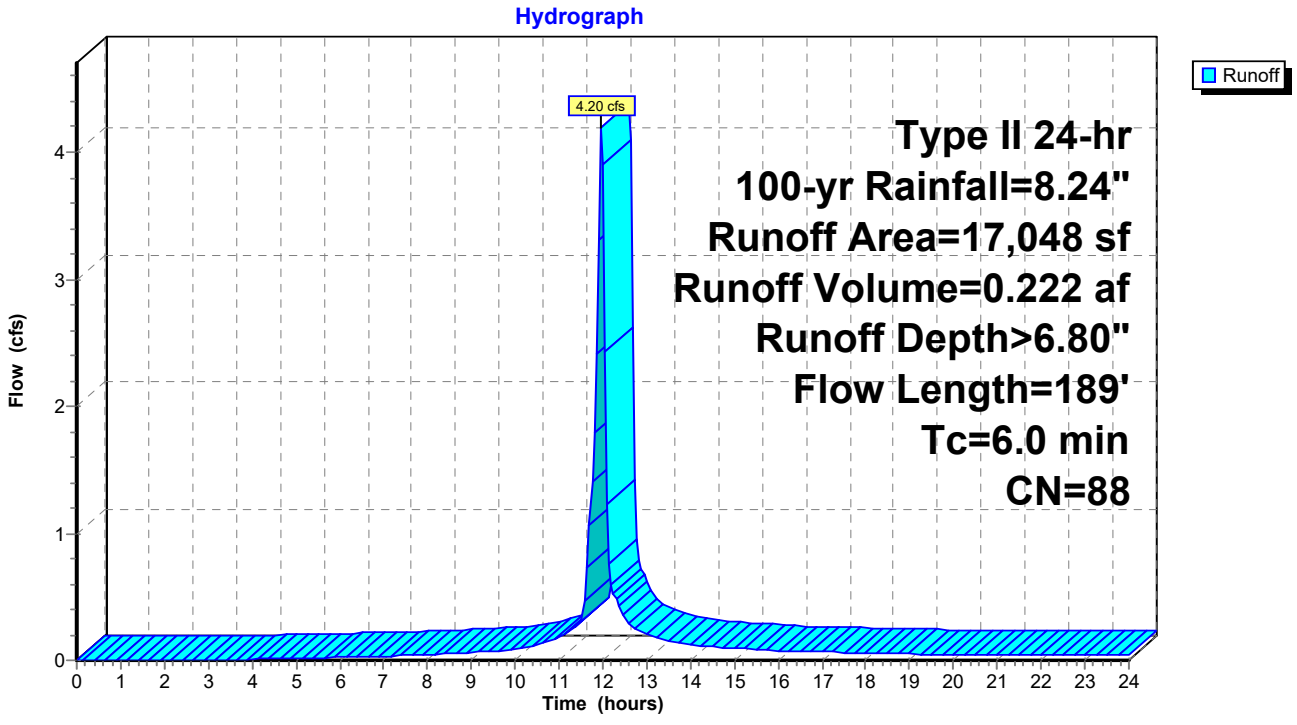
Runoff = 4.20 cfs @ 11.96 hrs, Volume= 0.222 af, Depth> 6.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.24"

	Area (sf)	CN	Description
*	5,331	98	Paved parking
	11,717	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	17,048	88	Weighted Average
	11,717		68.73% Pervious Area
	5,331		31.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.03		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	89	0.0200	2.87		**Shallow Concentrated Flow, 89' PAVED** Paved Kv= 20.3 fps
2.1	189	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PS2:



Summary for Subcatchment PS3:

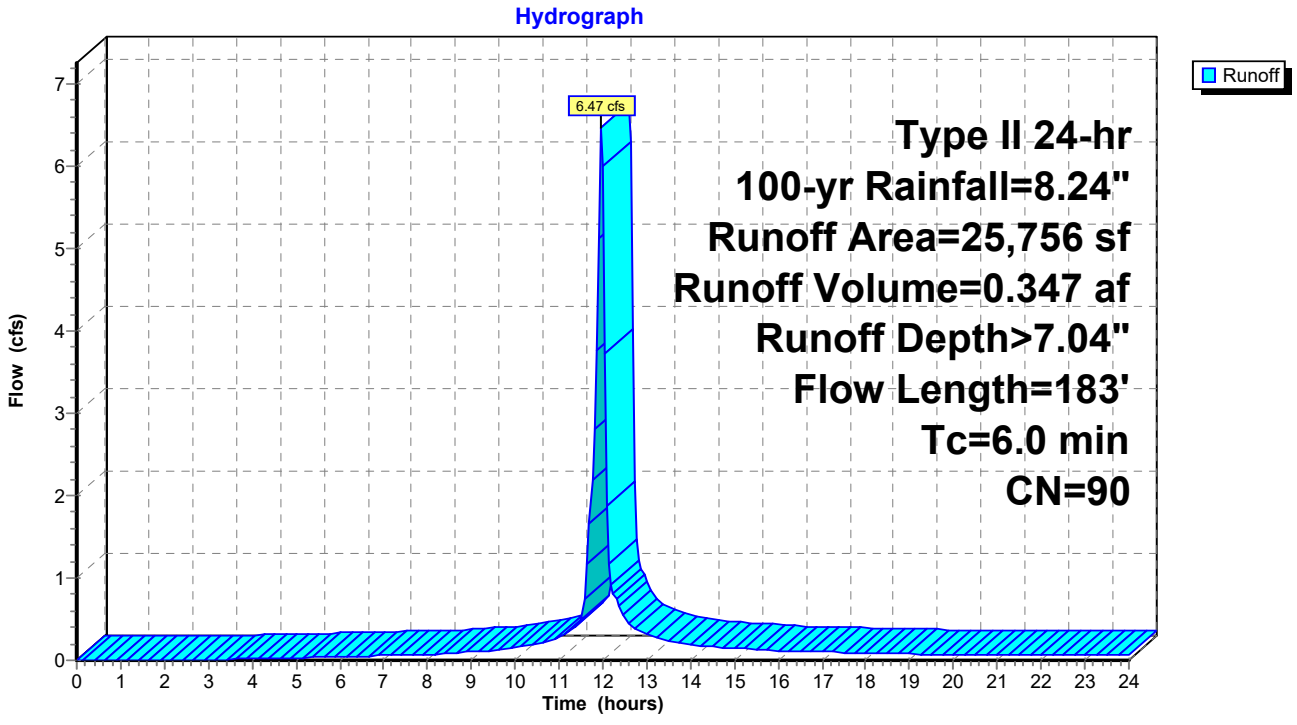
Runoff = 6.47 cfs @ 11.96 hrs, Volume= 0.347 af, Depth> 7.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.24"

	Area (sf)	CN	Description
*	10,516	98	Paved parking
	15,240	84	50-75% Grass cover, Fair, HSG D
	0	82	Woods/grass comb., Fair, HSG D
	25,756	90	Weighted Average
	15,240		59.17% Pervious Area
	10,516		40.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0330	1.67		**Sheet Flow, 100' PAVED** Smooth surfaces n= 0.011 P2= 3.15"
0.5	83	0.0205	2.91		**Shallow Concentrated Flow, 83' PAVED** Paved Kv= 20.3 fps
1.5	183	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PS3:



Summary for Subcatchment PS4:

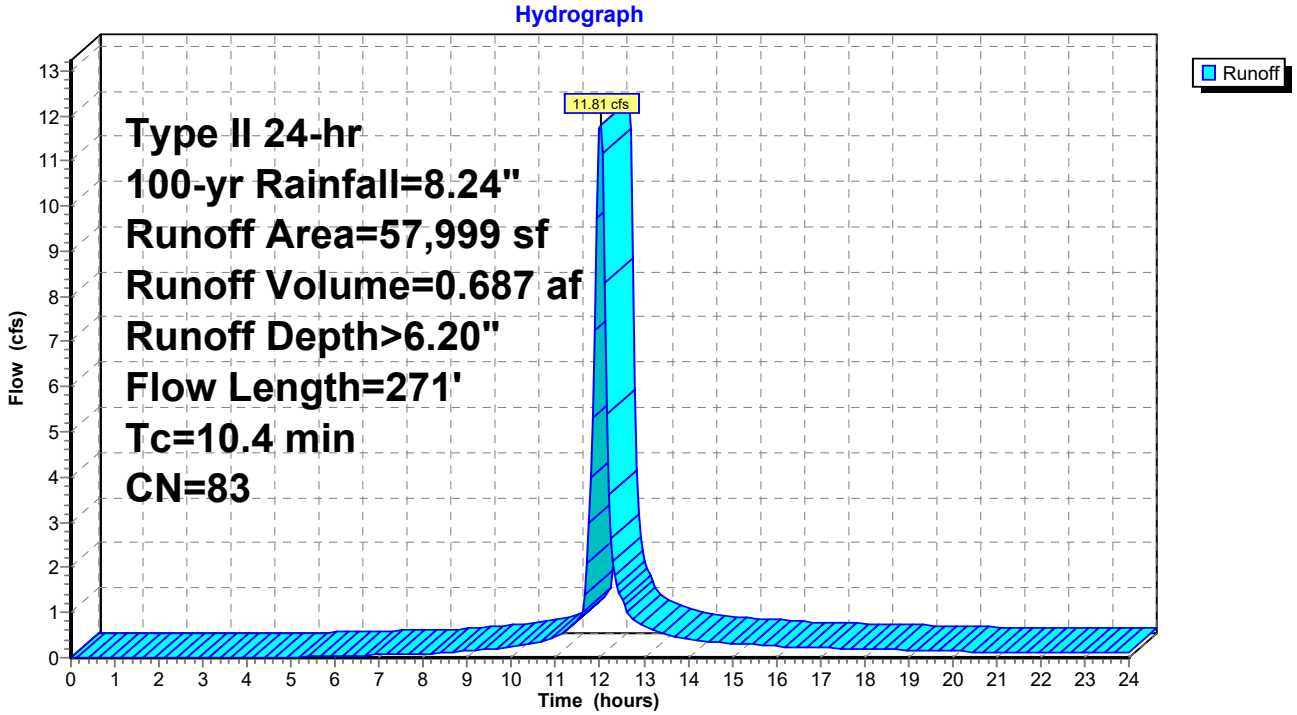
Runoff = 11.81 cfs @ 12.01 hrs, Volume= 0.687 af, Depth> 6.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.24"

	Area (sf)	CN	Description
*	0	98	Paved parking
	25,732	84	50-75% Grass cover, Fair, HSG D
	32,267	82	Woods/grass comb., Fair, HSG D
	57,999	83	Weighted Average
	57,999		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1600	0.18		**Sheet Flow, 100' woods @ 16%** Woods: Light underbrush n= 0.400 P2= 3.15"
0.6	81	0.2200	2.35		**Shallow Concentrated Flow, 81' woods @ 22%** Woodland Kv= 5.0 fps
0.4	90	0.3300	4.02		**Shallow Concentrated Flow, 90' grass @ 33%** Short Grass Pasture Kv= 7.0 fps
10.4	271	Total			

Subcatchment PS4:

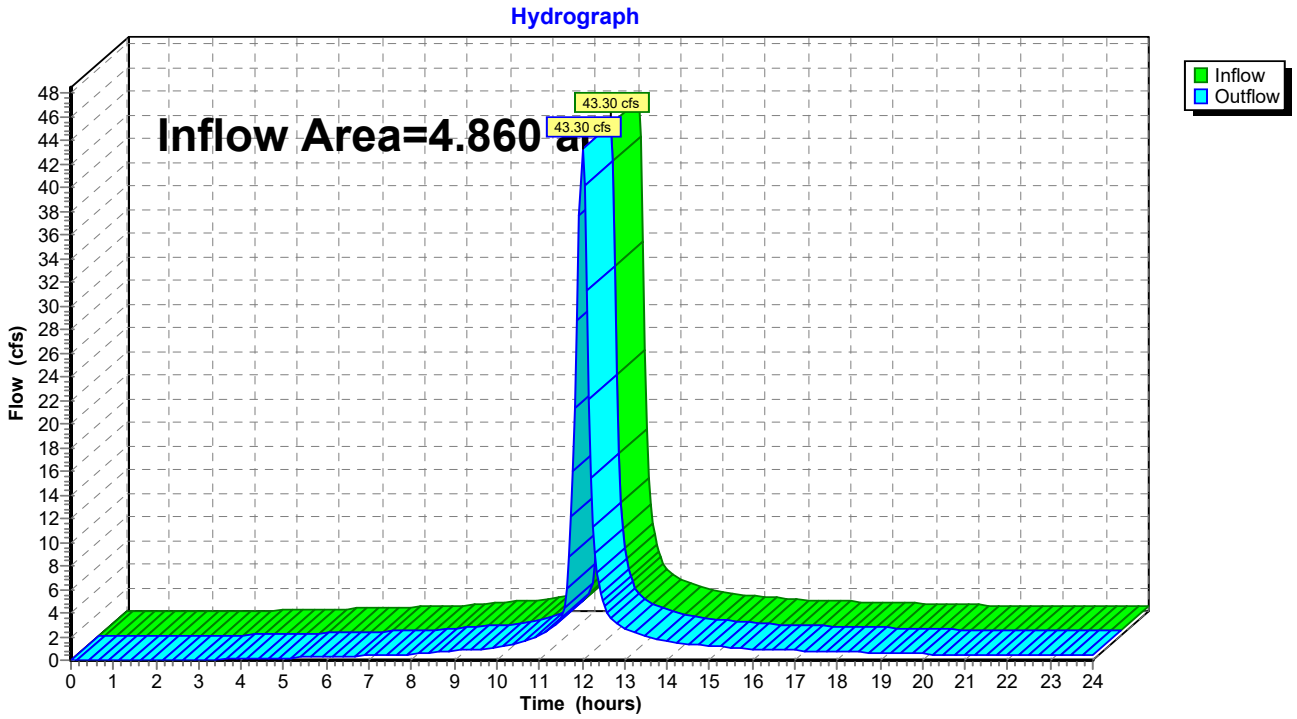


Summary for Reach DP1: EX CB 2

Inflow Area = 4.860 ac, 35.64% Impervious, Inflow Depth > 6.84" for 100-yr event
Inflow = 43.30 cfs @ 12.01 hrs, Volume= 2.772 af
Outflow = 43.30 cfs @ 12.01 hrs, Volume= 2.772 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: EX CB 2



Summary for Pond 1P: EX CB 1

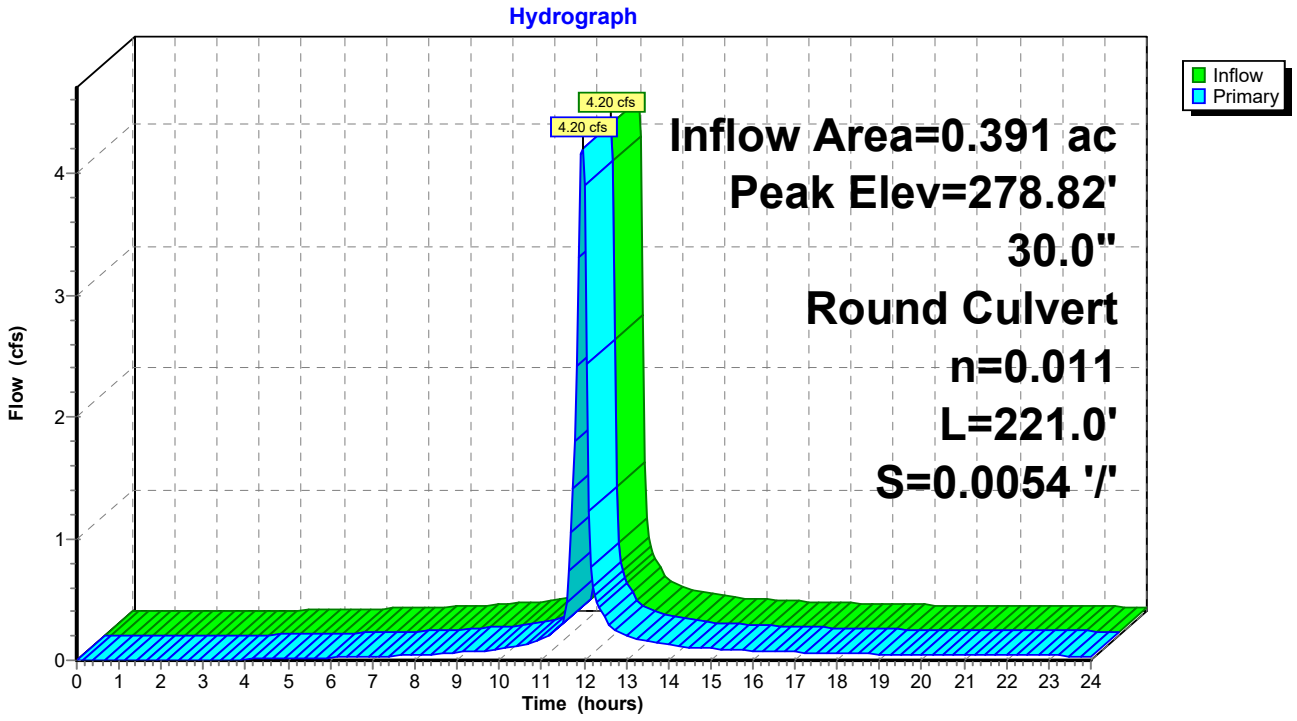
Inflow Area = 0.391 ac, 31.27% Impervious, Inflow Depth > 6.80" for 100-yr event
Inflow = 4.20 cfs @ 11.96 hrs, Volume= 0.222 af
Outflow = 4.20 cfs @ 11.96 hrs, Volume= 0.222 af, Atten= 0%, Lag= 0.0 min
Primary = 4.20 cfs @ 11.96 hrs, Volume= 0.222 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.82' @ 11.96 hrs
Flood Elev= 288.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**30.0" Round Culvert** L= 221.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.00' / 276.80' S= 0.0054 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 4.91 sf

Primary OutFlow Max=4.09 cfs @ 11.96 hrs HW=278.81' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 4.09 cfs @ 4.44 fps)

Pond 1P: EX CB 1



Summary for Pond 2P: HYDRO 1

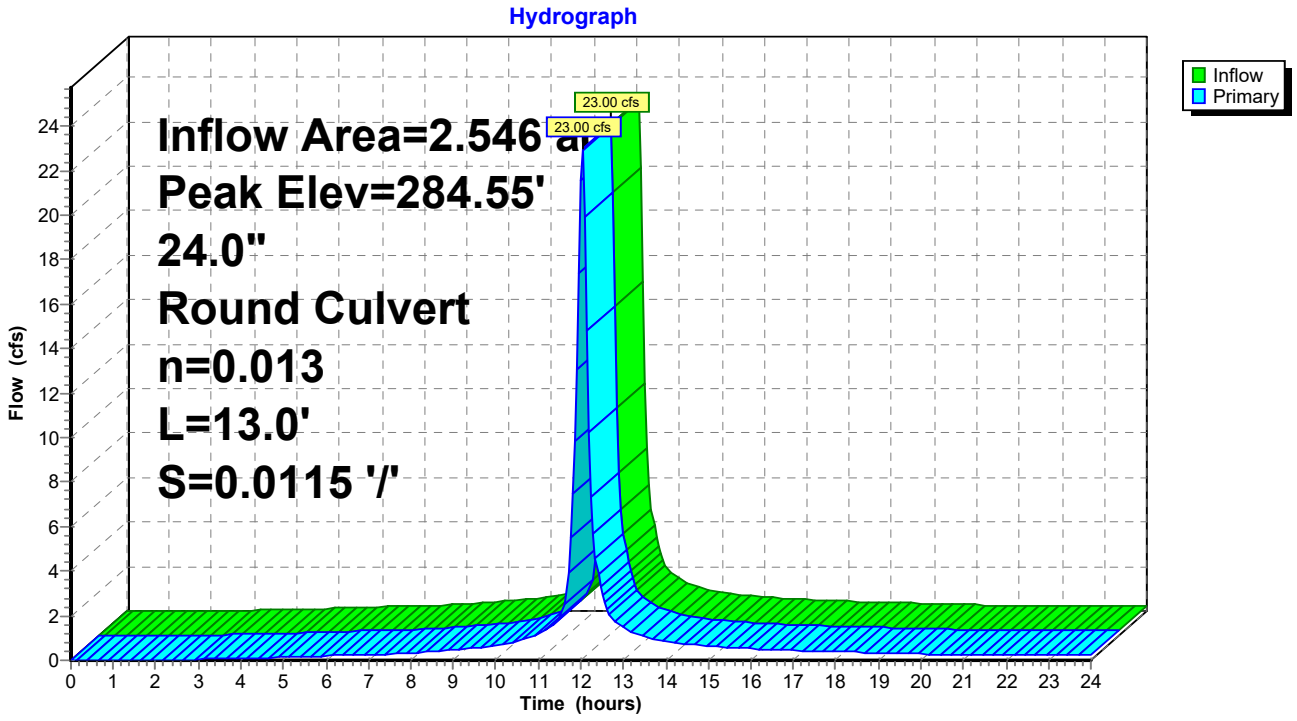
Inflow Area = 2.546 ac, 53.74% Impervious, Inflow Depth > 7.15" for 100-yr event
Inflow = 23.00 cfs @ 12.04 hrs, Volume= 1.516 af
Outflow = 23.00 cfs @ 12.04 hrs, Volume= 1.516 af, Atten= 0%, Lag= 0.0 min
Primary = 23.00 cfs @ 12.04 hrs, Volume= 1.516 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 284.55' @ 12.06 hrs
Flood Elev= 285.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.65'	**24.0" Round Culvert** L= 13.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 279.65' / 279.50' S= 0.0115 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=21.53 cfs @ 12.04 hrs HW=284.37' TW=282.34' (Dynamic Tailwater)
1=Culvert (Inlet Controls 21.53 cfs @ 6.85 fps)

Pond 2P: HYDRO 1



Summary for Pond 3P: MH2

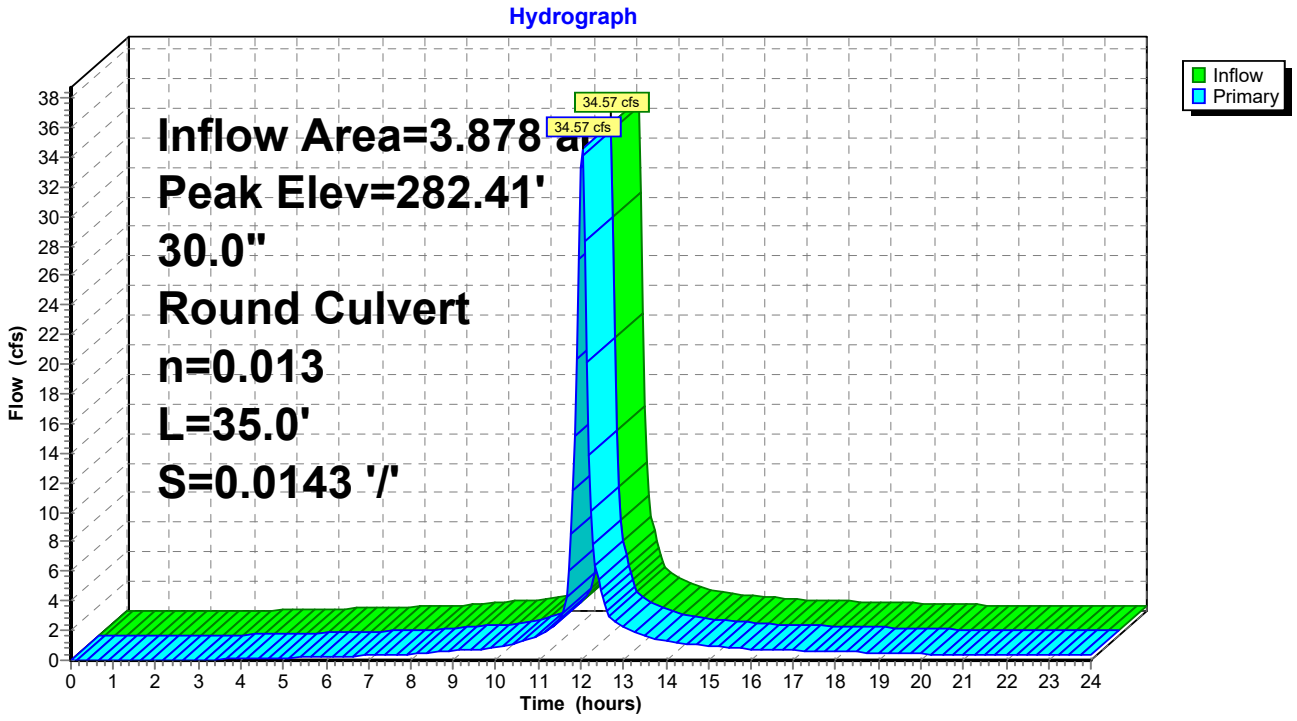
Inflow Area = 3.878 ac, 35.29% Impervious, Inflow Depth > 6.82" for 100-yr event
Inflow = 34.57 cfs @ 12.03 hrs, Volume= 2.204 af
Outflow = 34.57 cfs @ 12.03 hrs, Volume= 2.204 af, Atten= 0%, Lag= 0.0 min
Primary = 34.57 cfs @ 12.03 hrs, Volume= 2.204 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 282.41' @ 12.03 hrs
Flood Elev= 285.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.00'	**30.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 279.00' / 278.50' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=33.78 cfs @ 12.03 hrs HW=282.32' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 33.78 cfs @ 6.89 fps)

Pond 3P: MH2



Summary for Pond 4P: CB14

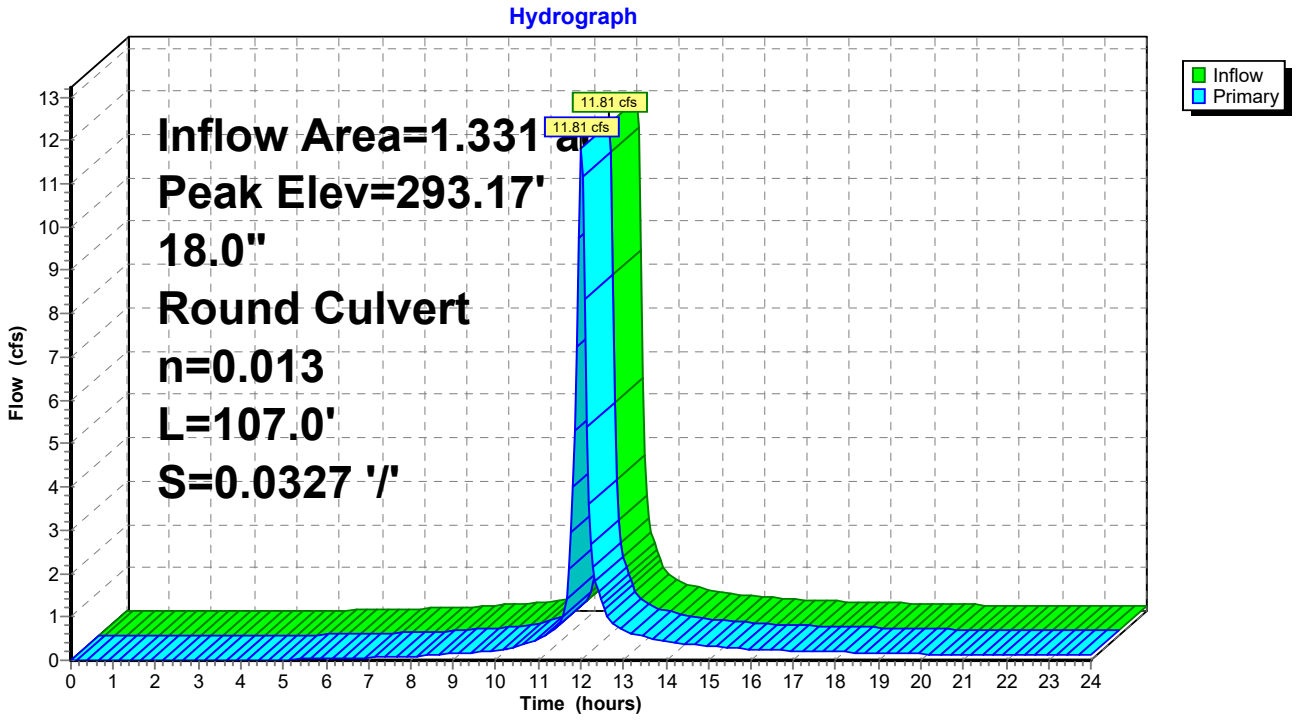
Inflow Area = 1.331 ac, 0.00% Impervious, Inflow Depth > 6.20" for 100-yr event
Inflow = 11.81 cfs @ 12.01 hrs, Volume= 0.687 af
Outflow = 11.81 cfs @ 12.01 hrs, Volume= 0.687 af, Atten= 0%, Lag= 0.0 min
Primary = 11.81 cfs @ 12.01 hrs, Volume= 0.687 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.17' @ 12.01 hrs
Flood Elev= 295.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.50'	**18.0" Round Culvert** L= 107.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 290.50' / 287.00' S= 0.0327 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=11.55 cfs @ 12.01 hrs HW=293.09' TW=289.59' (Dynamic Tailwater)
1=Culvert (Inlet Controls 11.55 cfs @ 6.54 fps)

Pond 4P: CB14



Summary for Pond 5P: MH3

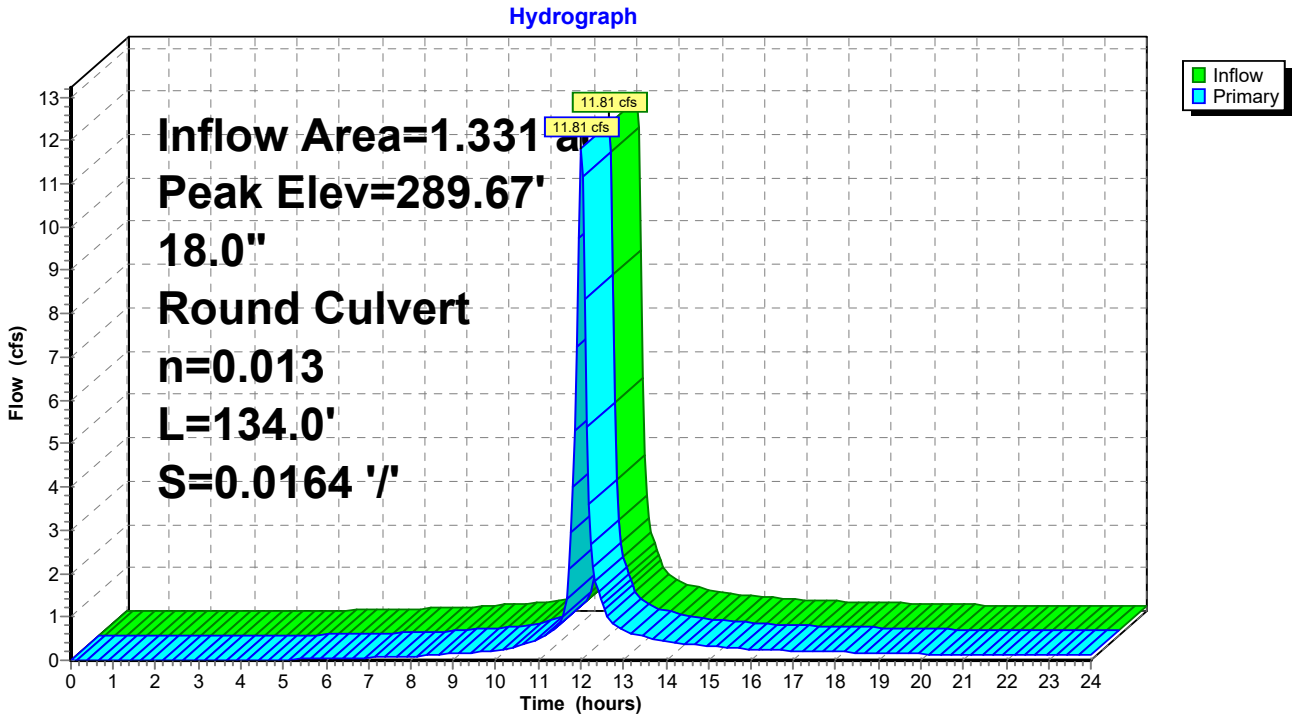
Inflow Area = 1.331 ac, 0.00% Impervious, Inflow Depth > 6.20" for 100-yr event
Inflow = 11.81 cfs @ 12.01 hrs, Volume= 0.687 af
Outflow = 11.81 cfs @ 12.01 hrs, Volume= 0.687 af, Atten= 0%, Lag= 0.0 min
Primary = 11.81 cfs @ 12.01 hrs, Volume= 0.687 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 289.67' @ 12.01 hrs
Flood Elev= 292.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	287.00'	**18.0" Round Culvert** L= 134.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 287.00' / 284.80' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=11.55 cfs @ 12.01 hrs HW=289.59' TW=286.09' (Dynamic Tailwater)
1=Culvert (Inlet Controls 11.55 cfs @ 6.54 fps)

Pond 5P: MH3



Summary for Pond 6P: MH1

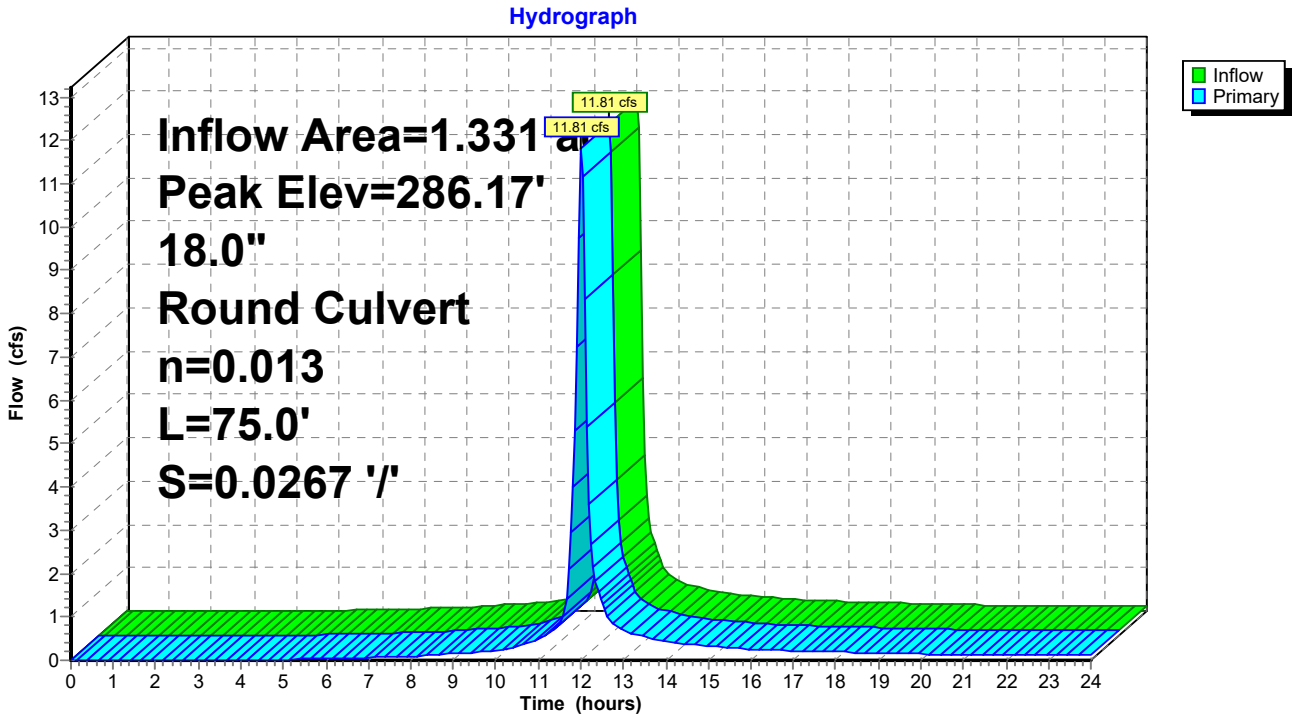
Inflow Area = 1.331 ac, 0.00% Impervious, Inflow Depth > 6.20" for 100-yr event
Inflow = 11.81 cfs @ 12.01 hrs, Volume= 0.687 af
Outflow = 11.81 cfs @ 12.01 hrs, Volume= 0.687 af, Atten= 0%, Lag= 0.0 min
Primary = 11.81 cfs @ 12.01 hrs, Volume= 0.687 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 286.17' @ 12.01 hrs
Flood Elev= 289.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	283.50'	**18.0" Round Culvert** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 283.50' / 281.50' S= 0.0267 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=11.55 cfs @ 12.01 hrs HW=286.09' TW=282.27' (Dynamic Tailwater)
1=Culvert (Inlet Controls 11.55 cfs @ 6.54 fps)

Pond 6P: MH1



Summary for Pond 7P: CB13

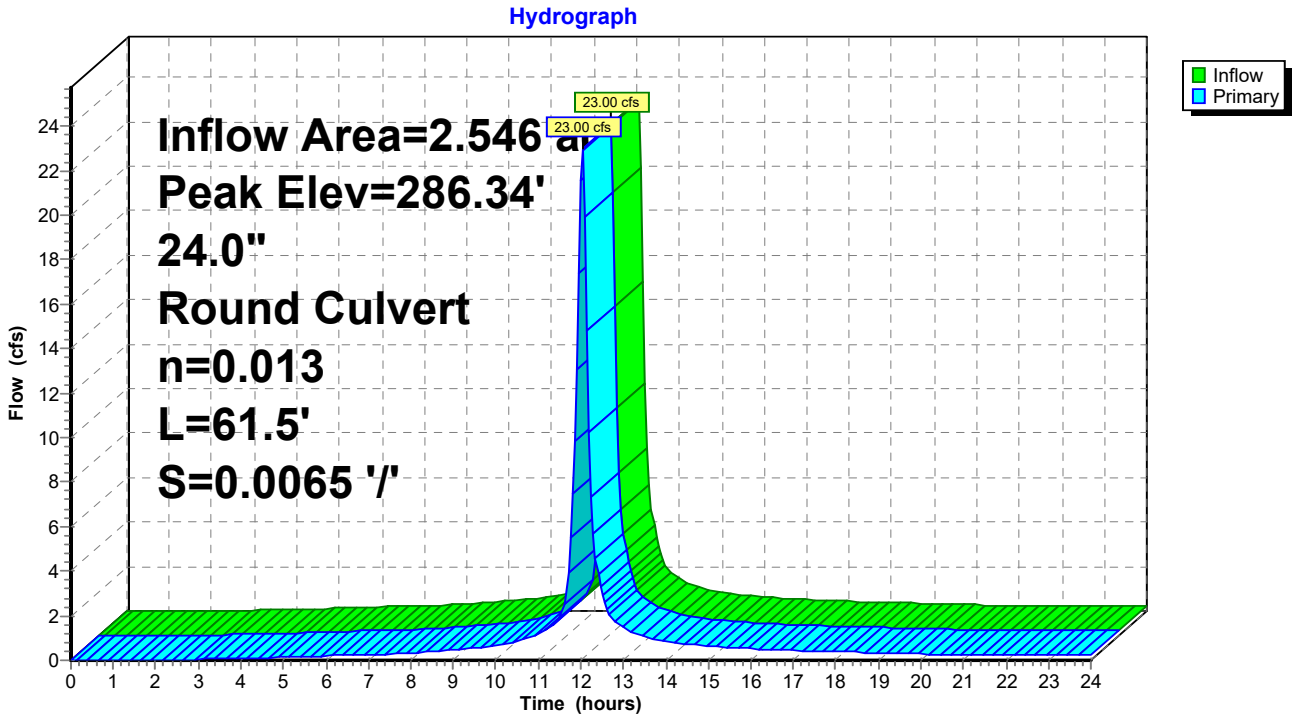
Inflow Area = 2.546 ac, 53.74% Impervious, Inflow Depth > 7.15" for 100-yr event
Inflow = 23.00 cfs @ 12.04 hrs, Volume= 1.516 af
Outflow = 23.00 cfs @ 12.04 hrs, Volume= 1.516 af, Atten= 0%, Lag= 0.0 min
Primary = 23.00 cfs @ 12.04 hrs, Volume= 1.516 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 286.34' @ 12.09 hrs
Flood Elev= 286.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.05'	**24.0" Round Culvert** L= 61.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 280.05' / 279.65' S= 0.0065 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=17.36 cfs @ 12.04 hrs HW=285.68' TW=284.37' (Dynamic Tailwater)
1=Culvert (Inlet Controls 17.36 cfs @ 5.53 fps)

Pond 7P: CB13



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Appendix K:
Project Evaluation and Design Calculations

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Appendix K - Table A
Step 1 - Evaluation of Green Infrastructure Planning Measures

Group	Practice	Description	Applicable	Project Specific Evaluation
Preservation of Natural Resources	**Preservation of Undisturbed Areas**	Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.	**No**	The proposed site layout has been designed to limit land disturbance to the greatest extent practical. The project does not propose permanent conservation of this area at this time.
	Preservation of Buffers	Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.	**N/A**	There are no streams, rivers, shorelines, or wetlands on site.
	Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	**N/A**	As a redevelopment, most of the site has already been cleared.
	Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	**N/A**	There are no floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats located on the project site. As such, this green planning measure does not apply.
	Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	**Yes**	The minimum drive aisle and parking space dimensions have been used to reduce the amount of impervious area.
	Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of practices such as downspout disconnections, grass channels, filter strips, and tree clusters.	**Yes**	Full soil restoration is proposed for all areas of disturbance that will not become hardscape. All areas will be stabilized with seed & mulch, and landscaped areas will be provided.
	Roadway Reduction	Minimize roadway widths and lengths to reduce site impervious area	**N/A**	There are no proposed roadways in this project.

Reduction of Impervious Cover	**Sidewalk Reduction**	Minimize sidewalk lengths and widths to reduce site impervious area	**Yes**	Sidewalk widths and lengths have been minimized to the greatest extent practical.
	Driveway Reduction	Minimize driveway lengths and widths to reduce site impervious area	**Yes**	Driveway widths and lengths have been minimized to the greatest extent practical.
	Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	**N/A**	No cul-de-sacs are proposed as part of this project.
	Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	**No**	This project removes two existing building and proposes an additional building with a larger footprint.
	Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimensions, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	**Yes**	On-site parking has been allocated to provide a sufficient number of spaces for the intended use.

Appendix K - Table B
Step 2 - Determine Water Quality Treatment Volume (WQv)

Determine Pre- and Post-Development Impervious Cover Areas				
Watershed Pre-Development Impervious Area:	99,241	sf =	2.28	ac
Watershed Post-Development Impervious Area:	75,452	sf =	1.73	ac
Total Area Within Work Limits:	118,973	sf =	2.73	ac
Existing Disturbed Impervious Area:	82,996	sf =	1.91	ac
New Development Impervious Area:	0	sf =	0.00	**ac**
Redevelopment Impervious % (based on proposed treatment practice)	75	%		
Redevelopment Impervious Area:	56,589	sf =	**1.30**	**ac**

Determine the Initial Water Quality Volume (WQv)					
WQv(acre-feet) = [(P)(Rv)(A)] /12					
Rv = 0.05+0.009(I)					
I = Impervious Cover (%)					
P=	1.40	*inch*			
I=	48%				
Rv=	0.478				
Initial WQv=	**6,636**	cf =	**0.152**	**ac-ft**	

Appendix K - Table C

Step 3 - Determine Minimum Required Runoff Reduction Volume (RRv)

Section 4.3 of the NYSDEC Stormwater Management Design Manual describes the Runoff Reduction Volume equation as:

RRv = (P x Rv* x Ai) / 12

where: RRv = Runoff Reduction Volume (acre-feet)
P = 90% Rainfall Event Number (inches) (interpolated from Design Manual Fig 4.1)
Rv = 0.05 + 0.009 (I), where I is 100% impervious = 0.95 constant
Ai = (S x Aic) = Impervious cover targeted for runoff reduction
Aic = Total area of new impervious cover (acres)
S = Hydrologic Soil Group (HSG) Specific Reduction Factor
where:

HSG A=	0.55	HSG C=	0.30
HSG B=	0.40	HSG D=	0.20

The following table presents the RRv calculations for each of the proposed stormwater management practices (SMPs).

Enter the Soils Data for the site

Soil Group	Acres	S
A	0.00	0.55
B	0.00	0.40
C	0.00	0.30
D	5.31	0.20
Total Area	5.31	acres

Calculate the Minimum RRv

S =	**0.20**	
Impervious =	0.00	*acre*
Precipitation	1.40	*in*
Rv	0.95	
Minimum RRv	**0**	ft^3
	0.000	af

Appendix K - Table D
Step 3 - Evaluation of Runoff Reduction Techniques and Standard SMPs with RRv Capacity

Design Variant	Practice	Description	Applicable	Project Specific Evaluation/Justification
RR-1	**Conservation of Natural Areas**	Retain the pre-development hydrologic and water quality characteristics of undisturbed natural areas, stream and wetland buffers by restoring and/or permanently conserving these areas on a site.	**No**	As a Redevelopment Project, the proposed site layout has been designed to limit land disturbance to the greatest extent practical.
RR-2	**Sheet flow to Riparian Buffers or Filter Strips**	Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from portions of development.	**No**	No untreated sheet flow is proposed to flow to the riparian areas from the proposed layout.
RR-3	**Tree Planting/ Tree Pit**	Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, and conservation areas.	**No**	New trees are proposed, but no credit has been taken.
RR-4	**Disconnection of Rooftop Runoff**	Direct runoff from residential rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates.	**No**	No areas contain small enough roof areas or a long enough flow path before reconnecting with impervious areas to qualify for the rooftop disconnection credit.
RR-5	**Vegetated Swale**	The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	**No**	There is no adequate space in the disturbaed area for a vegetated swale.
RR-6	**Rain Garden**	Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	**No**	Due to the limited tributary area to rain gardens (less than or equal to 1,000SF), a rain garden is not practical at this site.
RR-7	**Stormwater Planter**	Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters use soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.	**No**	The stormwater management approach for this project is intended to provide a more natural aesthetic that is consistent with the wooded surrounding. Since, stormwater planters have significant maintenance considerations and a more structured aesthetic, they have not been proposed for this project.
RR-8	**Rain Barrels/ Cisterns**	Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	**No**	Rain Barrels/Cisterns are not proposed on-site due to the need for active management/maintenance and initial capital cost. In addition, the cold climate of the project area would require additional protection measures from freezing.
RR-9	**Porous Pavement**	Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	**No**	Porous pavement is not proposed as part of this project due to majority of the site is considered a hot spot.
RR-10	**Green Roof**	Capture runoff by a layer of vegetation and soil installed on top of a conventional flat or sloped roof. The rooftop vegetation allows evaporation and evapotranspiration processes to reduce volume and discharge rate of runoff entering conveyance system.	**No**	A green roof is not proposed on-site due to significant structural, insurance, and maintenance considerations.

	Stream Daylighting	Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.	**No**	Stream daylighting is not proposed on this site.
I-1	**Infiltration Trench**	Excavated, stone-filled trenches designed to capture and temporarily store runoff in the stone reservoir to promote infiltration. Can be constructed as sheet flow to a ground surface depression or piped flow discharged directly into the trench.	**No**	An infiltration trench is not applied to this project because the site is a hot spot.
I-2	**Infiltration Basin**	Vegetated excavations designed to capture and infiltrate the WQv. Can be designed off-line to bypass larger flows to downstream flood control facilities or as combined infiltration/flood control facilities by providing temporary detention ponding.	**No**	An infiltration basin is not applied to this project because the site is a hot spot.
I-3	**Dry Wells**	Underground structures designed to capture, treat, and infiltrate runoff from small drainage areas (rooftop only) that have low sediment or pollutant loadings. Larger stormwater volumes can be bypassed directly to a flood control facility.	**No**	Dry wells have not been applied to this project.
I-4	**Underground Infiltration Systems**	Underground, proprietary systems designed to capture and infiltrate the WQv, reduce runoff, remove fine sediment and associated pollutants, recharge groundwater, and attenuate peak flows.	**No**	Infiltartion systems are not proposed for this project because the site is a hotspot.
F-5	**Bioretention**	Shallow landscaped depressions where stormwater flows into the practice, ponds at the surface, and gradually filters through the media to remove pollutants. Filtered runoff can either infiltrate into the surrounding soil, or be collected by an underdrain system and discharged to the storm sewer system or directly to receiving waters.	**No**	Bioretention has not been applied to this project.
O-1	**Dry Swale**	Designed to temporarily hold the WQv in a pool or series of pools created by permanent check dams. The soil bed consists of native soils or highly permeable fill material, underlain by an underdrain system. Pollutants are removed through sedimentation, nutrient uptake, and infiltration.	**No**	Dry swales are not proposed.

Appendix K - Table E

Summary Table: Runoff Reduction Volume and Treated volumes

	Runoff Reduction Techiques/Standard SMPs		Total Contributing Area	Total Contributing Impervious Area	WQv Reduced (RRv)	WQv Treated
			(acres)	(acres)	cf	cf
Area/Volume Reduction	Conservation of Natural Areas	RR-1	0.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4	0.00	0.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basins	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00	0.00	0	0
	Bioretention	F-5	0.00	0.00	0	0
	Dry Swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention (P-1)	P-1	0.00	0.00		0
	Wet Pond (P-2)	P-2	0.00	0.00		0
	Wet Extended Detention (P-3)	P-3	0.00	0.00		0
	Multiple Pond System (P-4)	P-4	0.00	0.00		0
	Pocket Pond (P-5)	P-5	0.00	0.00		0
	Surface Sand Filter (F-1)	F-1	0.00	0.00		0
	Underground Sand Filter (F-2)	F-2	0.00	0.00		0
	Perimeter Sand Filter (F-3)	F-3	0.00	0.00		0
	Organic Filter (F-4)	F-4	0.00	0.00		0
	Shallow Wetland (W-1)	W-1	0.00	0.00		0
	Extended Detention Wetland (W-2)	W-2	0.00	0.00		0
	Pond/Wetland System (W-3)	W-3	0.00	0.00		0
	Pocket Wetland (W-4)	W-4	0.00	0.00		0
	Wet Swale (O-2)	O-2	0.00	0.00		0
Alternative Practices	Hydrodynamic Separator		3.06	1.37		7,035
	Filterra Bioretention System		0.00	0.00		0
	Wet Vault		0.00	0.00		0
	Media Filter		0.00	0.00		0
Totals by Area Reduction		→	0.00	0.00	0	
Totals by Volume Reduction		→	0.00	0.00	0	
Totals by Standard SMP w/RRV		→	0.00	0.00	0	0
Totals by Standard SMP		→	0.00	0.00		0
Totals by Alternative Practices		→	3.06	1.37		7,035
Totals (Area + Volume + all SMPs)		→	3.06	1.37	**0**	**7,035**

Appendix K - Table F
Practice Specific Sizing Calculation Worksheet

HYDRODYNAMIC SEPARATOR NO. 1 (HYDRO 1)

Practice Proposed?	Yes
Treatment (Redevelopment)?	Yes

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Precipitation *(in)*	Description
PS1	3.06	1.37	45%	0.45	7,035	1.40	Hydrodynamic Separator

Compute Peak Water Quality Discharge

Qp = qu * A * WQv

where: qu = the unit peak discharge, in cfs/mi^2/inch
A = Drainage area (square miles) contributing to the SMP
WQv = Water Quality Volume (inches)

The unit peak discharge qu is obtained from TR-55 Exhibits 4-I through 4-III, depending on the NRCS rainfall distribution type. It is based on the time of concentration (Tc) in hours, the initial abstraction (Ia) in inches, and the precipitation (P) in inches. The initial abstraction (Ia) is obtained from TR-55 Table 4-1, and is based on the equivalent Curve Number for the water quality volume.

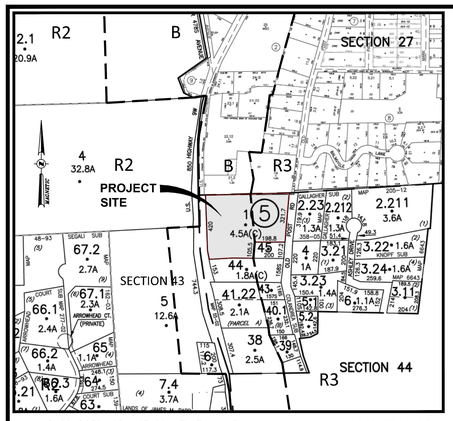
The equivalent Curve Number is calculated using the following equation:

CN = 1000 / [10 + 5P + 10Q - 10 * (Q^2 + 1.25QP)^0.5]

where: CN = Equivalent Curve Number
P = 90% Rainfall Event Number (inches) = 1.40 in
Q = Water Quality Volume (inches)

The following table presents the Water Quality Peak Flow calculations for each of the proposed stormwater management practices (SMPs):

SMP ID	A (ac)	WQv (cf)	Q (inches)	Tc (hours)	CN	Ia (inches)	Ia/P	qu (cfs/sq.mi.-inch)	Qp (cfs)
PS1	3.06	7,035	0.63	0.22	90.5	0.209	0.149	510	**1.50**



MAP SOURCES: ORANGE COUNTY TAX MAP
TOWN OF NEWBURGH ZONING MAP (EXISTING CONDITION)

VICINITY MAP
SCALE: 1"=400'

SITE PLAN

PREPARED FOR

GAS LAND PETROLEUM, INC.

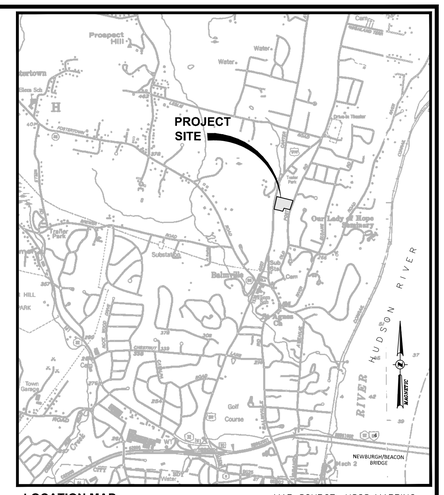
FOR A

CONVENIENCE STORE WITH A GASOLINE FILLING STATION

LOCATED AT

5200 N.Y.S. ROUTE 9W, TOWN OF NEWBURGH
ORANGE COUNTY, NEW YORK

JANUARY 20, 2022



LOCATION MAP
SCALE: 1"=2000'

MAP SOURCE: USGS MAPPING

RECORD OWNER:
P&J PROPERTY WALNUT ST LLC
24 WALNUT ST
NEW WINDSOR NY 12553

DEVELOPER / APPLICANT:
GAS LAND PETROLEUM, INC.
3 S.OHIOVILLE ROAD
NEW PALTZ, NY 12561

ADDRESS:
5200 ROUTE 9W,
NEWBURGH, NY 12550

TAX MAP INFORMATION:
MUNICIPALITY OF NEWBURGH
SECTION 43, BLOCK 5, LOT 1

SITE CIVIL ENGINEER:
CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.
21 FOX STREET, POUGHKEEPSIE, NY 12601
PHONE: (845) 454-3980

SURVEYOR:
HERITAGE LAND SURVEYING, P.C.
DARREN J. STRIDIRON, PROFESSIONAL LAND SURVEYOR
P.O. BOX 579 PLATTEKILL, NEW YORK 12568
PHONE: (845) 562-4148

SITE AREA:
TOTAL PROJECT ACREAGE : 4.517 ACRES

ZONING:
BUSINESS DISTRICT WITH LIGHT AND HEAVY INDUSTRIAL EQUIPMENT AND RECREATIONAL VEHICLE SALES, SERVICE AND REPAIR OVERLAY DISTRICT. 150 FT-DEEP ON THE EASTERLY PORTION OF THE LOT IS IN R-3 DISTRICT, PER TABLE OF ZONING MAP AMENDMENTS.

PER SECTION 185-6.F, MULTIPLE USES SHALL BE PERMITTED ON A SINGLE LOT; THEREFORE, THE SINGLE FAMILY HOME AND ACCESSORY APARTMENT TO THE AUTO REPAIR GARAGE ARE ANTICIPATED TO COMPLY.

BULK TABLE 1
ACCESSORY BUILDING[1]

REQUIREMENTS:	REQUIRED	PROPOSED
MINIMUM LOT AREA[5]	0.69 ACRES	4.52± ACRES
MINIMUM LOT WIDTH	150 FT	415± FT
MINIMUM LOT DEPTH	175 FT	287.0 FT
SETBACKS:		
MINIMUM YARD FRONT[2]	N/A	119.6 FT (NYS 9W) 147.0 FT (OLD POST RD)
MINIMUM YARD SIDE[3]	15 FT	9.0 FT [6,7]
MINIMUM YARD REAR[3]	5 FT	N/A
MINIMUM DISTANCE TO MAIN BUILDING	10 FT	318.1 FT
MAXIMUM PERCENTAGE IN YARD AREA[4]	10%	12% [6,7]
MAXIMUM HEIGHT	15 FT	2 STORY [6,7]
MAXIMUM LOT COVERAGE (BUILDING)	40%	4.1% (ALL BLDGS)
MAXIMUM IMPERVIOUS SURFACE	50%	30% (ENTIRE SITE)

NOTES:
[1] EXISTING ON-SITE APARTMENTS ARE ACCESSORY BUILDINGS TO THE PRINCIPAL USE. BULK REQUIREMENTS ARE PER FOR ACCESSORY BUILDINGS IN SECTION 185-15 AND EXISTING SINGLE-FAMILY DWELLINGS WITH EITHER PUBLIC SEWER OR PUBLIC WATER ONLY.
[2] PER SECTION 185-15.B, NO SUCH BUILDING SHALL PROJECT CLOSER TO THE FRONTING STREET THAN THE FRONT OF THE MAIN BUILDING.
[3] PER SECTION 185-15.A(2), SUCH BUILDING SHALL BE SET BACK AT LEAST FIVE FEET FROM ANY SIDE OR REAR LOT LINE.
[4] PER SECTION 185-15.A(3), SUCH BUILDING SHALL NOT OCCUPY MORE THAN 10% OF THE REQUIRED YARD AREA IN WHICH IT IS PROPOSED TO BE SITUATED.
[5] MINIMUM LOT AREA FOR LOT BOUNDED BY TWO OR MORE STREETS.
[6] EXISTING NON-CONFORMANCE VARIANCE REQUIRED. TOWN HAS STATED 15 FT SIDE WARD SETBACK APPLIES TO ACCESSORY STRUCTURE.
[7] ZONING VARIANCE GRANTED ON 10/28/21 BY TOWN OF NEWBURGH ZONING BOARD OF APPEALS.

BULK TABLE 2
ZONING DISTRICT: BUSINESS (B) ZONING DISTRICT / LHI OVERLAY
"MOTOR VEHICLE SERVICE STATION AND PUBLIC GARAGE"

ZONING REQUIREMENTS (B):	REQUIRED	PROPOSED
MINIMUM LOT AREA[3]	0.690 ACRES	4.52± ACRES
MINIMUM LOT WIDTH	100 FT	415± FT
MINIMUM LOT DEPTH	150 FT	287.0 FT
SETBACKS:		
MINIMUM YARD FRONT	40 FT	259.5 FT (U.S. RTE 9W) 202.2 FT. (OLD POST RD)
MINIMUM YARD SIDE	15 FT	39.0 FT
MINIMUM YARD REAR	30 FT	N/A
PROPERTY LINE TO DRIVEWAY	10 FT	90.0 FT
PROPERTY LINE TO UNDERGROUND FUEL TANK	15 FT	154.5 FT
PROPERTY LINE TO PUMP ISLAND	15 FT	107.9 FT
PROPERTY LINE TO PARKED VEHICLES	10 FT	20.9 FT
DISTANCE TO MOTOR VEHICLE SERVE STATION[1]	1000 FT	900.0 FT [4,5]
MAXIMUM LOT COVERAGE (BUILDING)[2]	40%	4.1% (ALL BLDGS)
MAXIMUM IMPERVIOUS SURFACE	80%	30% (ENTIRE SITE)
MAXIMUM HEIGHT	35 FT	<35 FT

NOTES:
[1] IN NO INSTANCE SHALL A NEW MOTOR VEHICLE SERVICE STATION OR ANY OTHER ESTABLISHMENT DISPENSING GASOLINE BE PERMITTED TO BE ESTABLISHED WITHIN 1,000 FEET IN ANY DIRECTION FROM A LOT ON WHICH THERE IS AN EXISTING MOTOR VEHICLE SERVICE STATION OR OTHER ESTABLISHMENT DISPENSING GASOLINE.
[2] MAXIMUM LOT BUILDING COVERAGE IS 40% IF NO PUBLIC WATER OR SEWER AND 50% IF PUBLIC WATER AND SEWER.
[3] MINIMUM LOT AREA FOR LOT BOUNDED BY TWO OR MORE STREETS.
[4] EXISTING NON-CONFORMANCE VARIANCE REQUIRED.
[5] ZONING VARIANCE GRANTED ON 10/28/21 BY TOWN OF NEWBURGH ZONING BOARD OF APPEALS.

BULK TABLE 3
ZONING DISTRICT: BUSINESS (B) ZONING DISTRICT / LHI OVERLAY
"CONVENIENCE STORE WITH OR WITHOUT GASOLINE FILLING STATION"

ZONING REQUIREMENTS (B):	REQUIRED	PROPOSED
MINIMUM LOT AREA[1]	0.459 ACRES	4.52± ACRES
MINIMUM LOT WIDTH	100 FT	415± FT
MINIMUM LOT DEPTH	125 FT	287.0 FT
SETBACKS:		
MINIMUM YARD FRONT	60 FT	80.0 FT (U.S. RTE 9W) 372.9 FT (OLD POST RD)
MINIMUM YARD SIDE	15 FT	17.0 FT
MINIMUM YARD REAR	30 FT	N/A
PROPERTY LINE TO DRIVEWAY	10 FT	90.0 FT
PROPERTY LINE TO UNDERGROUND FUEL TANK	15 FT	154.5 FT
PROPERTY LINE TO PUMP ISLAND	15 FT	107.9 FT
PROPERTY LINE TO PARKED VEHICLES	10 FT	20.9 FT
DISTANCE TO MOTOR VEHICLE SERVE STATION[2]	1000 FT	900.0 FT[4]
MAXIMUM LOT COVERAGE (BUILDING)[3]	40%	4.1% (ALL BLDGS)
MAXIMUM IMPERVIOUS SURFACE	80%	30% (ENTIRE SITE)
MAXIMUM HEIGHT	35 FT	1 STORY

NOTES:
[1] MINIMUM LOT AREA FOR LOT BOUNDED BY ONE STREET.
[2] IN NO INSTANCE SHALL A NEW MOTOR VEHICLE SERVICE STATION OR ANY OTHER ESTABLISHMENT DISPENSING GASOLINE BE PERMITTED TO BE ESTABLISHED WITHIN 1,000 FEET IN ANY DIRECTION FROM A LOT ON WHICH THERE IS AN EXISTING MOTOR VEHICLE SERVICE STATION OR OTHER ESTABLISHMENT DISPENSING GASOLINE.
[3] MAXIMUM LOT BUILDING COVERAGE IS 40% IF NO PUBLIC WATER OR SEWER AND 50% IF PUBLIC WATER AND SEWER.
[4] ZONING VARIANCE GRANTED ON 10/28/21 BY TOWN OF NEWBURGH ZONING BOARD OF APPEALS.

INDEX OF DRAWINGS

PARKING SPACE CALCULATIONS:

TOTAL SPACES PROVIDED ON SITE = 45 (W/INCLUDES 3 INTERIOR BAY SPACES)

CONVENIENCE STORE/WITH GASOLINE FILLING STATION:
REQUIRED = 20 SPACES
PROVIDED* = 24 SPACES (12 SPACES + 12 SPACES AT THE PUMPS)

PER SECTION 185-13.C(1)(b): REQUIRED PARKING FOR A RETAIL STORE, SHOPPING CENTER, AND PERSONAL SERVICE STORE IS 1 PER 150 SQUARE FEET OF GROSS LEASABLE FLOOR SPACE.
(2,940 SQUARE FEET X 1 SPACE PER 150 SQUARE FEET = 20)

*THE TOTAL SPACES PROVIDED INCLUDES THE 12 SPACES AT THE FUEL PUMPS.

AUTO REPAIR GARAGE:
REQUIRED (MIN.) = 8 SPACES
PROVIDED = 19 SPACES (3 INTERIOR BAYS + 16 SPACES = 19)

PER SECTION 185-13.C(1)(b):
REQUIRED PARKING FOR A REPAIR GARAGE IS PARKING SPACES FOR ALL VEHICLES BEING SERVICED AT ANY 1 PERIOD OF TIME, PLUS A MINIMUM OF 5 ADDITIONAL SPACES.

RESIDENTIAL BUILDING: (ACCESSORY BUILDING)
REQUIRED = 2 SPACES
PROVIDED = 2 SPACES

PER SECTION 185-13.C(1)(a):
FOR ONE RESIDENTIAL SINGLE FAMILY UNIT, 2 SPACES SHALL BE PROVIDED.

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- New York City, NY

rev.	date	description

GAS LAND 5200 ROUTE 9W

TITLE SHEET

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SPL	CPL
date	scale
01/20/22	AS SHOWN
project no.	
81912.00	
sheet no.	
G001	

Drawing Name: Z:\projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_G001_81912-00_TITLE.dwg
Xref's Attached: XTB_30X42_81912-00
Date Printed: Jan 24, 2022, 9:04am

LEGEND:

LAYOUT:

- PROPERTY LINE
- SETBACK LINE
- EASEMENT LINE
- BUILDING (WITH DOOR LOCATION)
- PAVED ROAD
- ROAD CENTER LINE
- SIDEWALK
- CURB (CONC. CURB)
- ASPHALT DRIVEWAY
- LIMIT OF WORK BOUNDARY
- GUIDERAIL
- CHAIN LINK FENCE
- STOCKADE FENCE
- RIPRAP
- CONCRETE
- STABILIZED CONSTRUCTION ENTRANCE
- ROAD LINING & STRIPING
- ASPHALT PARKING AREA

SYMBOLS:

- SIGN
- SIGN
- BOLLARD
- LIGHTED BOLLARD
- CATCH BASIN
- FLARED END SECTION
- DRAINAGE MANHOLE
- SANITARY MANHOLE
- CLEANOUT
- WELL
- WATER SHUT OFF VALVE
- WATER VALVE
- CONTROL BOX
- ELECTRIC MANHOLE
- CABLE TV PEDESTAL
- GAS VALVE
- LIGHT POLE
- LIGHT WALL PACK
- POST AND LUMINAIRE
- MAILBOX
- MONUMENT
- PARKING COUNT (25)
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- ELECTRIC TRANSFORMER
- TRAFFIC SIGNAL CONTROL BOX
- UTILITY POLE
- UTILITY POLE W/ LIGHT
- UTILITY POLE W/ GUY WIRE

UTILITIES:

- OHW — OVERHEAD WIRES
- ROAD CENTER LINE
- S — SANITARY SEWER LINE
- FM — FORCE MAIN
- W — WATER LINE
- ST — STORM DRAIN LINE
- E — ELECTRIC LINE
- GAS LINE
- SIZE & TYPE — CULVERT W/ END SECTION

GRADING & EROSION CONTROL:

- XXX — 10 FT CONTOUR
- XXX — 2 FT CONTOUR
- XXX.XX X — SPOT ELEVATIONS
- TREE LINE
- SHRUB LINE
- DRAINAGE SWALE
- ORANGE CONSTRUCTION FENCE
- EROSION CONTROL BARRIER – SILT FENCE
- SPOILS STORAGE AREA
- STABILIZED CONSTRUCTION ENTRANCE
- RIPRAP
- CHECK DAM WITH DITCH FLOW DIRECTION
- TEMPORARY DIVERSION SWALE
- STRAW BALE DIKE
- FILTER FABRIC DROP INLET PROTECTION
- STONE & BLOCK DROP INLET PROTECTION
- EROSION CONTROL BLANKET

DEMOLITION:

- EXISTING FEATURE TO BE REMOVED
- EXISTING TREE TO BE REMOVED
- EXISTING SITE FEATURE TO BE REMOVED
- EXISTING PAVEMENT & SIDEWALK TO BE REMOVED
- EXISTING BUILDING TO BE REMOVED

DEMOLITION NOTES:

1. REFER TO REQUIREMENTS OUTLINED IN THE EROSION & SEDIMENTS CONTROL PLANS & NOTES PRIOR TO COMMENCEMENT OF WORK.
2. BUILDING/STRUCTURE TO BE DEMOLISHED ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE NOT TO BE DEMOLISHED AS PART OF THIS WORK. PRIOR TO DEMOLISHING ANY BUILDINGS/STRUCTURES, THE CONTRACTOR SHALL PERFORM A PRE-DEMOLITION SURVEY IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS GOVERNING THE DISPOSAL OF SOLID WASTE. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS BY THE AUTHORITY HAVING JURISDICTION.
3. CONFORM TO APPLICABLE CODE FOR DEMOLITION OF STRUCTURES, SAFETY OF ADJACENT STRUCTURES, DUST CONTROL, RUNOFF CONTROL, AND HAULING, DISPOSAL AND STORAGE OF DEBRIS.
4. PROVIDE, ERECT, AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES.
5. MAINTAIN EXISTING UTILITIES TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS. DO NOT INTERRUPT EXISTING UTILITIES SERVING OPERATING FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY OWNER AND AUTHORITIES HAVING JURISDICTION.
6. NOTIFY ADJACENT OWNERS OF WORK THAT MAY AFFECT THEIR PROPERTY, POTENTIAL NOISE, UTILITY OUTAGE, OR DISRUPTION. COORDINATE WITH OWNER.
7. PREVENT MOVEMENT OR SETTLEMENT OF ADJACENT STRUCTURES. PROVIDE BRACING AND SHORING.
8. LOCATE AND IDENTIFY ALL EXISTING UTILITIES WITHIN THE CONSTRUCTION AREA. DISCONNECT AND SEAL OR CAP OFF UTILITY SERVICES THAT WILL BE AFFECTED BY THIS PROJECT. NOTIFY AFFECTED UTILITY COMPANIES BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS. VERIFY THAT UTILITIES HAVE BEEN DISCONNECTED AND CAPPED.
9. DEMOLISH AND REMOVE COMPONENTS IN AN ORDERLY AND CAREFUL MANNER.
10. PROTECT EXISTING FEATURES THAT ARE NOT TO BE DEMOLISHED.
11. CONDUCT OPERATIONS WITH MINIMUM INTERFERENCE TO PUBLIC OR PRIVATE ACCESSES.
12. MAINTAIN EGRESS AND ACCESS AT ALL TIMES. DO NOT CLOSE OR OBSTRUCT ROADWAYS, OR SIDEWALKS WITHOUT PERMITS. COORDINATE W/ AUTHORITY HAVING JURISDICTION.
13. CEASE OPERATIONS IMMEDIATELY IF ADJACENT STRUCTURES APPEAR TO BE IN DANGER. NOTIFY AUTHORITY HAVING JURISDICTION.
14. ROUGH GRADE AND COMPACT AREAS AFFECTED BY DEMOLITION TO MAINTAIN SITE GRADES AND CONTOURS.
15. FIELD VERIFY EXISTING CONDITIONS AND CORRELATE WITH REQUIREMENTS INDICATED ON DEMOLITION PLAN TO DETERMINE EXTENT OF SELECTIVE DEMOLITION REQUIRED.
16. CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH SELECTIVE DEMOLITION OPERATIONS.
17. CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN. ENSURE SAFE PASSAGE OF PEOPLE AROUND SELECTIVE DEMOLITION AREA.
18. USE WATER MIST, TEMPORARY ENCLOSURES AND OTHER SUITABLE METHODS TO LIMIT THE SPREAD OF DUST AND DIRT. COMPLY WITH GOVERNING ENVIRONMENTAL PROTECTION REGULATIONS. DO NOT USE WATER WHEN IT MAY DAMAGE EXISTING CONSTRUCTION, SUCH AS CAUSING ICING, FLOODING, AND TRANSPORTING POLLUTANTS.
19. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
20. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE START OF SELECTIVE DEMOLITION.
21. PROMPTLY DISPOSE OF DEMOLISHED MATERIALS. ALL DEBRIS RESULTING FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE AT A FACILITY APPROVED TO RECEIVE THE DEBRIS. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE. DO NOT BURN DEMOLISHED MATERIALS ON-SITE.
22. REMOVAL OF ALL ELECTRICAL SERVICE SHALL BE PERFORMED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE. COORDINATE WITH LOCAL UTILITY HAVING JURISDICTION.
23. ANY DEMOLITION OF ANY STRUCTURES ON THE SITE WILL REQUIRE A PERMIT FROM THE BUILDING DEPARTMENT.
24. ANY NECESSARY TREE CLEARING WILL OCCUR BETWEEN NOVEMBER 1ST AND MARCH 31ST TO AVOID DIRECT OR INDIRECT TAKE OF THE BAT SPECIES, AS DURING THIS TIME, THE BATS WOULD BE HIBERNATING AND NOT PRESENT ONSITE.

WELL ABANDONMENT NOTES:

1. THE ABANDONMENT AND/OR DECOMMISSIONING OF ALL EXISTING WELLS MUST BE IN ACCORDANCE WITH THE PROCEDURES SET FORTH IN AWWA STANDARD A100.
2. ALL PUMPS, WIRING, AND PIPING SHALL BE PULLED OUT OF THE EXISTING WELL.
3. WELLS TO BE ABANDONED SHALL: (a) BE SEALED TO PREVENT UNDESIRABLE EXCHANGE OF WATER FROM ONE AQUIFER TO ANOTHER; (b) BE FILLED WITH SODIUM BENTONITE SLURRY; (c) WHEN FILLING WITH SODIUM BENTONITE SLURRY, THIS MATERIAL SHALL BE APPLIED TO THE WELL HOLE THROUGH A PIPE, TREMIE, OR BAILER.
4. AFTER COMPLETION OF GROUTING PROCEDURE, THE CONTRACTOR SHALL EXCAVATE AROUND THE WELL CASING AND CUT THE CASING TO A DEPTH OF FOUR FEET BELOW EXISTING GRADE. A CONCRETE CAP MEASURING APPROXIMATELY 2-FOOT IN DIAMETER WITH A THICKNESS OF 1-FOOT, IS TO BE PLACED ON TOP OF THE CASING. REMAINDER OF EXCAVATION SHALL BE BACKFILLED WITH A SUITABLE BACKFILL MATERIAL.
5. WELLS TO BE ABANDONED SHALL BE CERTIFIED BY A NYS PROFESSIONAL ENGINEER (P.E.).

SITE PLAN NOTES:

GENERAL CONSTRUCTION:

1. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE AND UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
2. ALL PAVEMENT RESTORATION SHALL MEET AND MATCH EXISTING GRADES.
3. ALL SAWCUT LINES SHALL BE PARALLEL AND CURVILINEAR TO EXISTING OR PROPOSED CURBING AND SHALL BE A CONSTANT DISTANCE OF 18" MIN AWAY.
4. ALL ARCHITECTURE IS SUBJECT TO PLANNING BOARD REVIEW.
5. NOTIFY ENGINEER 48 HOURS PRIOR TO INITIALIZATION OF ANY WORK ON SITE.
6. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT PRIOR REVIEW FROM THE ENGINEER.
7. CONTRACTOR IS RESPONSIBLE FOR EMPLOYING AND MAINTAINING ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING CONSTRUCTION.
8. CONTRACTOR IS RESPONSIBLE FOR PROPERLY & SAFELY MAINTAINING AREA BETWEEN ALL ADJOINING PROPERTIES.
9. NO WORK, STORAGE OR TRESPASS SHALL BE PERMITTED BEYOND THE SITE PROPERTY LINES OR PUBLIC RIGHT-OF-WAY.
10. ALL EXISTING LAWN AREA, CURBING, PAVING, SIDEWALKS, CULVERTS OR OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED BY TRENCHING OR EXCAVATION OPERATIONS SHALL BE REPLACED OR REPAIRED TO A CONDITION EQUAL TO EXISTING, AS DESCRIBED IN CONTRACT DOCUMENTS OR AS ORDERED BY ENGINEER (AOBE). MAILBOXES, SIGN POSTS, ETC SHALL BE PROTECTED OR REMOVED AND REPLACED EXACTLY AS THEY WERE BEFORE BEING DISTURBED. REMOVE AND REPLACE AFFECTED CURBING AND SIDEWALK TO NEAREST JOINT. REMOVE PAVEMENT AND REPLACE TO SAW CUT LINE, SAW CUT IN STRAIGHT LINE TO POINT NEEDED TO BLEND GRADE, REMOVE LAWN AND REPLACE TO MINIMUM LIMIT OF EXCAVATION.
11. THE HOURS OF OPERATION OF THE CONVENIENCE STORE AND GAS STATION SHALL BE LIMITED TO 24 HOURS.

LAYOUT :

1. BUILDING DIMENSIONS TO BE TAKEN FROM ARCHITECTURAL BUILDING PLANS. NOTIFY THE ENGINEER OF ANY DEVIATION FROM CONDITIONS SHOWN ON THIS PLAN.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL FIELD LAYOUT. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP AS BUILT PLANS FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES AND INVERTS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND THE ENGINEER AND THE CONTRACTOR SHALL PROVIDE ANY CORRECTION OR ADDITIONS TO THE SATISFACTION OF THE OWNER AND THE ENGINEER BEFORE UTILITIES WILL BE ACCEPTED.

PAVING:

1. NO VEHICULAR TRAFFIC OF ANY SORT SHALL BE PERMITTED ON THE SURFACE OF SUBBASE COURSE MATERIAL ONCE IT HAS BEEN FINE GRADED, COMPACTED, AND IS READY FOR PAVING. SUBBASE MATERIAL SO PREPARED FOR PAVING SHALL BE PAVED WITHIN THREE DAYS OF PREPARATION.
2. SUBBASE MATERIAL AND THE VARIOUS ASPHALT CONCRETE MATERIALS CALLED FOR IN THESE DRAWINGS SHALL CONFORM WITH THE REFERENCED SECTION OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED MAY 1, 2008. CONSTRUCTION SHALL BE AS FURTHER SET FORTH IN THOSE SPECIFICATIONS AND AS OTHERWISE PROVIDED FOR IN THESE DRAWINGS.
3. PLACE ASPHALT CONCRETE MIXTURE ON PREPARED SURFACE, SPREAD AND STRIKE-OFF USING A SELF-PROPELLED PAVING MACHINE, WITH VIBRATING SCREED. PLACEMENT IN INACCESSIBLE AND SMALL AREAS MAY BE BY HAND.
4. PROVIDE JOINTS BETWEEN OLD AND NEW PAVEMENTS OR BETWEEN SUCCESSIVE DAY'S WORK.
5. TACK COAT WHEN SPECIFIED OR CALLED OUT ON THE DRAWINGS OR REQUIRED BY THE REFERENCED SPECIFICATION SHALL CONFORM WITH THE FOLLOWING:
   - A. TACK COAT SHALL MEET THE MATERIAL REQUIREMENTS OF 702-90 ASPHALT EMULSION FOR TACK COAT OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED MAY 1, 2008, SHALL BE APPLIED IN ACCORDANCE WITH SECTION 407 – TACK COAT SHALL BE IN ACCORDANCE WITH THOSE SPECIFICATIONS AND AS OTHERWISE PROVIDED FOR IN THESE DRAWINGS.
   - B. REMOVE LOOSE AND FOREIGN MATERIAL FROM ASPHALT SURFACE BEFORE PAVING NEXT COURSE. USE POWER BROOMS, BLOWERS OR HAND BROOM.
   - C. APPLY TACK COAT TO ASPHALT PAVEMENT SURFACES & AND SURFACES OF CURBS, GUTTERS, MANHOLES, AND OTHER STRUCTURES PROJECTING INTO OR ABUTTING PAVEMENT, DRY TO A "TACKY" CONSISTENCY BEFORE PAVING.
   - D. TACK COAT ENTIRE VERTICAL SURFACE OF ABUTTING EXISTING PAVEMENT.
6. AFTER COMPLETION OF PAVING AND SURFACING OPERATIONS, CLEAN SURFACES OF EXCESS OR SPILLED ASPHALT, GRAVEL OR STONE MATERIALS TO THE SATISFACTION OF THE ENGINEER.

STRIPING:

1. STRIPE PAVEMENT AS INDICATED ON THE PLANS AND/OR IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REQUIREMENTS.
2. COLOR: DRIVE LANE DIVIDERS – WHITE OR AOBE
   NO PARKING ZONE WARNINGS – WHITE OR AOBE
   PARKING DIVIDERS – WHITE OR AOBE
   WALKING LINES – WHITE OR AOBE
   HANDICAP PARKING LINES & SYMBOL – BLUE

GRADING NOTES:

1. PRIOR TO SITE DISTURBANCE, CONTRACTOR TO INSTALL EROSION & SEDIMENT CONTROL MEASURES.
2. IF ROCK IS ENCOUNTERED DURING CONSTRUCTION & REMOVAL BY BLASTING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVALS AND PERMITS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
3. ALL BLASTING OPERATIONS WILL ADHERE TO NEW YORK STATE AND LOCAL AUTHORITY ORDINANCES GOVERNING THE USE OF EXPLOSIVES. THE STATE REGULATIONS ARE CONTAINED IN 12 NYCRR 39 AND INDUSTRIAL CODE RULE 753.
4. STRIP ALL TOPSOIL PRIOR TO COMMENCING EARTHWORK OPERATIONS. TOPSOIL MAY BE STORED AND REUSED IN LAWN AND PLANTING AREAS ONLY. TOPSOIL AND SEED ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE TO REMAIN GREEN.
5. BOX ALL TREES AND HOUSE ALL SHRUBS AND HEDGES BEFORE PLACING EARTH AGAINST OR NEAR THEM. ORNAMENTAL TREES, SHRUBS AND HEDGES WHICH MUST BE REMOVED DURING CONSTRUCTION SHALL BE HEALED IN AND RE-PLANTED IN AS GOOD A CONDITION AS THEY WERE BEFORE THEIR REMOVAL. ANY DAMAGED TREES, SHRUBS, AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
6. ALL EARTHWORK SHALL BE SMOOTHLY AND EVENLY BLENDED INTO EXISTING CONDITIONS. NO WORK, STORAGE OR TRESPASS SHALL BE PERMITTED BEYOND THE BOUNDARIES OF ANY EASEMENT OR PROPERTY LINE.
7. REMOVE ALL VEGETATION, TREES, STUMPS, GRASSES, ORGANIC SOILS, DEBRIS AND DELETERIOUS MATERIALS WITHIN THE AREAS SLATED FOR CONSTRUCTION.
8. IF PREVIOUSLY UNKNOWN CULTURAL, ARCHEOLOGICAL, OR HISTORIC REMAINS OR ARTIFACTS ARE DISCOVERED IN THE COURSE OF CONSTRUCTION OF THIS PROJECT, THE PROJECT SPONSORS SHALL SUSPEND CONSTRUCTION OPERATIONS IN THE PERTINENT AREA AND SHALL NOTIFY THE PROJECT ENGINEER. CONSTRUCTION IN THAT AREA SHALL RESUME ONLY AFTER COMPLETION OF FEDERAL, TRIBAL, AND STATE COORDINATION TO DETERMINE WHETHER PROTECTION OR RECOVERY OF THE REMAINS IS WARRANTED, OR WHETHER THE SITE IS ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES.

LANDSCAPING NOTES:

1. SEE SHEET C550 FOR ALL LANDSCAPING NOTES.

SITE LIGHTING NOTES:

1. SEE SHEET C180 FOR ALL LIGHTING NOTES.
2. SEE SHEET C550 FOR LIGHTING DETAILS.

UTILITY PLAN NOTES:

GENERAL CONSTRUCTION:

1. ALL UNDERGROUND UTILITIES ARE SHOWN IN THEIR RELATIVE POSITION AND ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY THEIR ACTUAL LOCATION IN THE FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. ANY CONDITION ENCOUNTERED IN THE FIELD DIFFERING FROM THOSE SHOWN HEREON, SHALL BE REPORTED TO THE DESIGN ENGINEER BEFORE CONSTRUCTION IS TO PROCEED.
3. SEWER MAINS IN RELATION TO WATER MAINS: WHERE POSSIBLE, SEWERS SHALL BE LAID AT LEAST 10 (TEN) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. VERTICAL SEPARATION SHALL BE MAINTAINED TO PROVIDE 18 (EIGHTEEN) INCHES BETWEEN TOP OF SEWER AND BOTTOM OF THE WATER MAIN AT UTILITY CROSSINGS. WHEN NOT POSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION, SEWER PIPE SHALL BE PRESSURE RATED AND TESTED @ 150psi, 10 (TEN) FEET ON EACH SIDE OF THE WATER MAIN BEING CROSSED.
4. ALL PROPOSED UTILITIES SHALL TERMINATE 5 FEET FROM ANY PROPOSED BUILDING FACE. CONTRACTOR TO COORDINATE WITH BUILDING PLANS FOR ANY CONNECTIONS.
5. ALL STORM SEWER SHALL BE SMOOTH INTERIOR HDPE UNLESS OTHERWISE SPECIFIED.
6. ALL GRAVITY SANITARY SEWER SHALL BE SDR 35 PVC UNLESS OTHERWISE SPECIFIED.
7. ALL WATER PIPES LESS THAN, OR EQUAL TO, 2-INCHES SHALL BE K-COPPER UNLESS OTHERWISE SPECIFIED.
8. CONTRACTOR TO VERIFY STATUS OF ALL UTILITY SERVICES PRIOR TO INTERRUPTION.
9. EXPLORATORY EXCAVATIONS SHALL BE PERFORMED BY THE CONTRACTOR AT ALL UTILITY CONNECTION LOCATIONS AND AS NEEDED TO VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK.
10. BEFORE CONSTRUCTING LINES TO CONNECT TO EXISTING UTILITIES, VERIFY EXISTING UTILITY INVERTS AND NOTIFY THE ENGINEER IF ANY VARIATION FROM THE PLAN IS REQUIRED.
11. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES IN SERVICE FOR THE DURATION OF THE WORK.
12. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS AND ASSOCIATED CONDITIONS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING UTILITY TRENCHES AND EXCAVATIONS AND FOR THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF THE WORK.
14. IF ROCK REMOVAL BY BLASTING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVALS AND PERMITS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

UNDERGROUND TANKS, CONTAMINATED SOIL, AND PIPING NOTES:

1. EXISTING UNDERGROUND TANKS, CONTAMINATED SOIL, AND PIPING TO BE REMOVED IN ACCORDANCE WITH FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS.

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

0 1 2 3
ORIGINAL SCALE IN INCHES

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rev.	date	description
1	06/29/22	REVISED PER DCDOH SUBMISSION

GAS LAND 5200 ROUTE 9W

NOTES & LEGENDS

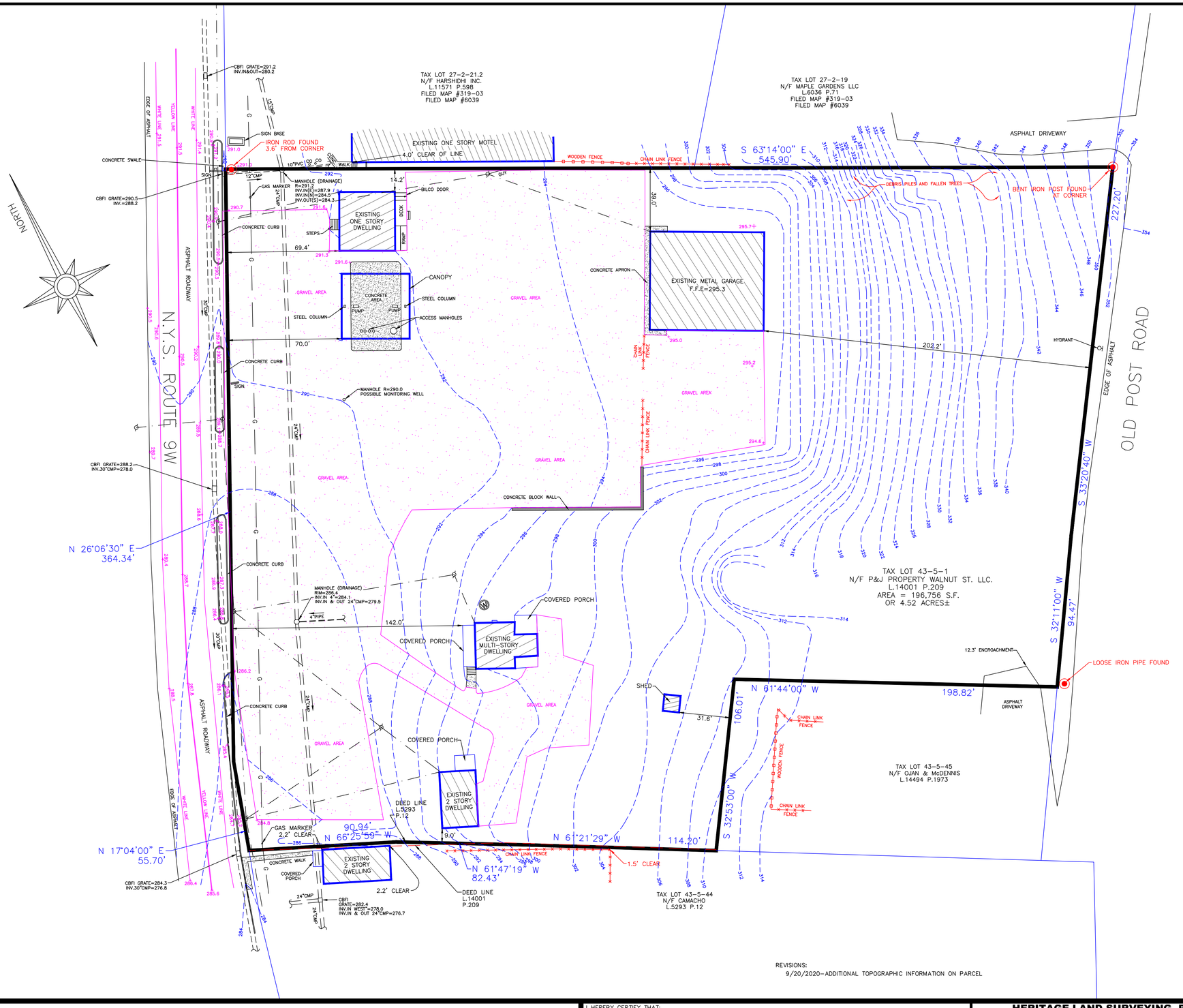
TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed SMD	checked CPL
date 01/20/22	scale 1"=20'
project no. 81912.00	
sheet no. G002	

Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_G002_81912-00_NOTES.dwg
Xref's Attached: XTB_30X42_81912-00
Date Printed: Jan 24, 2022, 8:29am

REFERENCES:

1. TOWN OF NEWBURGH TAX MAP SECTION 27 & 43.
2. DEEDS FILED IN THE ORANGE COUNTY CLERK'S OFFICE:
   L.14001 P.209
   L.14494 P.1973
   L.5293 P.12
   L.11571 P.598
   L.6036 P.71
3. MAPS FILED IN THE ORANGE COUNTY CLERK'S OFFICE:
   MAP #319-03
   MAP #6039



REVISIONS:
9/20/2020- ADDITIONAL TOPOGRAPHIC INFORMATION ON PARCEL

LEGEND

490	DENOTES EXISTING CONTOUR LINE
X X X	DENOTES EXISTING CHAIN LINK FENCE
□ □ □	DENOTES EXISTING WOODEN FENCE
	DENOTES EXISTING UTILITY POLE
CO	DENOTES EXISTING CLEANOUT
490.0+	DENOTES EXISTING SPOT GRADE
- -	DENOTES EXISTING OVERHEAD WIRES
W	DENOTES EXISTING WELL

0 1 2 3
ORIGINAL SIZE IN INCHES

..\..\SurveyDivision\seal (2).tif

I HEREBY CERTIFY THAT:
THIS MAP OR PLAT IS BASED UPON THE FIELD NOTES OF THE SURVEY AND OTHER REFERENCES SHOWN.
ALL RECORDED EASEMENTS OR RIGHTS-OF-WAY AS SHOWN IN THE TITLE REPORT AND OTHER REFERENCES ARE SHOWN.
ALL OBSERVABLE EVIDENCE OF EASEMENTS ON THE GROUND ARE SHOWN.
ALL OBSERVABLE, ABOVE GROUND EVIDENCE OF BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS ARE SHOWN.

UNAUTHORIZED ALTERATION TO A MAP BEARING A LICENSED PROFESSIONAL LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
THIS CERTIFICATION IS NOT AN EXPRESS OR IMPLIED WARRANTY OR GUARANTEE, IT IS PURELY A STATEMENT OF PROFESSIONAL OPINION BASED ON KNOWLEDGE, INFORMATION AND BELIEF, BASED ON EXISTING FIELD EVIDENCE AND DOCUMENTARY EVIDENCE AVAILABLE.
CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
PLAN PREPARED PURSUANT TO SECTION 7208m OF THE NEW YORK STATE EDUCATION LAW.
SUBJECT TO THE FINDINGS OF TITLE REPORT M-052439 PREPARED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY.

Darren Stridiron

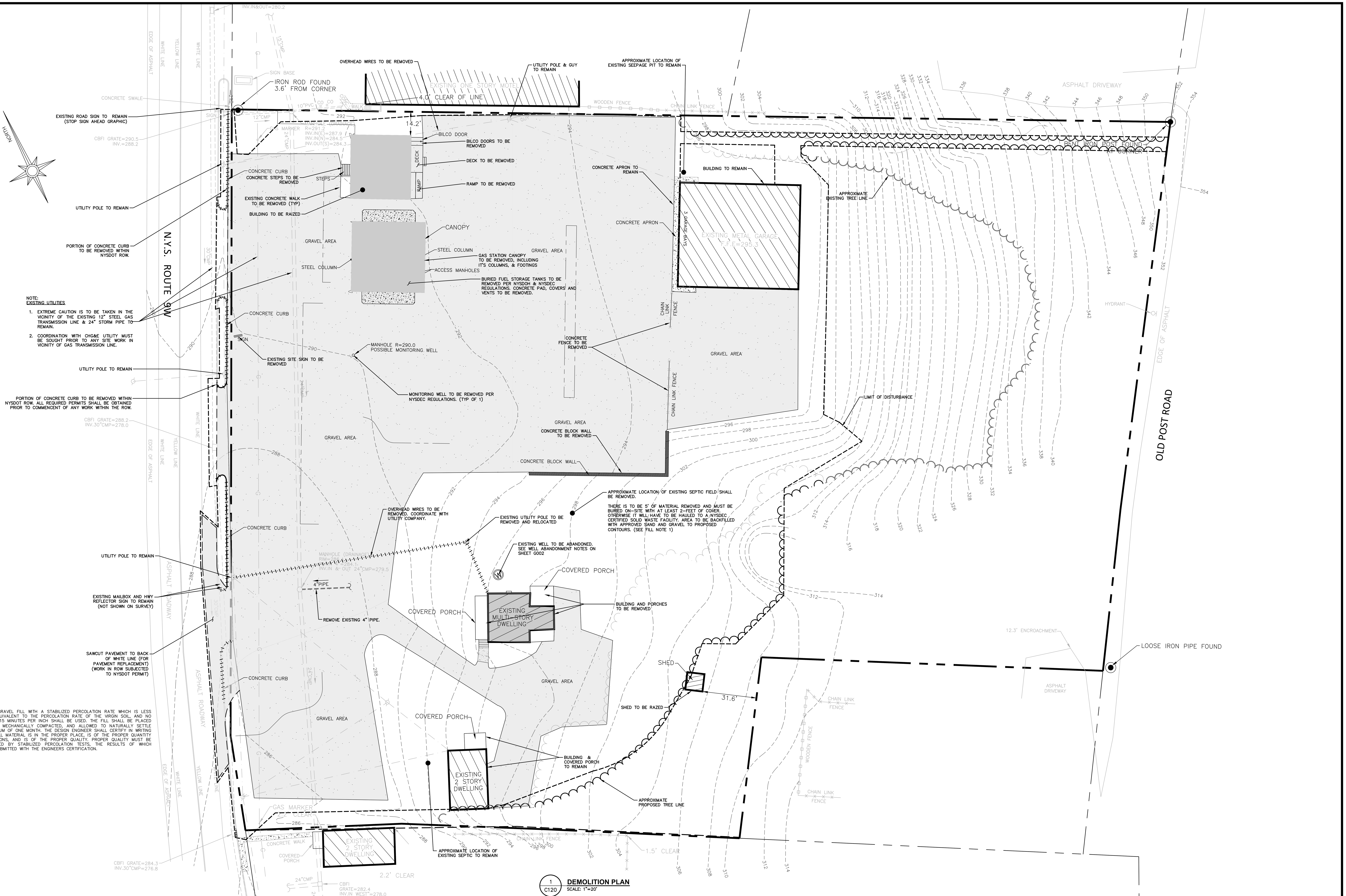
DARREN J. STRIDIRON, PROFESSIONAL LAND SURVEYOR
NEW YORK STATE LICENSE No. 050487

HERITAGE LAND SURVEYING, P.C.
P.O. BOX 579 PLATTEKILL, NEW YORK 12568
TEL (845)562-4148, FAX (845)562-4148, e-mail: heritagesurvey@hotmail.com

SURVEY OF PROPERTY

5200 ROUTE 9W
LOCATED AT
TAX LOT 43-5-1
TOWN OF NEWBURGH
COUNTY OF ORANGE, NEW YORK

Date	Work Order	Drawing No.	SHEET
10/21/19	2019-053	2019-053S2	1
Scale 1"= 30'			



NOTE:
EXISTING UTILITIES

1. EXTREME CAUTION IS TO BE TAKEN IN THE VICINITY OF THE EXISTING 12" STEEL GAS TRANSMISSION LINE & 24" STORM PIPE TO REMAIN.
2. COORDINATION WITH CHG&E UTILITY MUST BE SOUGHT PRIOR TO ANY SITE WORK IN VICINITY OF GAS TRANSMISSION LINE.

FILL NOTES:

1. SAND AND GRAVEL FILL WITH A STABILIZED PERCOLATION RATE WHICH IS LESS THAN OR EQUIVALENT TO THE PERCOLATION RATE OF THE VIRGIN SOIL, AND NO MORE THAN 15 MINUTES PER INCH SHALL BE USED. THE FILL SHALL BE PLACED IN 6" LIFTS, MECHANICALLY COMPACTED, AND ALLOWED TO NATURALLY SETTLE FOR A MINIMUM OF ONE MONTH. THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE FILL MATERIAL IS IN THE PROPER PLACE, IS OF THE PROPER QUANTITY AND DIMENSIONS, AND IS OF THE PROPER QUALITY. PROPER QUALITY MUST BE DEMONSTRATED BY STABILIZED PERCOLATION TESTS, THE RESULTS OF WHICH SHALL BE SUBMITTED WITH THE ENGINEERS CERTIFICATION.

1 / C120 **DEMOLITION PLAN**
SCALE: 1"=20'

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

0 1 2 3
ORIGINAL SCALE IN INCHES

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1 12/26/18 REVISED PER PLANNING BOARD COMMENTS

rev.	date	description

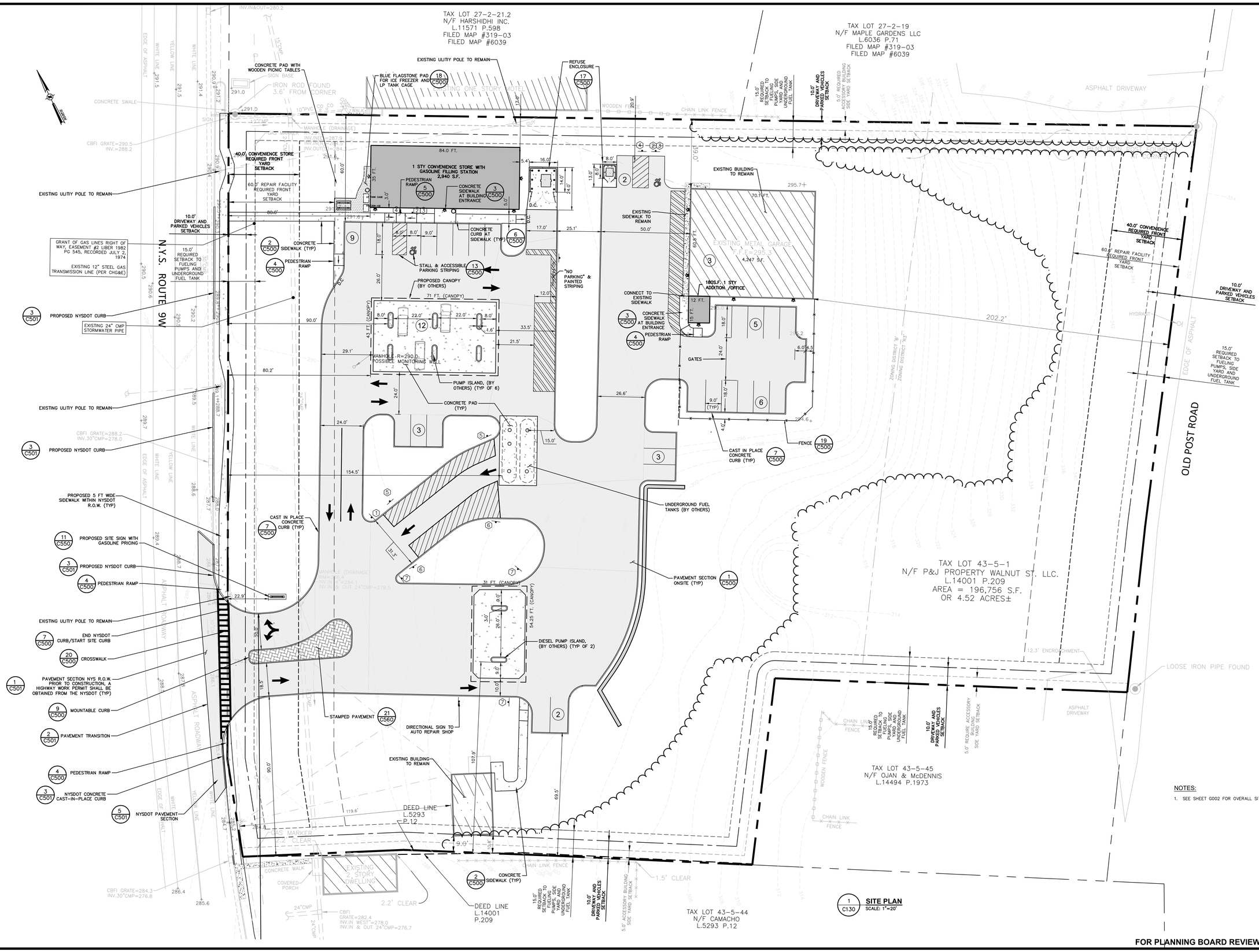
GAS LAND 5200 ROUTE 9W

DEMOLITION PLAN

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SMD	CPL
date 01/20/22	scale 1"=20'
project no. 81912.00	
sheet no. C120	

Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C120_81912-00_DEMO.dwg
Xref's Attached: XTB_30X42_81912-00; XBASE-ENG_81912-00_Stridiron; XLAYOUT_81912-00; XENG_81912-00
Date Printed: Jan 24, 2022, 8:30am



1 C130 **SITE PLAN**
SCALE: 1"=20'

NOTES:

1. SEE SHEET G002 FOR OVERALL SITE NOTES.

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

ORIGINAL SCALE IN INCHES (0, 1, 2, 3)

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rev.	date	description

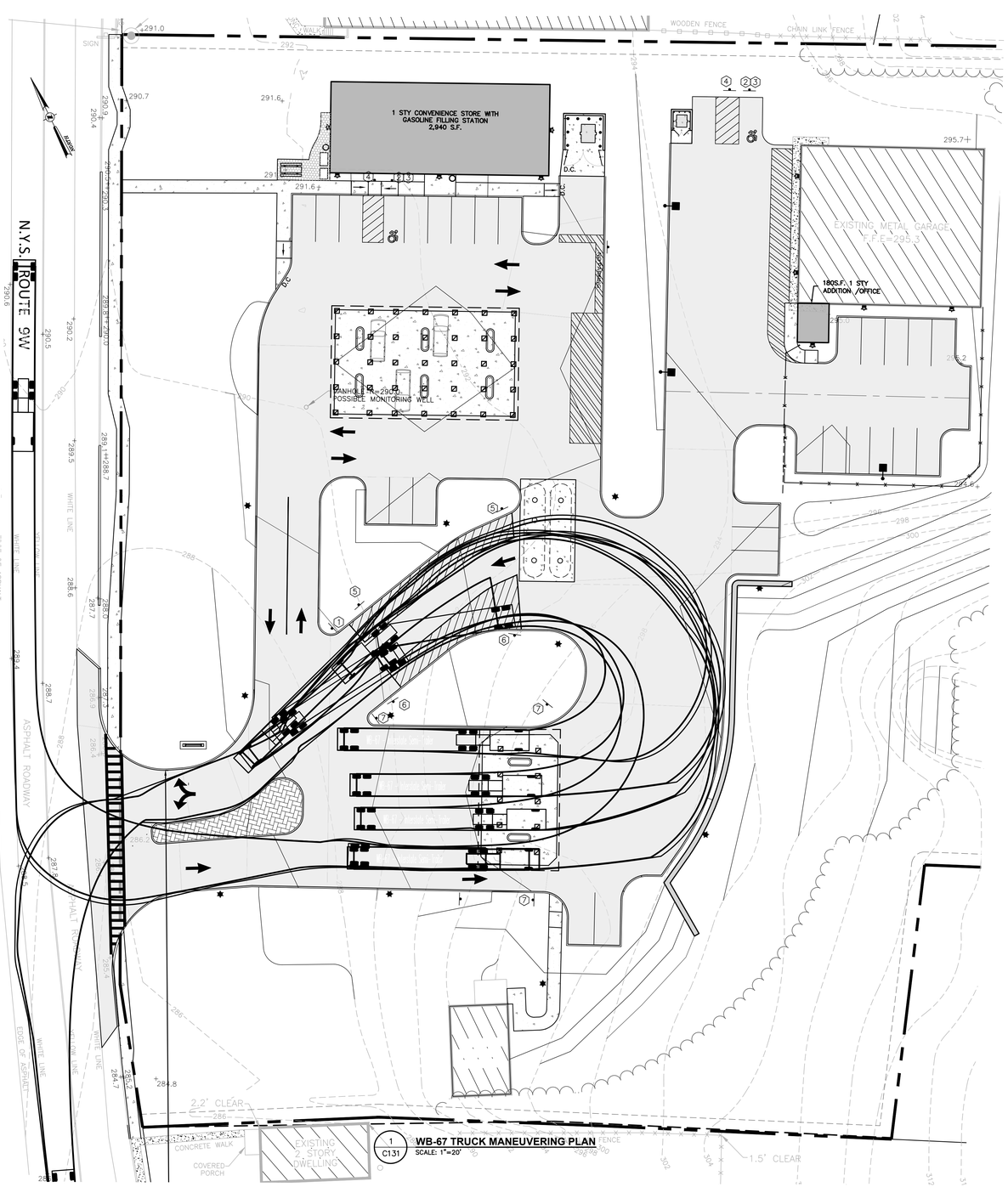
GAS LAND 5200 ROUTE 9W

SITE PLAN

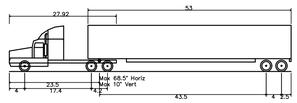
TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SPL	CPL
date	scale
01/20/22	1"=20'
project no.	81912.00
sheet no.	C130

Drawing Name: Z:\projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C130_81912-00_SITE.dwg
Xref's Attached: XBASE=ENG_81912-00_Stridron; XLAYOUT_81912-00; XTB_30X42_81912-00; XLAYOUT_to be revised
Date Printed: Jan 24, 2022, 10:46am



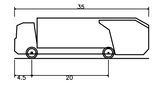
1 C131 **WB-67 TRUCK MANEUVERING PLAN**
SCALE: 1"=20'



WB-67 – Interstate Semi-Trailer

Overall Length	73.500ft
Overall Width	8.500ft
Overall Body Height	12.952ft
Min Body Ground Clearance	1.333ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

2 C131 **GARBAGE TRUCK MANEUVERING PLAN**
SCALE: 1"=20'



Rear-Load Garbage Truck

Overall Length	35.000ft
Overall Width	8.375ft
Overall Body Height	10.5466ft
Min Body Ground Clearance	1.000ft
Track Width	8.375ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	29.300ft

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

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07/08/19 SHEET ADDED TO PLAN

rev.	date	description

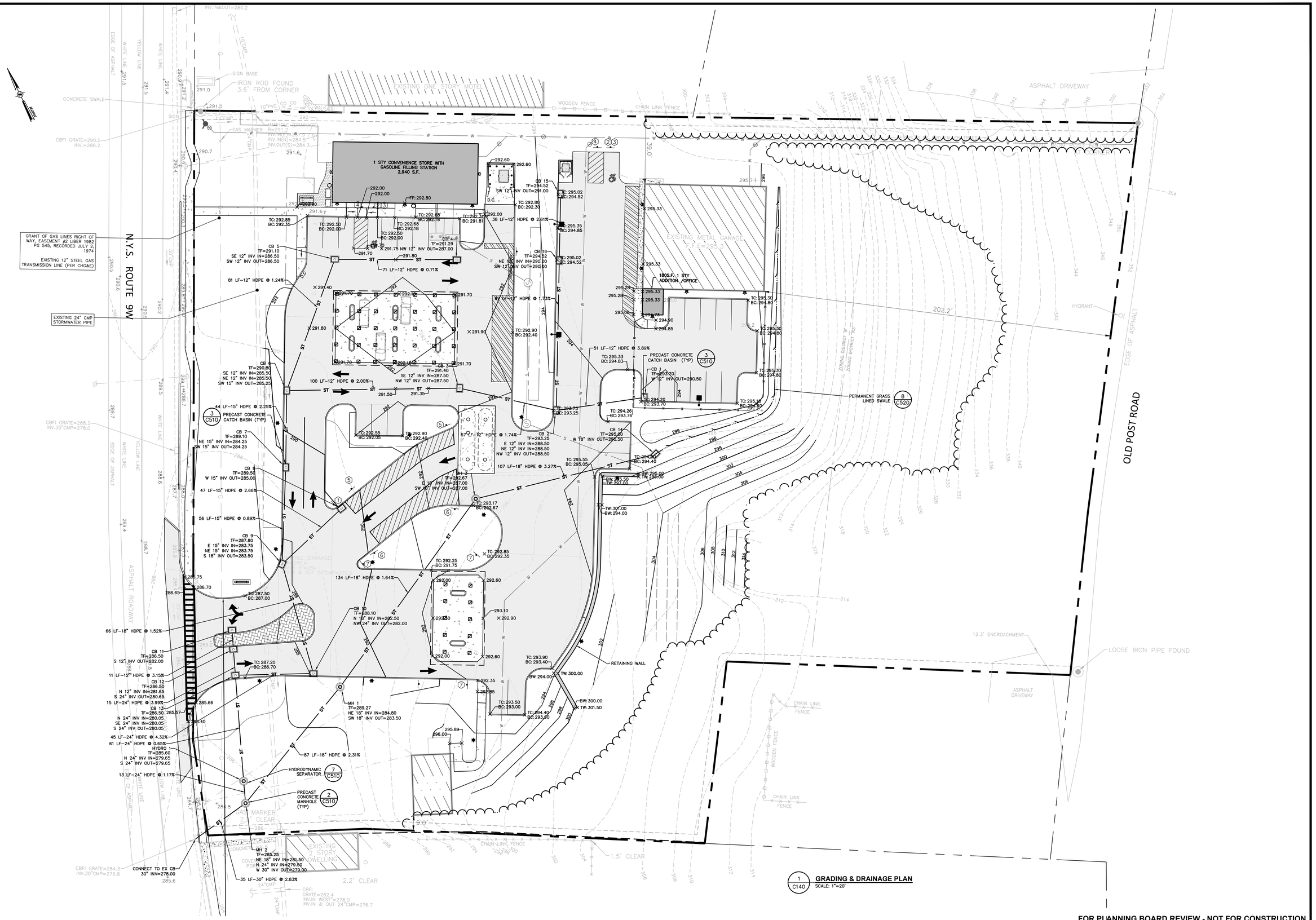
GAS LAND 5200 ROUTE 9W

TRUCK AND VEHICLE MANUEVERING PLAN

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked CPL
date 01/20/22	scale 1"=20'
project no. 81912.00	
sheet no. C131	

Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\OS_PLAN_C131_81912-00_TRUCK.dwg
Xref's Attached: XBASE-ENG_81912-00_Shldrsrc XLAYOUT_81912-00 XTB_30X42_81912-00 XENG_81912-00
Date Printed: Jan 24, 2022, 10:46am



1 C140 **GRADING & DRAINAGE PLAN**
SCALE: 1"=20'

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rev.	date	description

GAS LAND 5200 ROUTE 9W

GRADING & DRAINAGE PLAN

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SPL	CPL
date	scale
01/20/22	1"=20'
project no.	
81912.00	
sheet no.	
C140	

Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C140_81912-00_GRAD-DRAIN.dwg
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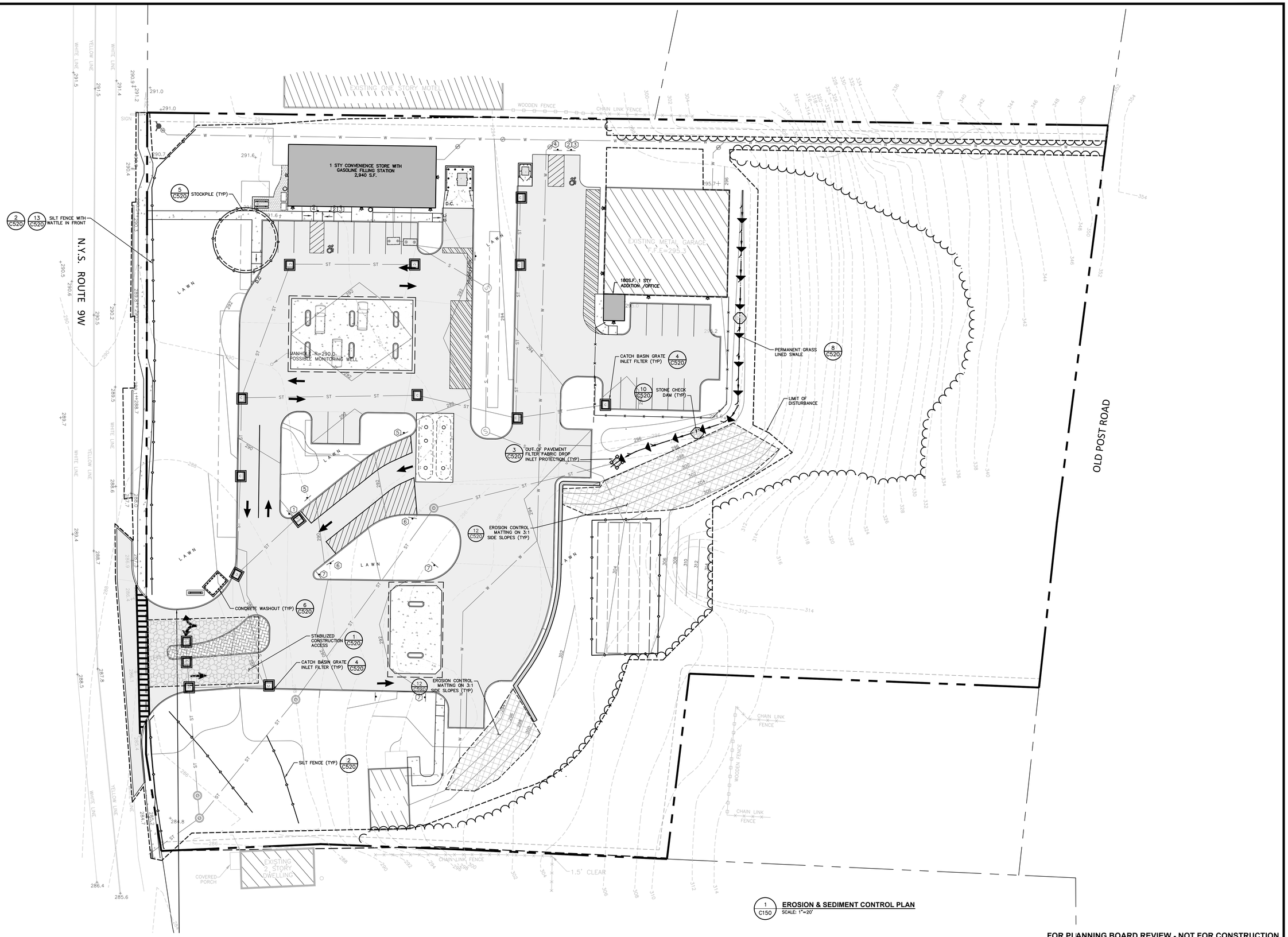

1 C150 **EROSION & SEDIMENT CONTROL PLAN**
SCALE: 1"=20'

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

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rev.	date	description

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EROSION & SEDIMENT CONTROL PLAN

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SPL	CPL
date	scale
01/20/22	1"=20'
project no.	
81912.00	
sheet no.	
C150	

Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C150_81912-00_EROS.dwg
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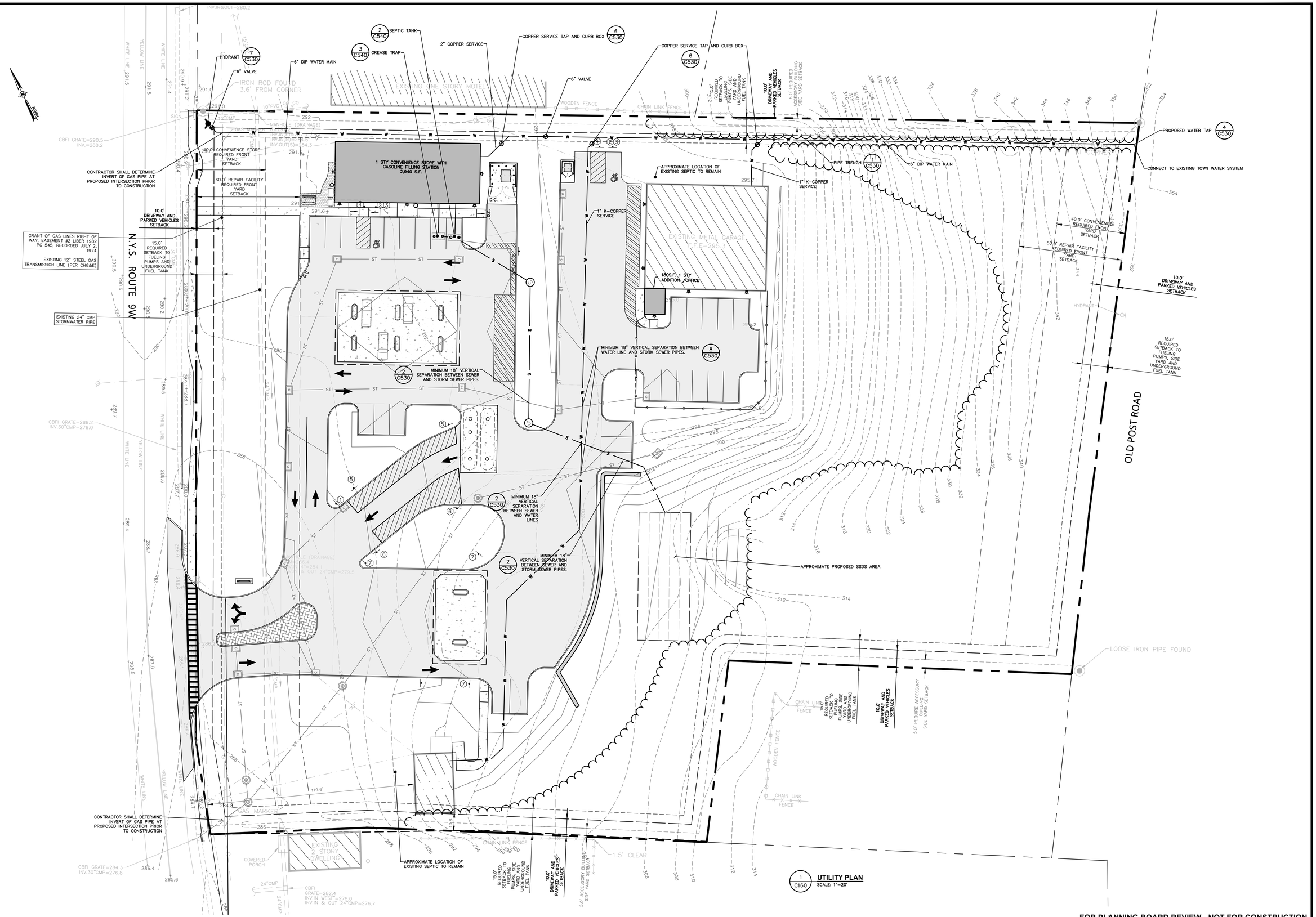
Date Printed: Jan 24, 2022, 10:47am



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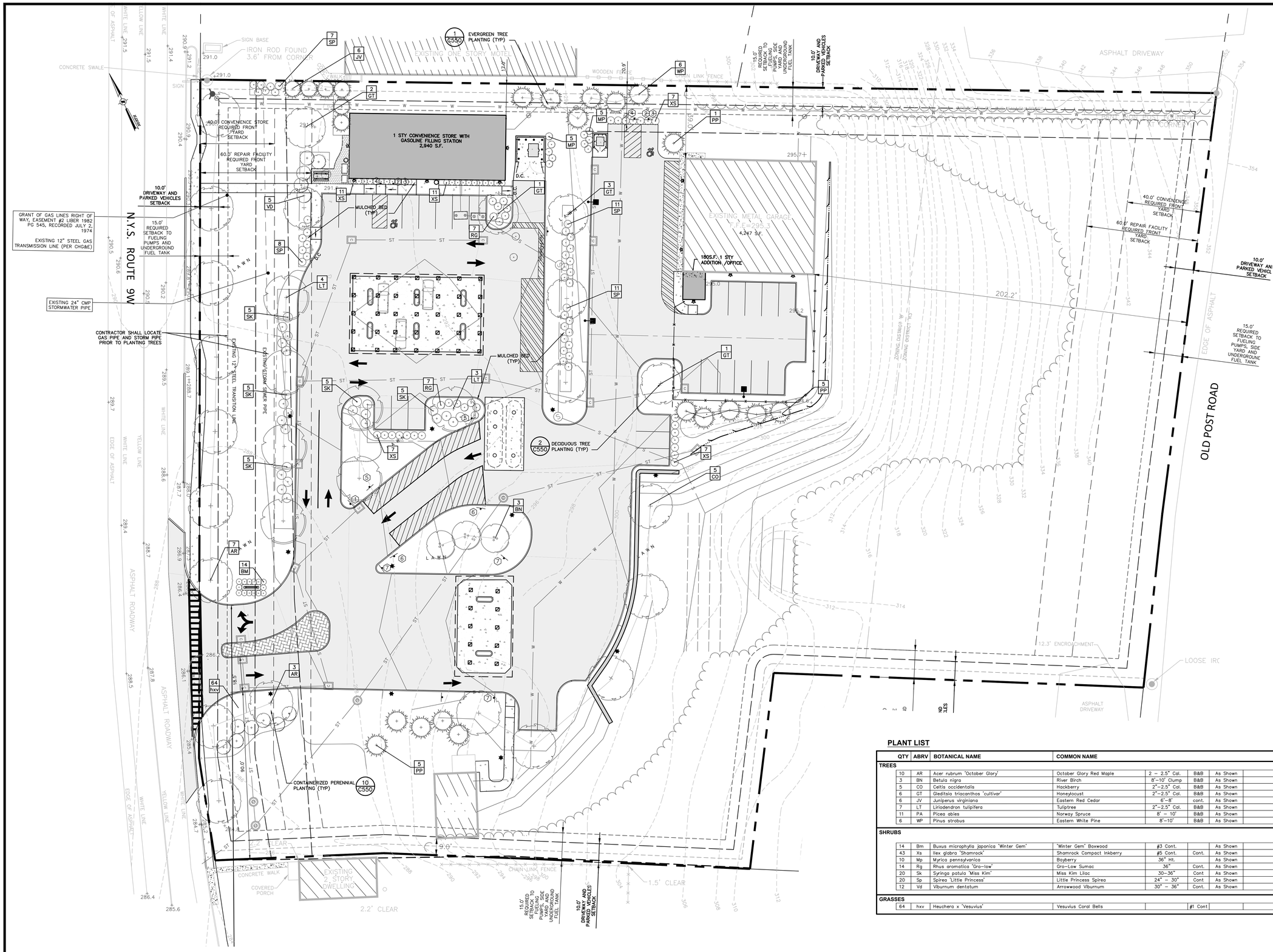
UTILITY PLAN

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SPL	CPL
date	scale
01/20/22	1"=20'
project no.	
81912.00	
sheet no.	
C160	

0 1 2 3
ORIGINAL SCALE IN INCHES

Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C160_81912-00_UTIL.dwg
Xref's Attached: XBASE-ENG_81912-00_Sridron; XLAYOUT_81912-00; XTB_30X42_81912-00; XLAYOUT_to be revised; XENG_81912-00
Date Printed: Jan 24, 2022, 10:47am



1 C170 **LANDSCAPE PLAN**
SCALE: 1"=20'

PLANT LIST

QTY	ABRV	BOTANICAL NAME	COMMON NAME				
TREES							
10	AR	Acer rubrum 'October Glory'	October Glory Red Maple	2 – 2.5" Cal.	B&B	As Shown	
3	BN	Betula nigra	River Birch	8'–10' Clump	B&B	As Shown	
5	CO	Celtis occidentalis	Hackberry	2"–2.5" Cal.	B&B	As Shown	
6	GT	Gleditsia triacanthos 'cultivar'	Honeylocust	2"–2.5" Cal.	B&B	As Shown	
6	JV	Juniperus virginiana	Eastern Red Cedar	6'–8'	cont.	As Shown	
7	LT	Liriodendron tulipifera	Tuliptree	2"–2.5" Cal.	B&B	As Shown	
11	PA	Picea abies	Norway Spruce	8' – 10'	B&B	As Shown	
6	WP	Pinus strobus	Eastern White Pine	8'–10'	B&B	As Shown	
SHRUBS							
14	Bm	Buxus microphylla japonica 'Winter Gem'	'Winter Gem' Boxwood	#3 Cont.		As Shown	
43	Xs	Ilex glabra 'Shamrock'	Shamrock Compact Inkberry	#5 Cont.	Cont.	As Shown	
10	Mp	Myrica pennsylvanica	Bayberry	36" Ht.		As Shown	
14	Rg	Rhus aromatica 'Gro–low'	Gro–Low Sumac	36"	Cont.	As Shown	
20	Sk	Syringa patula 'Miss Kim'	Miss Kim Lilac	30–36"	Cont	As Shown	
20	Sp	Spirea 'Little Princess'	Little Princess Spirea	24" – 30"	Cont	As Shown	
12	Vd	Viburnum dentatum	Arrowwood Viburnum	30" – 36"	Cont.	As Shown	
GRASSES							
64	hxv	Heuchera x 'Vesuvius'	Vesuvius Coral Bells		#1 Cont		

2 C170 **LANDSCAPE SCHEDULE**
SCALE: NOT TO SCALE

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

0 1 2 3
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rev.	date	description

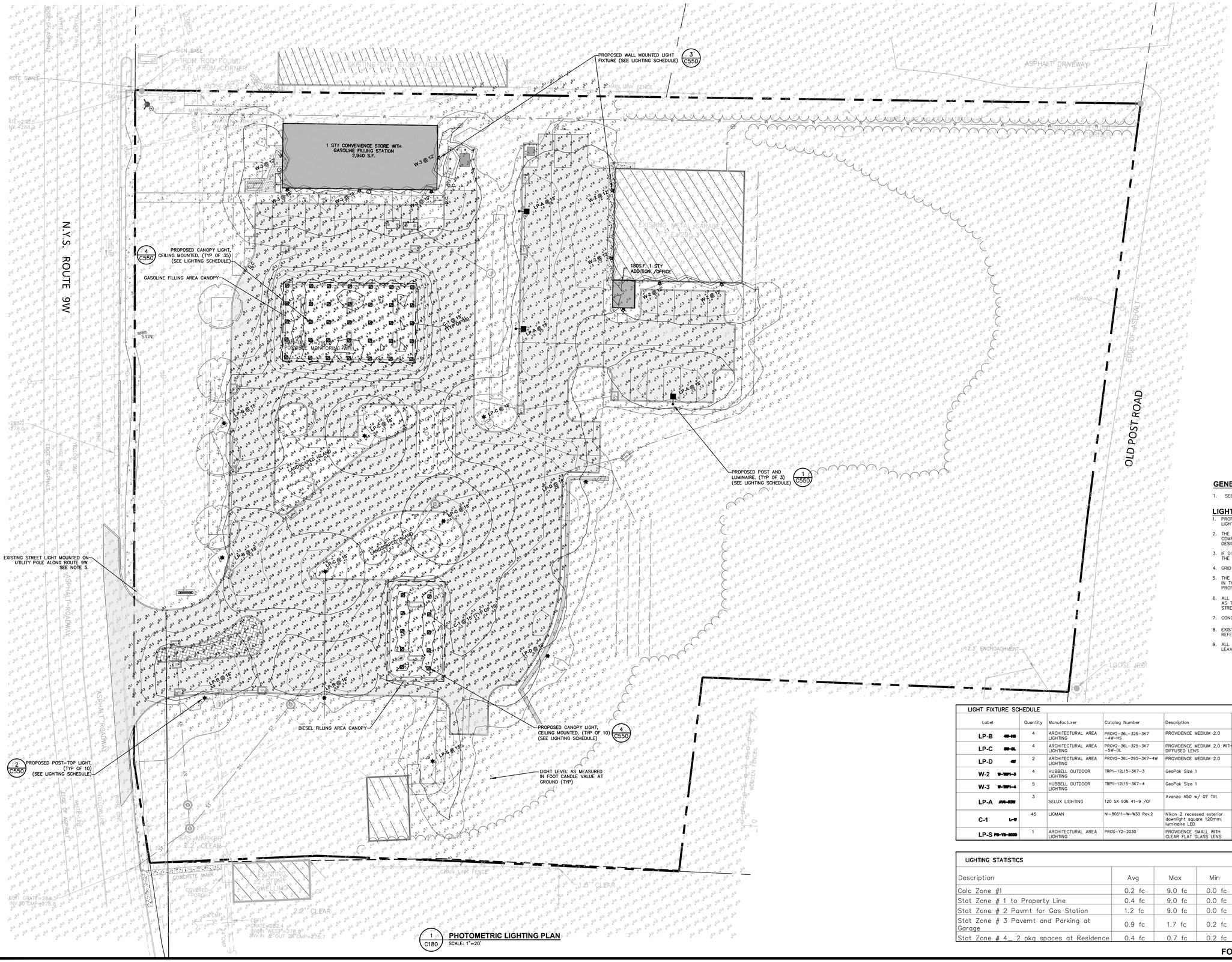
GAS LAND 5200 ROUTE 9W

LANDSCAPE PLAN

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
	CPL
date	scale
01/20/22	1"=20'
project no.	
81912.00	
sheet no.	
C170	

Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C170_81912-00_LANDSC.dwg
Xref's Attached: XTB_30X42_81912-00; XLAYOUT_81912-00; XBASE-ENG_81912-00_Stridron; XENG_81912-00
Date Printed: Jan 24, 2022, 10:47am



1 C180 **PHOTOMETRIC LIGHTING PLAN**
SCALE: 1"=20'

GENERAL NOTES:

1. SEE SHEET C550 FOR LIGHTING & LANDSCAPING DETAILS AND NOTES.

LIGHTING NOTES:

1. PROPOSED LIGHTING AS MANUFACTURED BY ARCHITECTURAL AREA LIGHTING, SELUX LIGHTING, HUBBELL LIGHTING, AND LIGMAN LIGHTING.
2. THE LIGHTING FIXTURES, SURFACE LOCATIONS ARE IDENTIFIED BY THE CHAZEN COMPANIES. DETAILED DESIGN OF THE LIGHTING SPECIFICATIONS, FOUNDATION DESIGN, LIGHTING CONDUIT, WIRING, AND CONTROL CIRCUITRY SHALL BE BY OTHERS.
3. IF DISCREPANCIES EXIST BETWEEN THE LIGHTING SCHEDULE AND LIGHTING PLAN, THE PLAN SHALL DICTATE.
4. GRID NUMBERS SHOWN REPRESENT FOOT-CANDLE VALUES AT GROUND PLANE.
5. THE EXISTING STREET LIGHTS IN THE RIGHT-OF-WAYS HAVE NOT BEEN INCLUDED IN THIS PHOTOMETRIC ANALYSIS. THE LIGHT LEVELS SHOWN HEREON REFLECT THE PROPOSED LIGHTING ON SITE.
6. ALL LIGHTING SHOWN ON THIS PLAN SHALL BE DIRECTED AND/OR SHIELDED SO AS TO PREVENT OBJECTIONABLE GLARE FROM BEING OBSERVABLE FROM ADJOINING STREETS AND PROPERTIES.
7. CONCRETE LIGHT BASE PER MANUFACTURER.
8. EXISTING AND PROPOSED UTILITIES NOT SHOWN ON THIS SHEET FOR CLARITY. REFER TO SHEET C160 FOR UTILITY PLANS.
9. ALL NON-ESSENTIAL LIGHTING SHALL BE TURNED-OFF AFTER BUSINESS HOURS, LEAVING ON ONLY THE NECESSARY LIGHTING FOR SITE SECURITY.

LIGHT FIXTURE SCHEDULE

Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	MOUNT HEIGHT	Light Loss Factor	Wattage	Notes
LP-B	4	ARCHITECTURAL AREA LIGHTING	PROV2-36L-325-3K7-4W-HS	PROVIDENCE MEDIUM 2.0	1	2225	1	0.92	37.82	MEDIUM POST TOP, HOUSE-SIDE SHIELD
LP-C	4	ARCHITECTURAL AREA LIGHTING	PROV2-36L-325-3K7-5W-DL	PROVIDENCE MEDIUM 2.0 WITH DIFFUSED LENS	1	2466	1	0.92	37.73	MEDIUM POST TOP
LP-D	2	ARCHITECTURAL AREA LIGHTING	PROV2-36L-295-3K7-4W	PROVIDENCE MEDIUM 2.0	1	3498	1	0.92	34.1	MEDIUM POST TOP
W-2	4	HUBBELL OUTDOOR LIGHTING	TRP1-12L15-3K7-3	GeoPak Size 1	1	1478	1	0.92	13.9	WALL-MOUNTED, SMALL
W-3	5	HUBBELL OUTDOOR LIGHTING	TRP1-12L15-3K7-4	GeoPak Size 1	1	1471	1	0.92	13.9	WALL-MOUNTED, SMALL
LP-A	3	SELUX LIGHTING	120 SX 936 41-9 /CF	Avanza 450 w/ 0? Tilt	1	2755	1	0.92	38	POST & LUMINAIRE
C-1	45	LIGMAN	NI-80511-W-W30 Rev.2	Nikon 2 recessed exterior downlight square 120mm, luminaire LED	1	753	1	0.92	12.5	CANOPY LIGHTS
LP-S	1	ARCHITECTURAL AREA LIGHTING	PROS-Y2-2030	PROVIDENCE SMALL WITH CLEAR FLAT GLASS LENS	1	1792	1	0.95	25.1	SMALL POST TOP

LIGHTING STATISTICS

Description	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	0.2 fc	9.0 fc	0.0 fc	N/A	N/A
Stat Zone # 1 to Property Line	0.4 fc	9.0 fc	0.0 fc	N/A	N/A
Stat Zone # 2 Pavmt for Gas Station	1.2 fc	9.0 fc	0.0 fc	N/A	N/A
Stat Zone # 3 Pavemt and Parking at Garage	0.9 fc	1.7 fc	0.2 fc	8.5:1	4.5:1
Stat Zone # 4_ 2 pkg spaces at Residence	0.4 fc	0.7 fc	0.2 fc	3.5:1	2.0:1

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

0 1 2 3
ORIGINAL SCALE IN INCHES

CHAZEN ENGINEERING, LAND SURVEYING, LANDSCAPE ARCHITECTURE & GEOLOGY CO., D.P.C.
THE Chazen COMPANIES
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White Plains, NY
New York City, NY

rev.	date	description

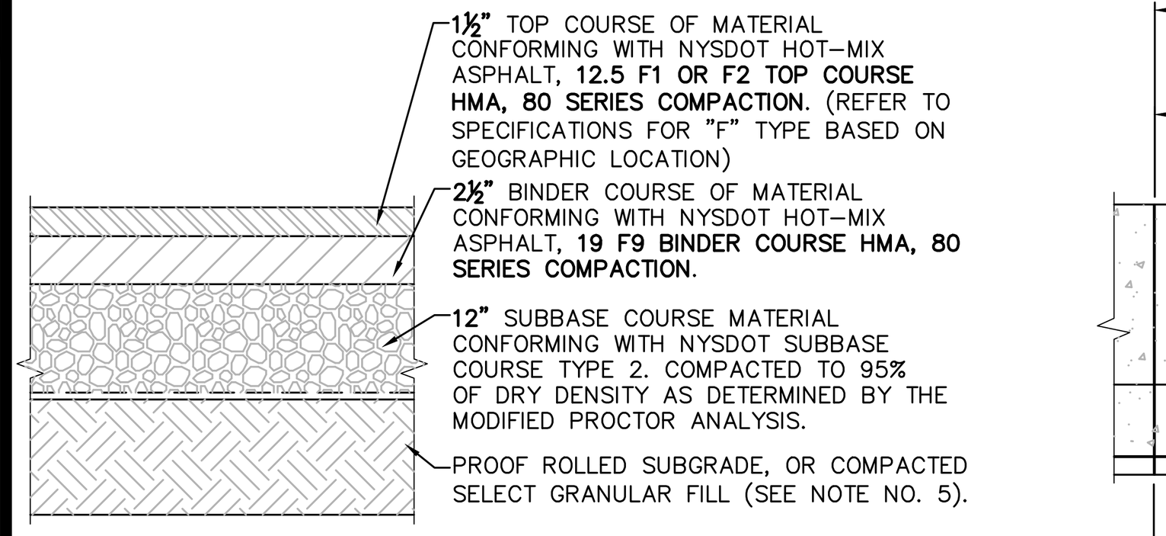
GAS LAND 5200 ROUTE 9W

PHOTOMETRIC LIGHTING PLAN

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

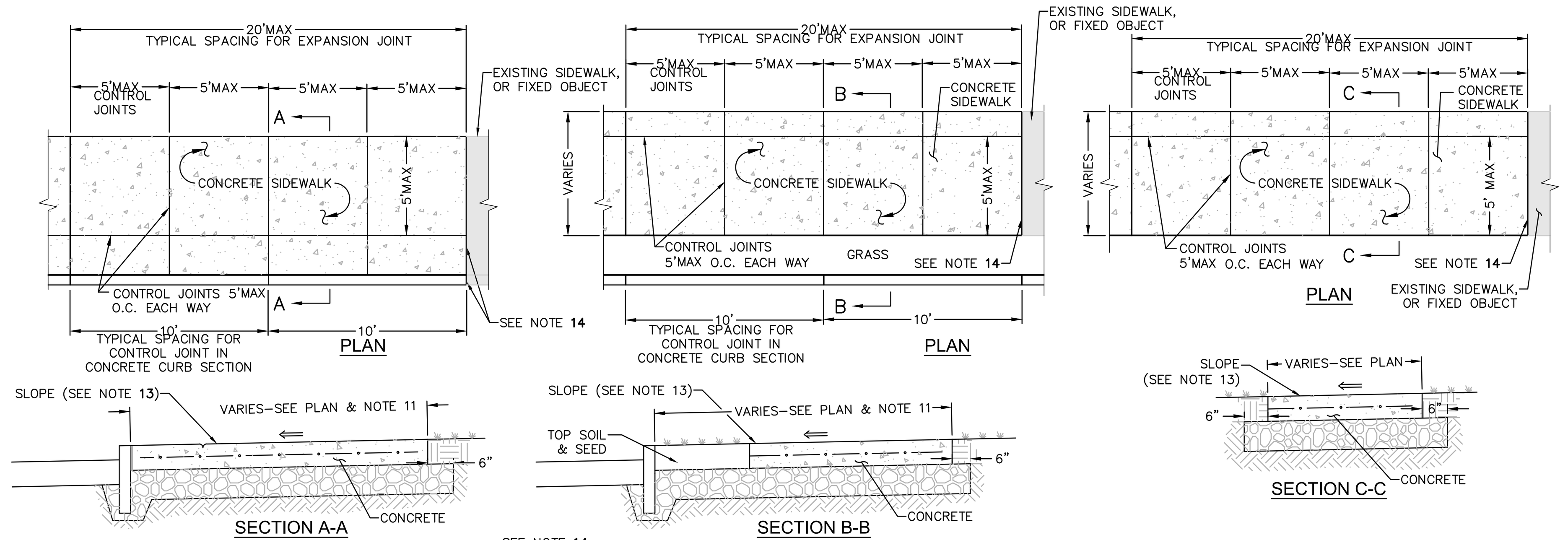
designed	checked
SD	CPL
date	scale
01/20/22	1"=20'
project no.	
81912.00	
sheet no.	
C180	

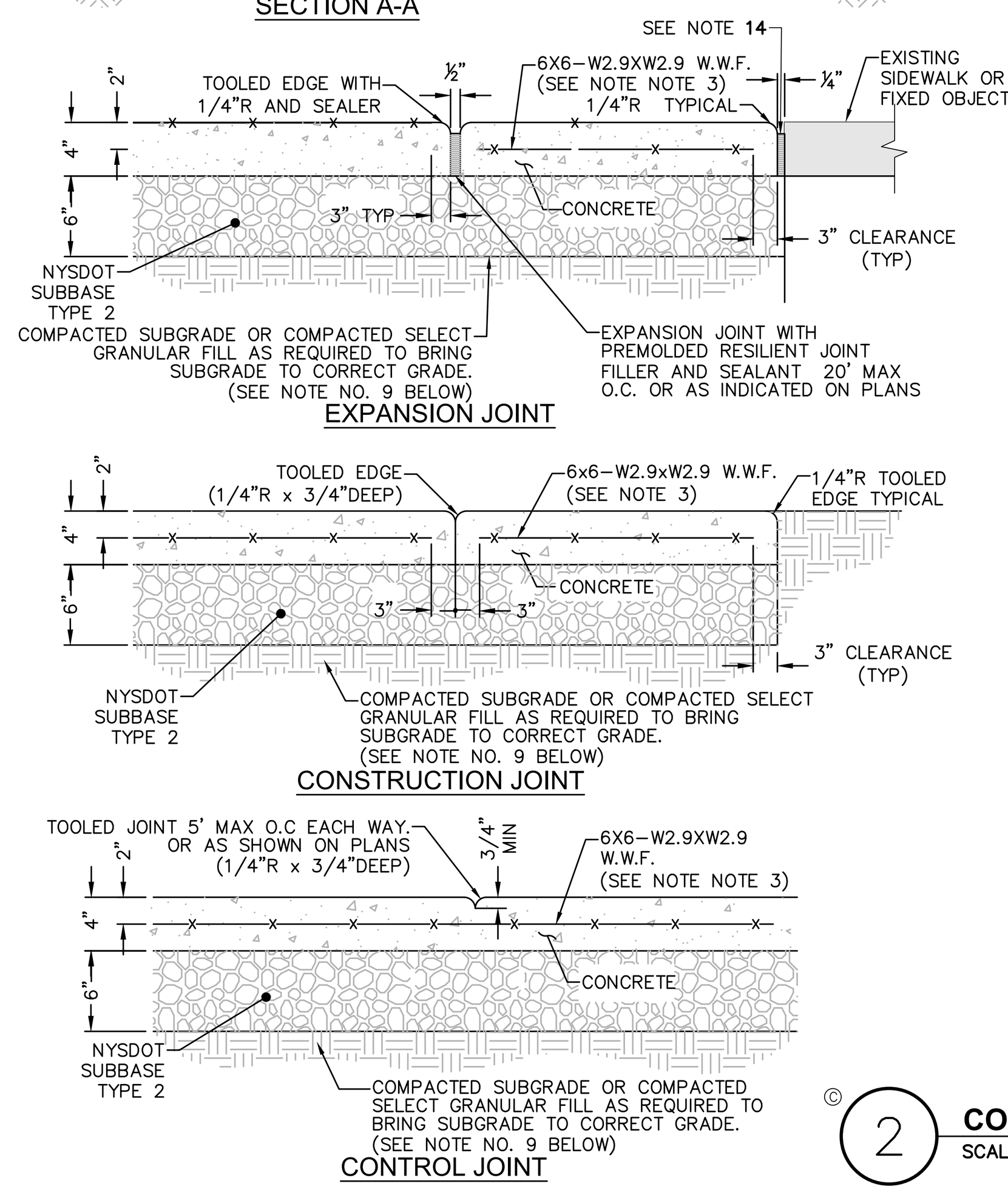
Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C180_81912DD_PHOTOMTR.dwg
Xref's Attached: XBASE-ENG_81912-00_Slridron; XLAYOUT_81912-00; XTB_3DX42_81912-00; XENG_81912-00; XPHOTMTRC_81912-00
Date Printed: Jan 24, 2022, 10:48am

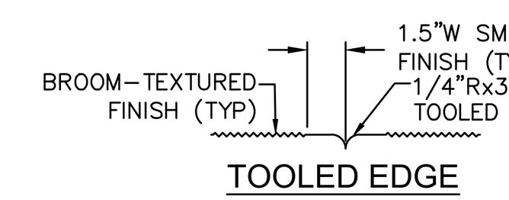


NOTES:
1. MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED **"CURRENT VERSION"**, AND ALL ADDENDA THERE TO.
2. SUBBASE MATERIAL SHALL CONFORM WITH **SECTION 304** –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

1 PAVEMENT SECTION DETAIL
SCALE: NOT TO SCALE

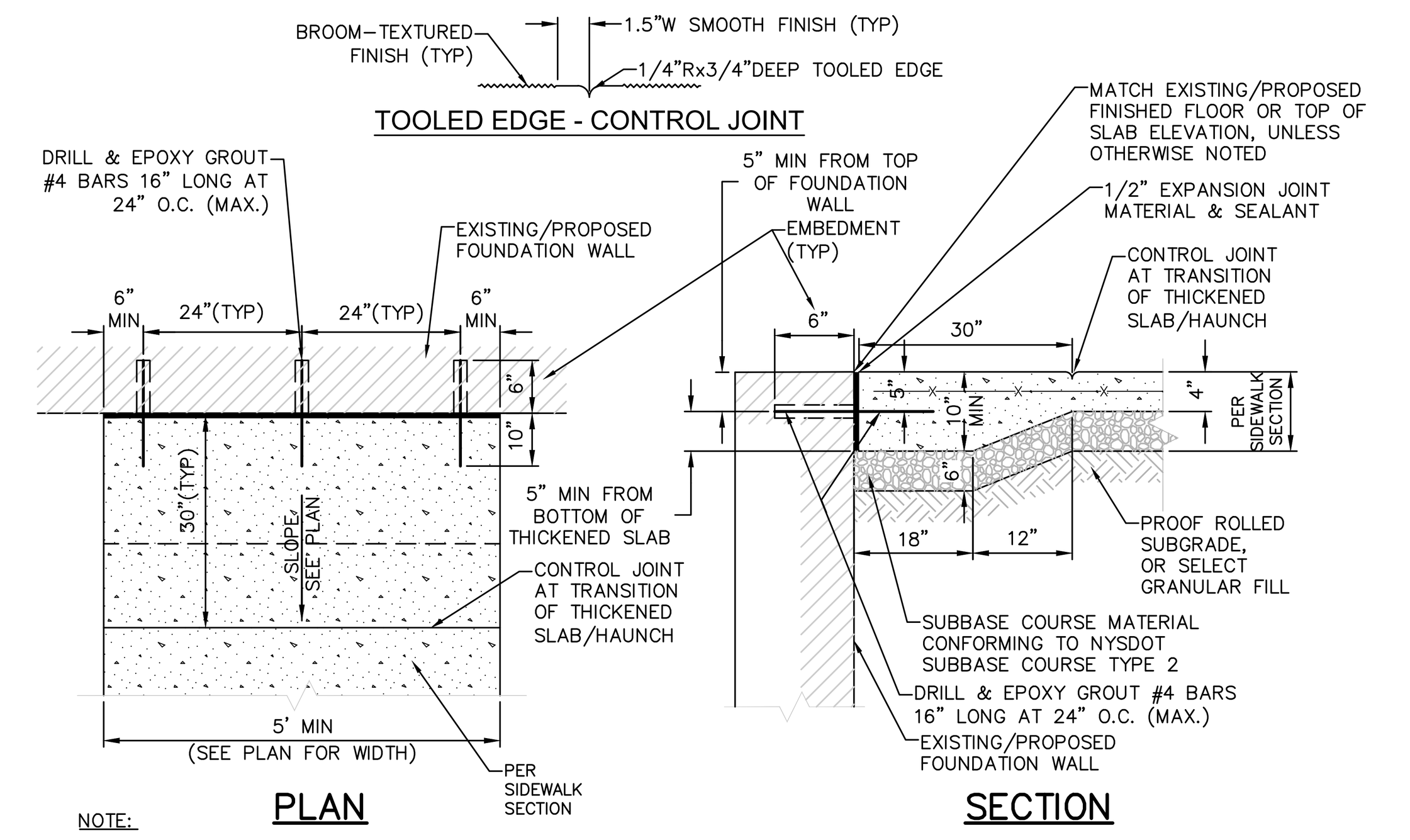






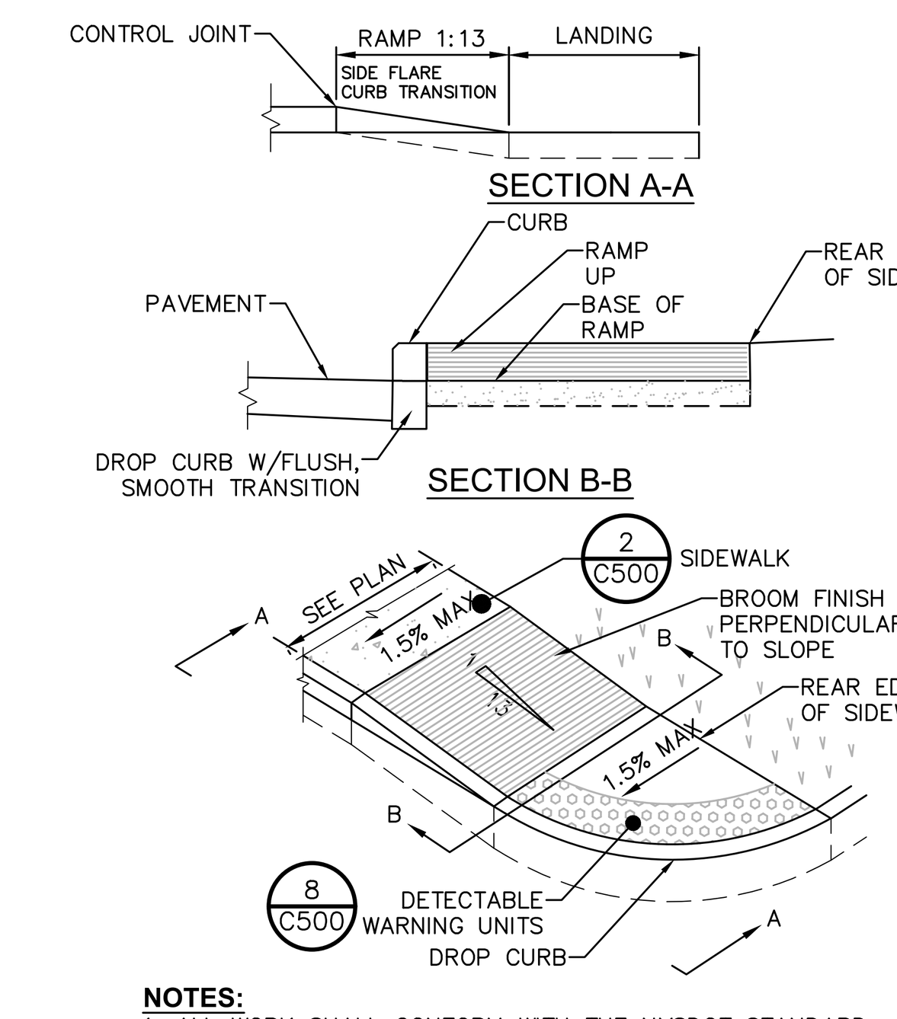
NOTES:
1. MATERIAL AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED "CURRENT VERSION", AND ALL ADDENDA THERE TO.
2. ALL CONCRETE SHALL BE **4,500** CONCRETE. CONCRETE MATERIALS,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

2 CONCRETE SIDEWALK DETAIL
SCALE: NOT TO SCALE



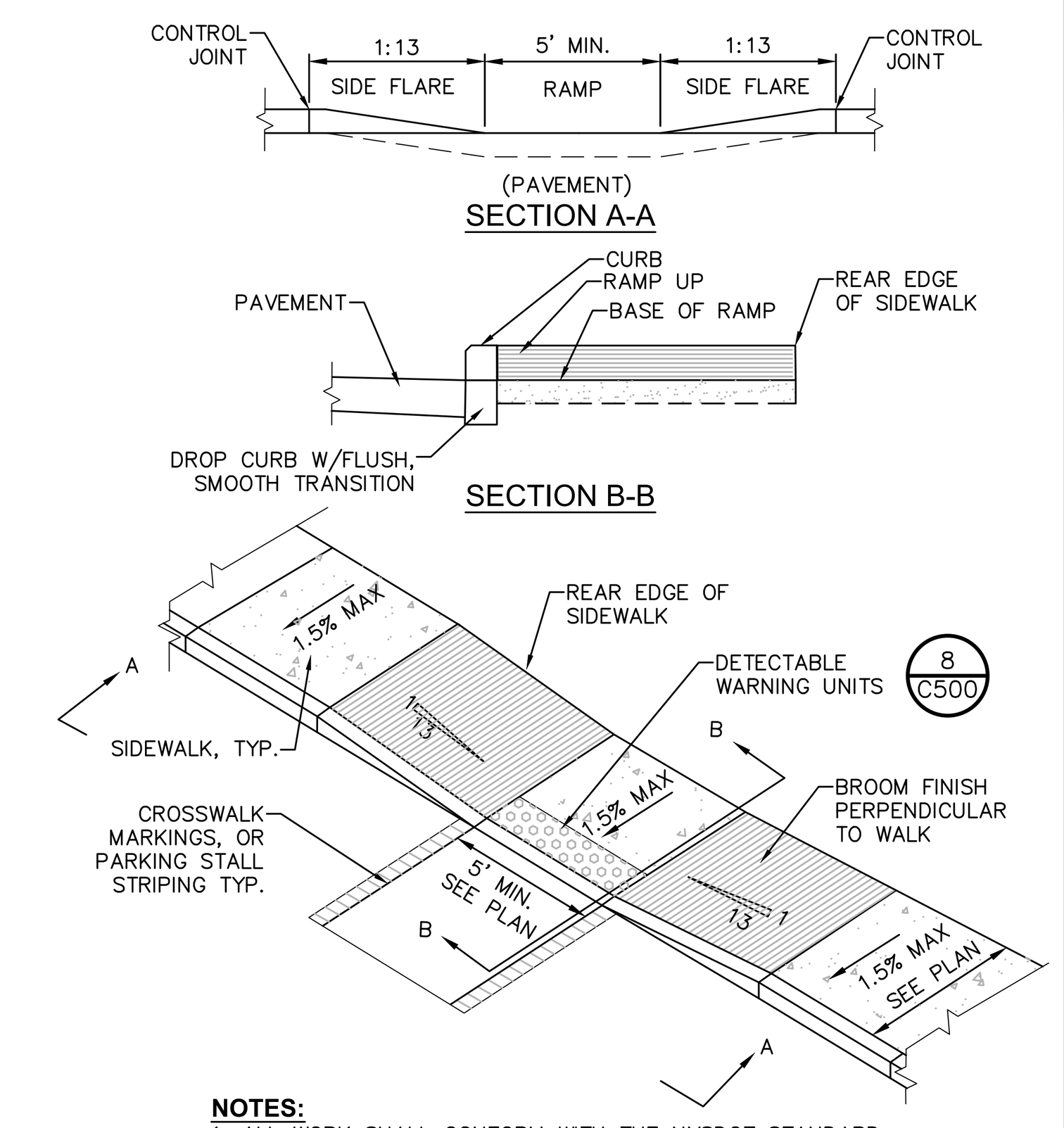
NOTE:
1. THICKENED (HAUNCH) & ADDITIONALLY REINFORCED CONCRETE SIDEWALK ENDS ARE REQUIRED AT ALL EXISTING/PROPOSED BUILDING ENTRANCES.
2. SEE CONCRETE SIDEWALK DETAIL FOR ADDITIONAL DETAILS & NOTES.

3 CONCRETE SIDEWALK AT BUILDING ENTRANCES
SCALE: NOT TO SCALE



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

4 PEDESTRIAN RAMP SECTION - DROP CURB
SCALE: NOT TO SCALE



NOTES:
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2. SLOPE RAMP AND SIDE FLARES AS INDICATED IN THE PLANS OR AS ORDERED BY THE ENGINEER.
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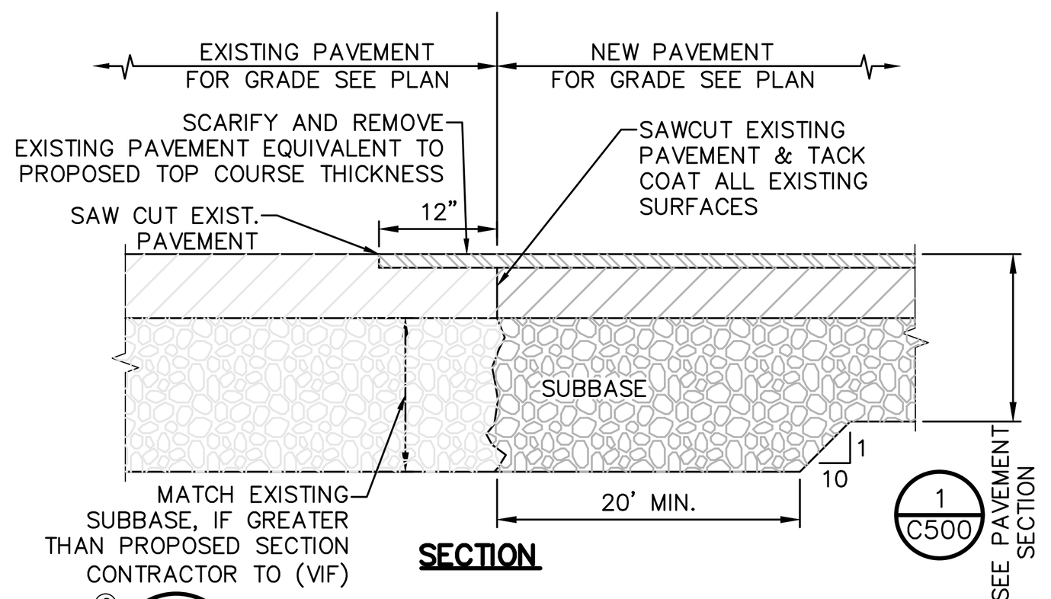
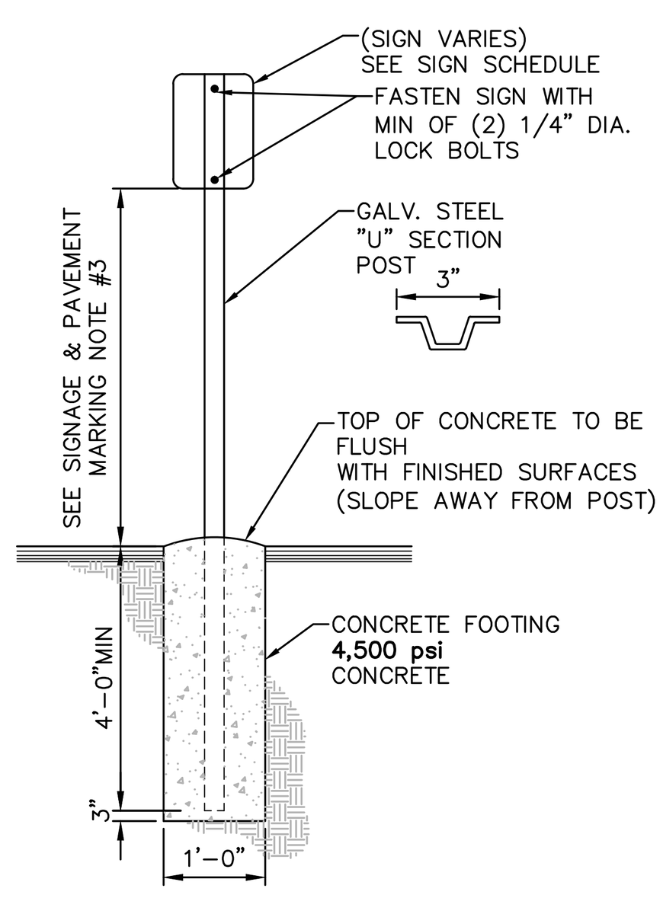
5 PEDESTRIAN RAMP SECTION - DROP CURB
SCALE: NOT TO SCALE

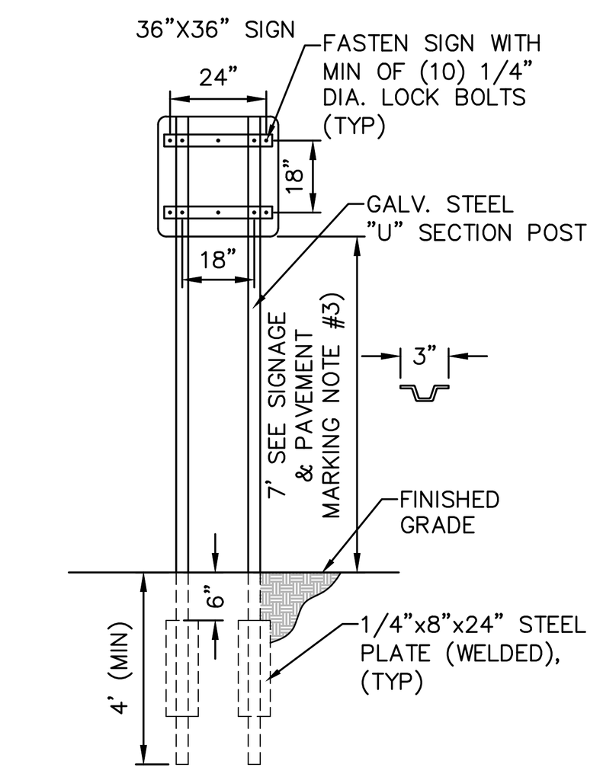


6 PAVEMENT TRANSITION DETAIL
SCALE: NOT TO SCALE



10 SINGLE POST IN CONCRETE SIGN MOUNTING DETAIL
SCALE: NOT TO SCALE

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

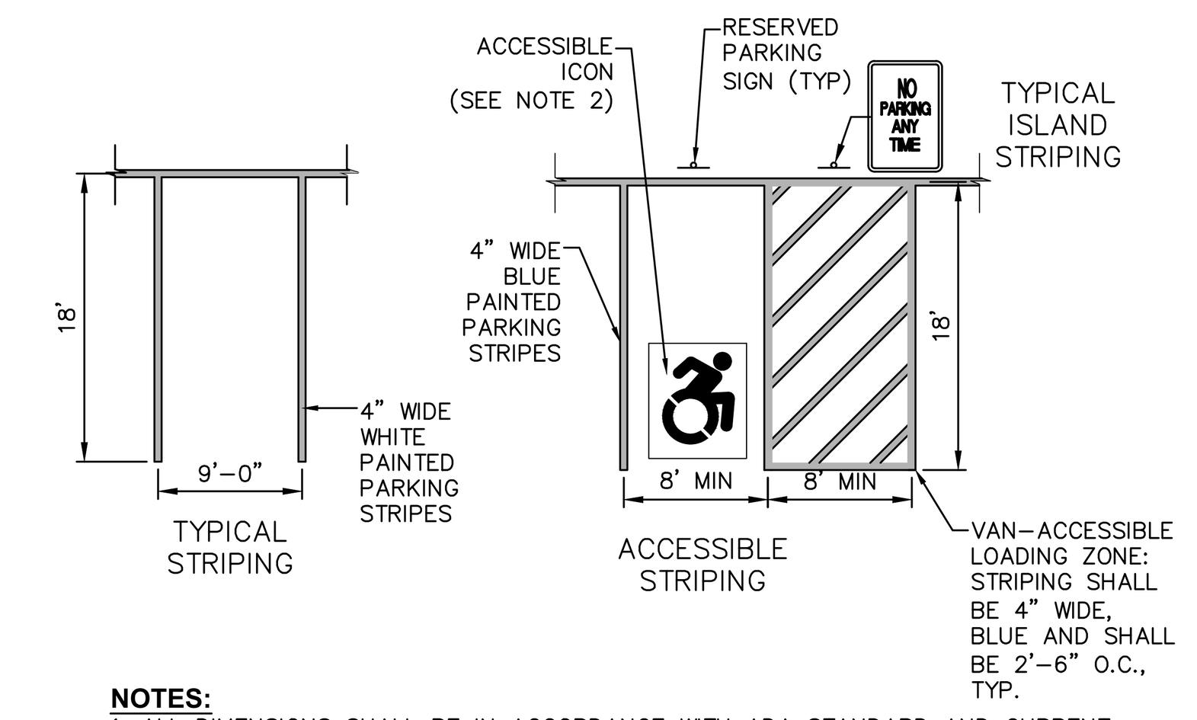


11 TWO POST SIGN MOUNTING DETAIL
SCALE: NOT TO SCALE

MUTCD SIGN SCHEDULE

SIGN NO.	SIGN FACE	MUTCD NUMBER	MIN SIZE	COLORS BCK GRND	COLORS LEGEND	MOUNTING
1	STOP	R1-1	30"x30"	RED	WHITE	10/C500
2	RESERVED PARKING	NY R7-8D	12"x18"	WHITE/ BLUE	GREEN/ WHITE	10/C500
3	VAN ACCESSIBLE	R7-8P	12"x6"	WHITE	BLUE	10/C500
4	NO PARKING ANY TIME	R7-1	12"x18"	WHITE	RED	10/C500
5	ONE WAY	R6-1L	36"x12"	BLACK	WHITE	11/C500
6	ONE WAY	R6-1R	36"x12"	BLACK	WHITE	11/C500
7	DO NOT ENTER	R5-1	30"x30"	RED	WHITE	10/C500

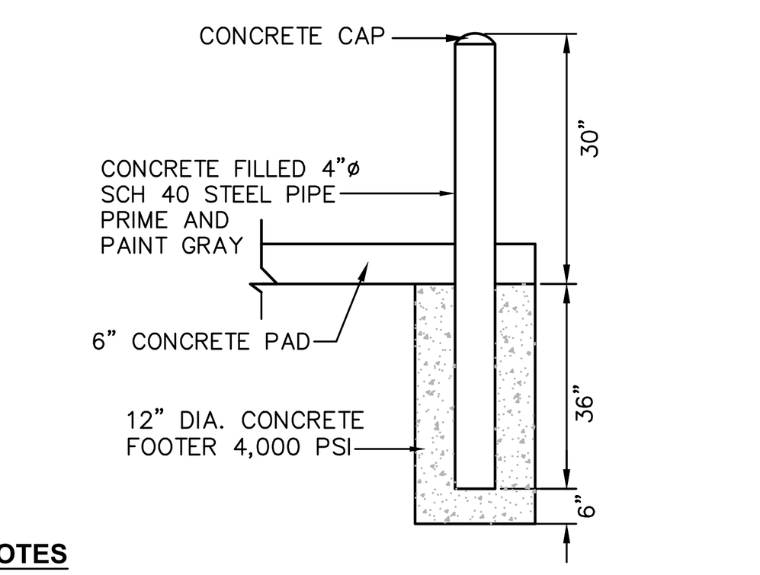
12 MUTCD SIGN SCHEDULE
SCALE: NOT TO SCALE



NOTES:
1. ALL DIMENSIONS SHALL BE IN ACCORDANCE WITH ADA STANDARD AND CURRENT ZONING AND SITE REGULATIONS.
2. PAINTED ACCESSIBLE LOGO TO BE IN ACCORDANCE W/ NEW YORK STATE LAW.
3. SLOPE OF PAVEMENT SURFACE IN ACCESSIBLE PARKING AREA SHALL NOT EXCEED 1.5% IN ANY DIRECTION.
4. SEE PLAN FOR ACTUAL LOCATION OF SIGNAGE

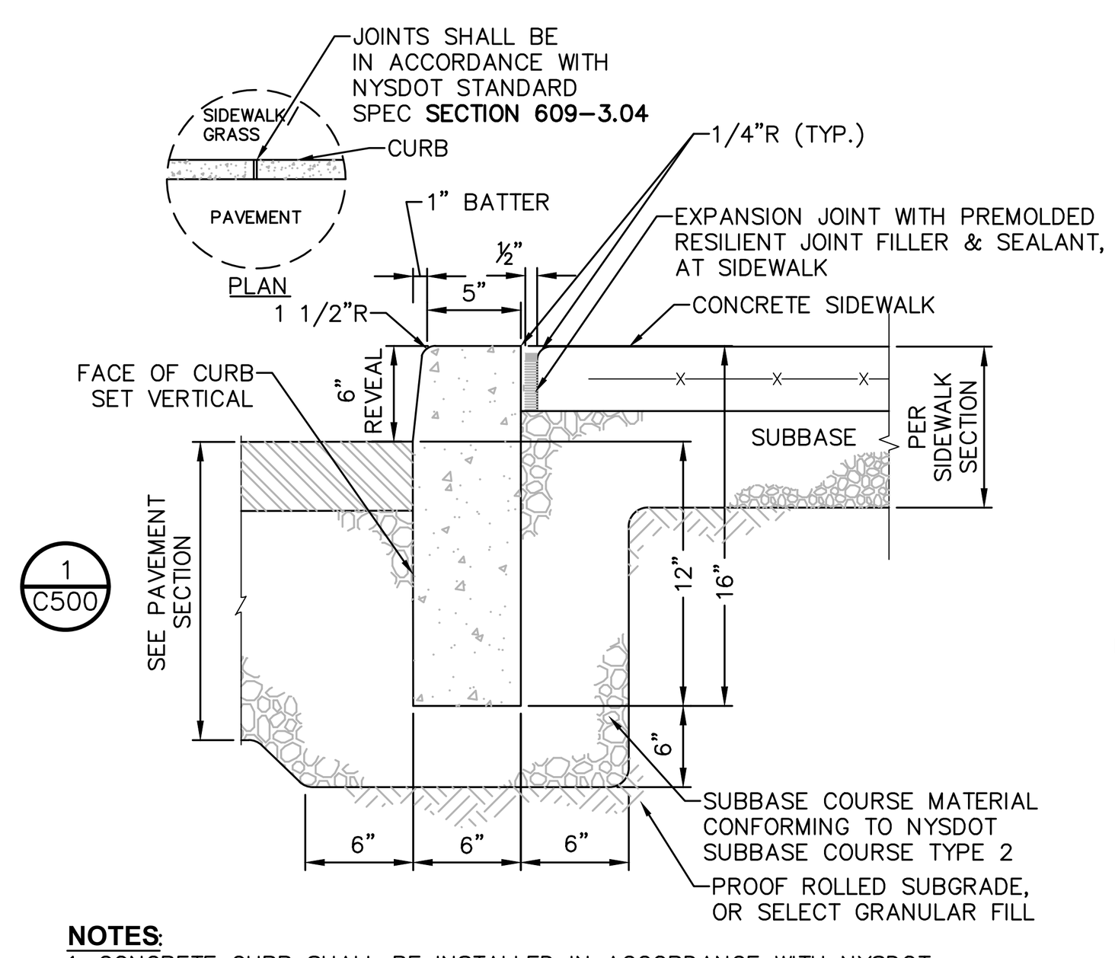
13 PAVEMENT MARKING DETAIL PARKING STRIPING
SCALE: NOT TO SCALE

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



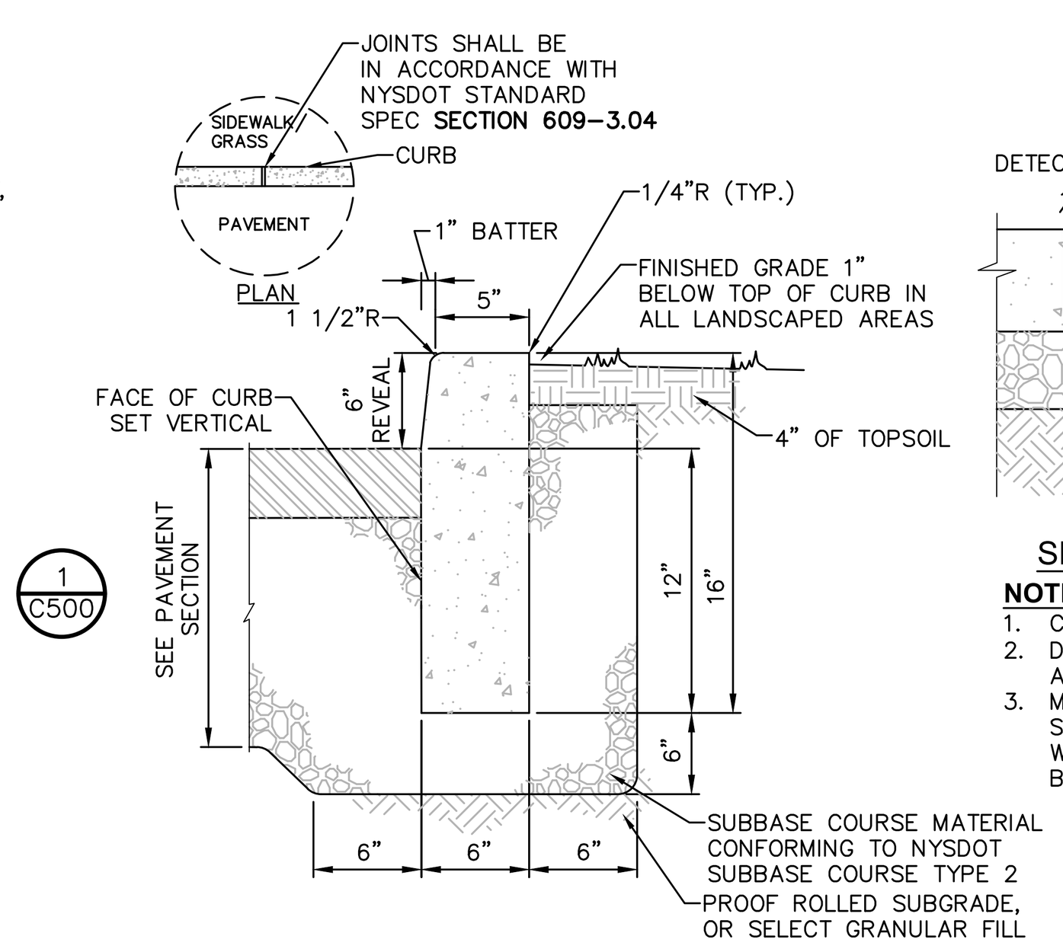
NOTES
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS WITH A MINIMUM CEMENT CONTENT OF 600 POUNDS PER CUBIC YARD FOR ALL FOOTINGS.
2. ALL CONCRETE SHALL HAVE A SLUMP OF NO GREATER THAN 3"-5" TO WITHIN A TOLERANCE OF 0'-1".
3. ALL EXPOSED CONCRETE SHALL BE 5% AIR-ENTRAINED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

14 BOLLARD DETAIL - FOR REFUSE ENCLOSURE
SCALE: NOT TO SCALE



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

6 CAST IN PLACE CONCRETE CURB AT SIDEWALK
SCALE: NOT TO SCALE



NOTES
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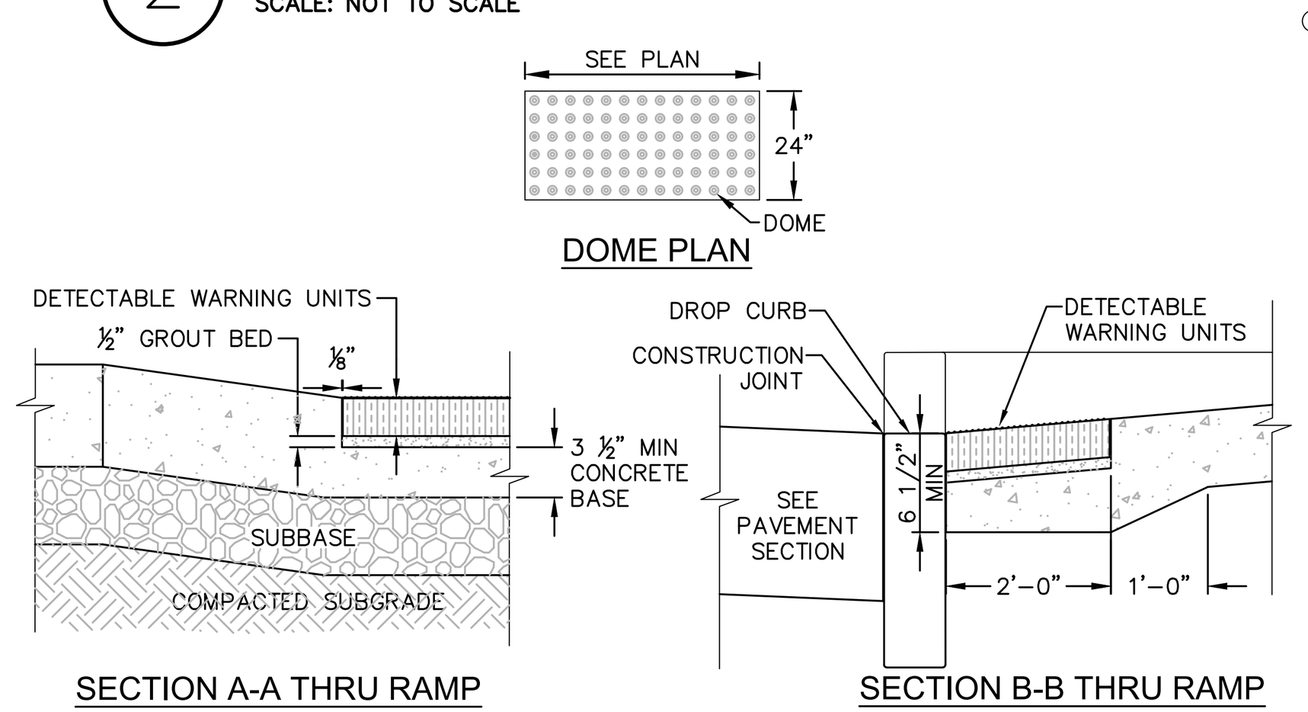
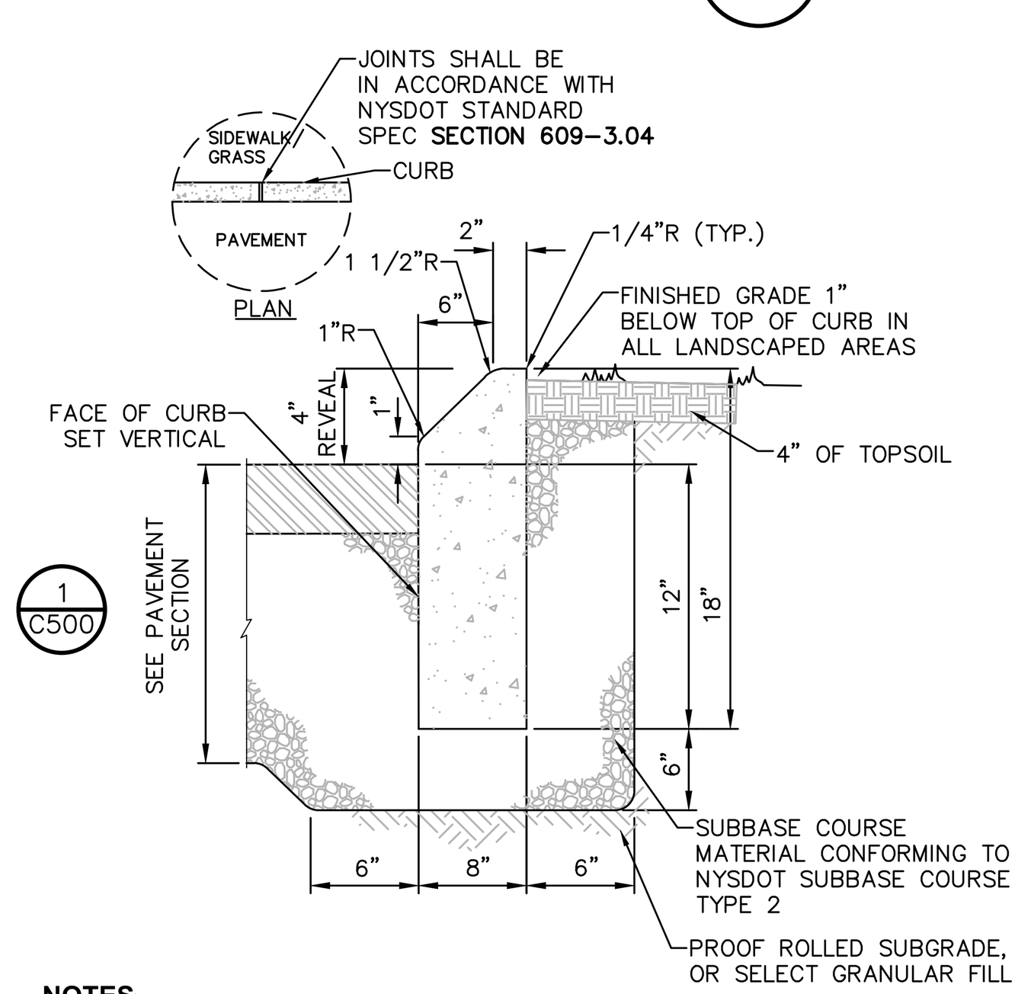
7 CAST IN PLACE CONCRETE CURB
SCALE: NOT TO SCALE



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

8 DETECTABLE WARNING UNITS FOR RAMPS
SCALE: NOT TO SCALE



NOTES
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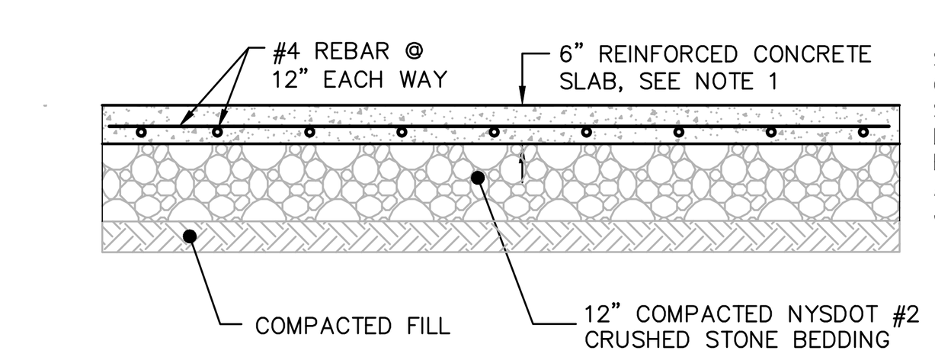
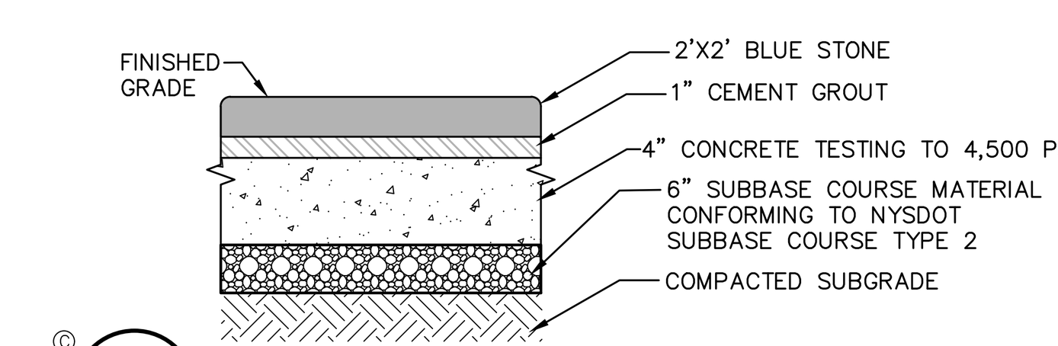
9 CAST IN PLACE MOUNTABLE CONCRETE CURB
SCALE: NOT TO SCALE

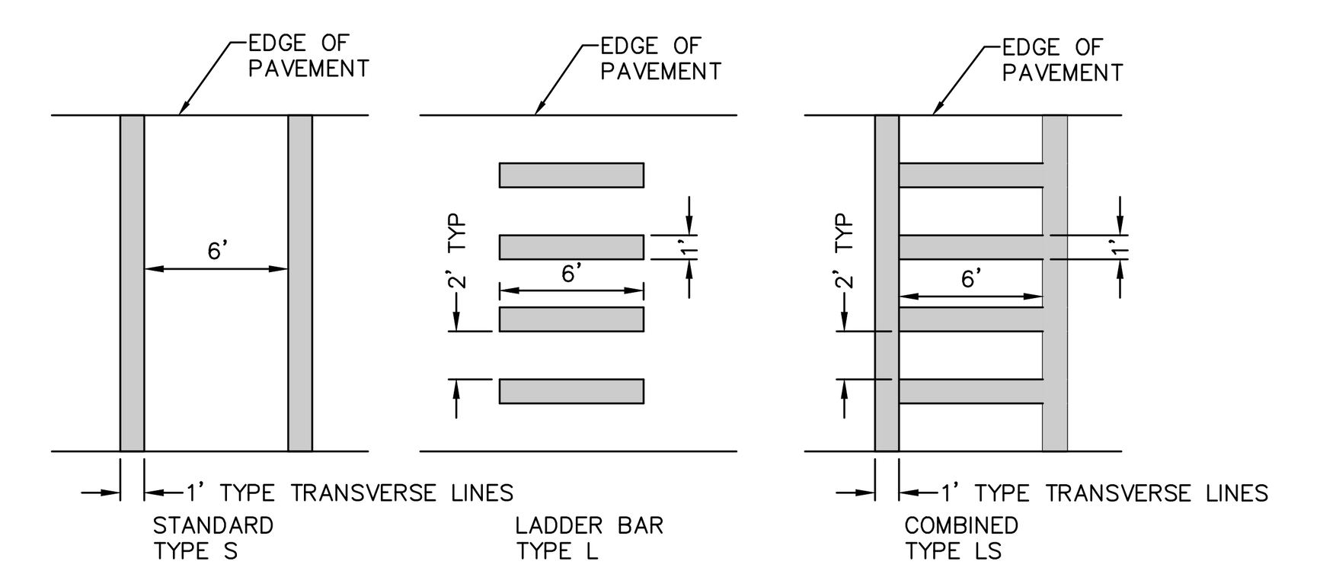


CONCRETE SLAB:
1. MATERIAL AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED MAY 1, 2008, AND ALL ADDENDA THERETO.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 4500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

15 CONCRETE SLAB
SCALE: NOT TO SCALE

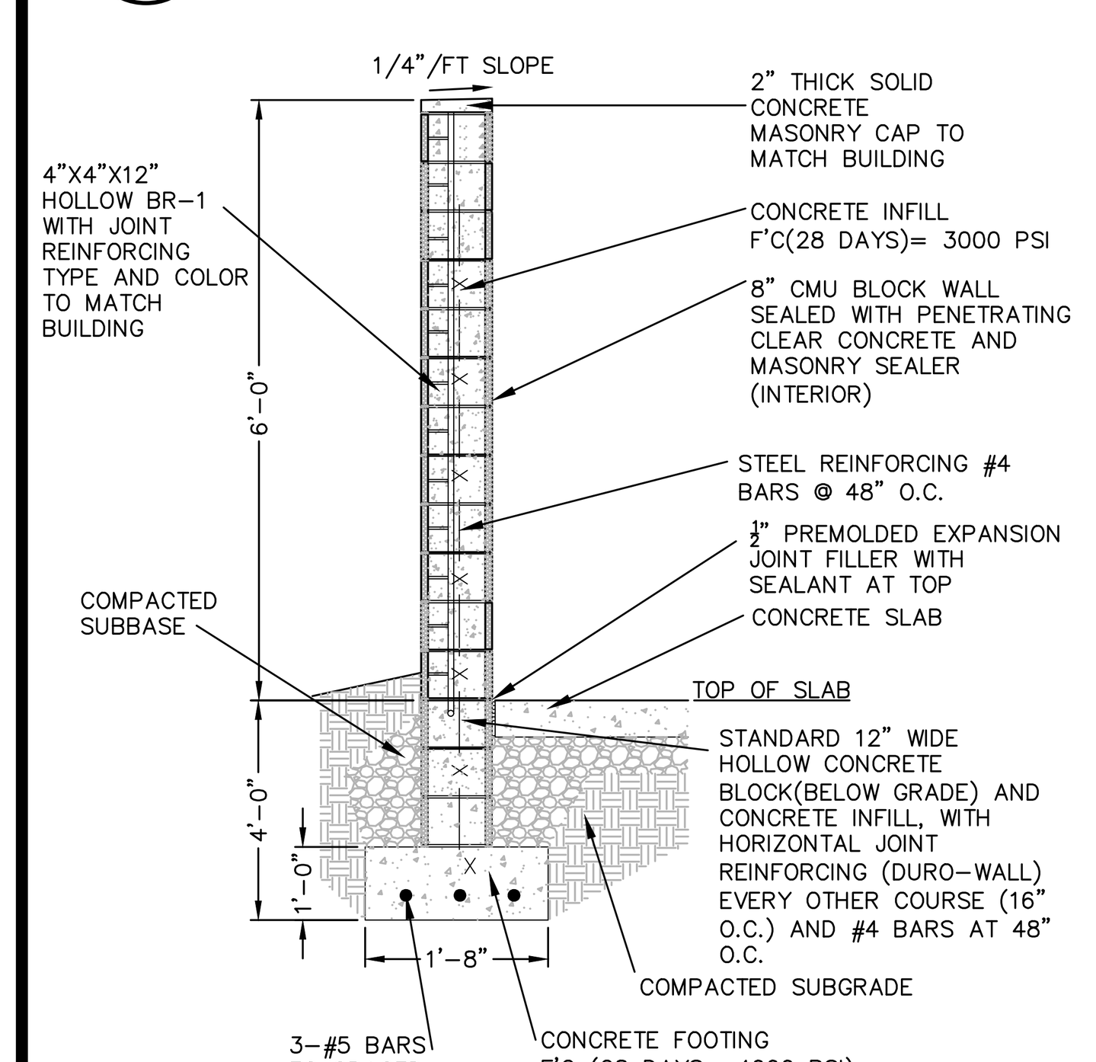


18 BLUE FLAGSTONE PAD
SCALE: NOT TO SCALE

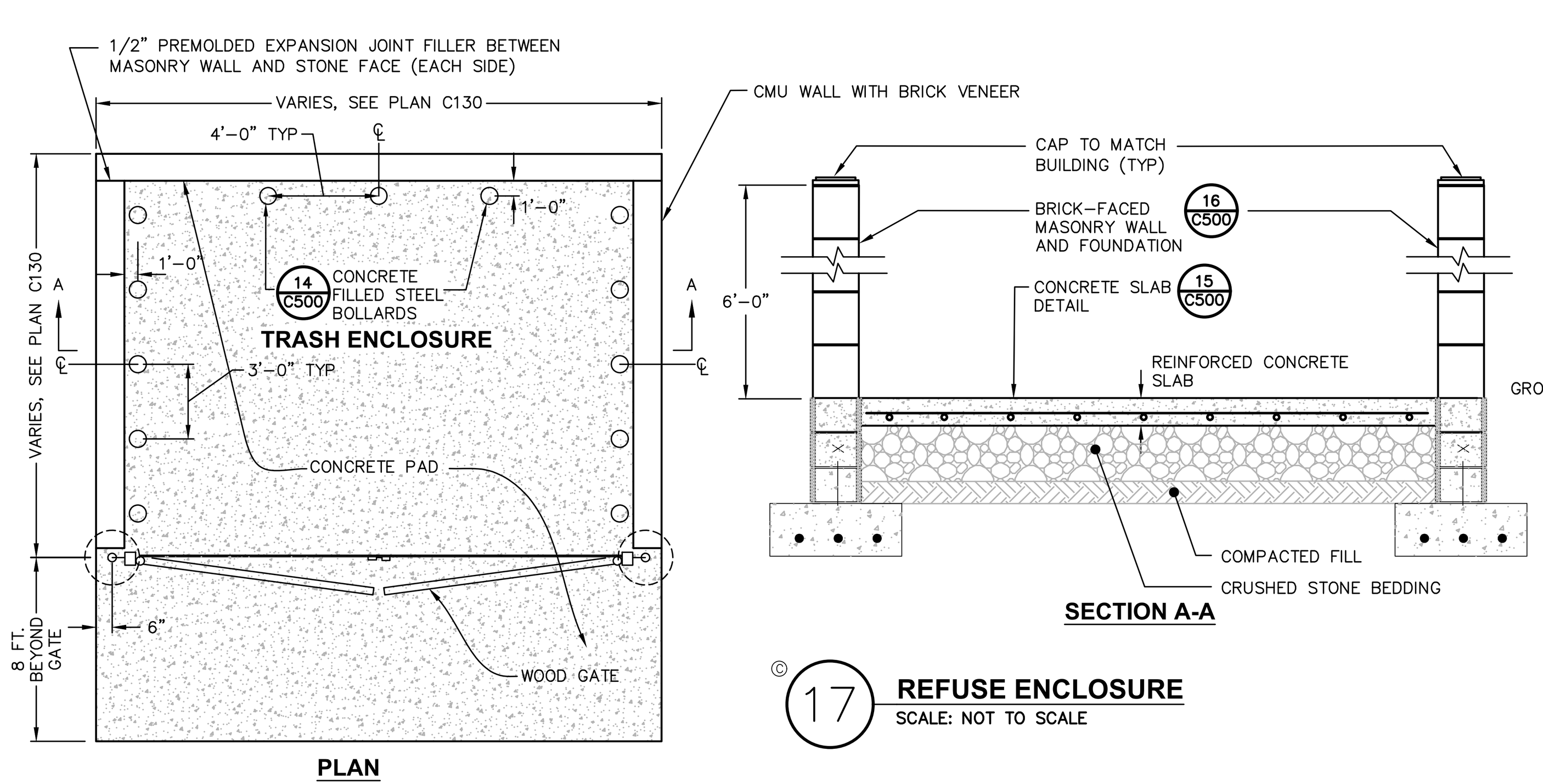


NOTES:
1. ALL CROSS WALK STRIPING SHALL BE WHITE
2. TYPE S CROSS WALK SHALL BE USED IN LOW TRAFFIC VOLUME STREET CROSSINGS.
3. TYPE L CROSS WALK SHALL BE USED IN MEDIUM TRAFFIC VOLUME STREET CROSSINGS.
4. TYPE LS CROSS WALK SHALL BE USED IN HIGH TRAFFIC VOLUME STREET CROSSINGS.

20 PAVEMENT MARKING DETAIL CROSS WALK STRIPING
SCALE: NOT TO SCALE



16 MASONRY WALL DETAIL FOR REFUSE ENCLOSURE
SCALE: NOT TO SCALE



17 REFUSE ENCLOSURE
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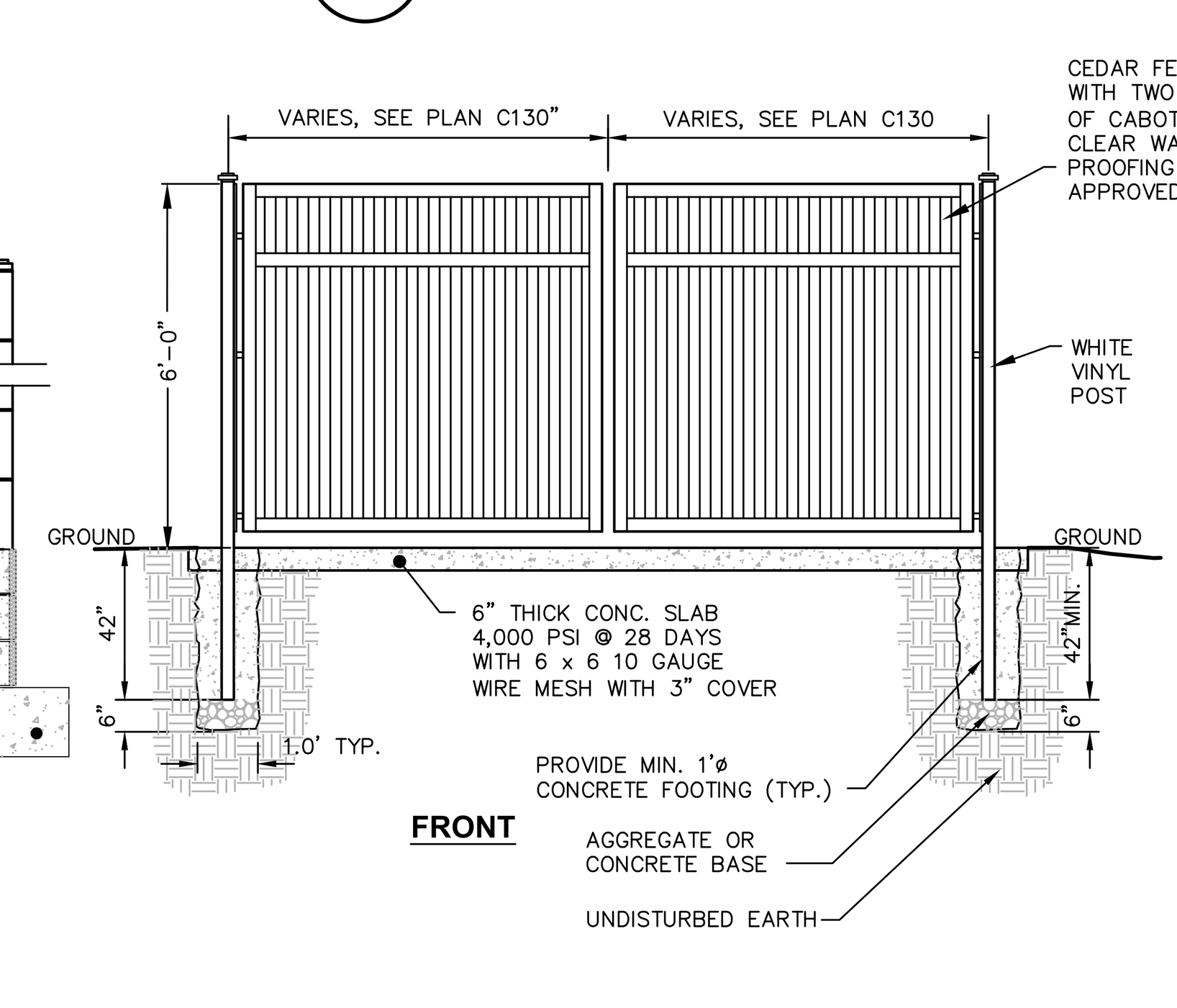

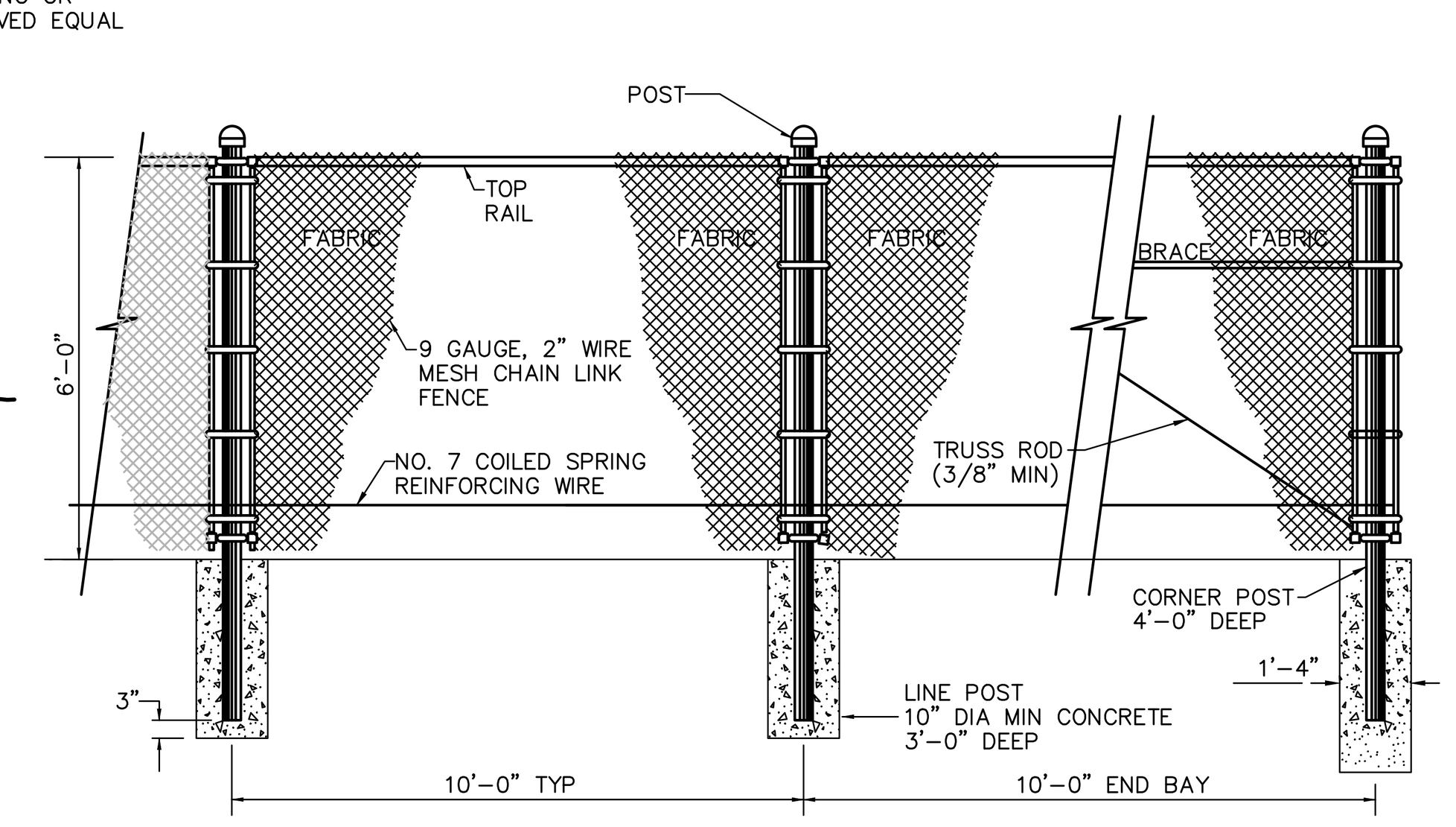

19 CHAIN LINK FABRIC FENCE
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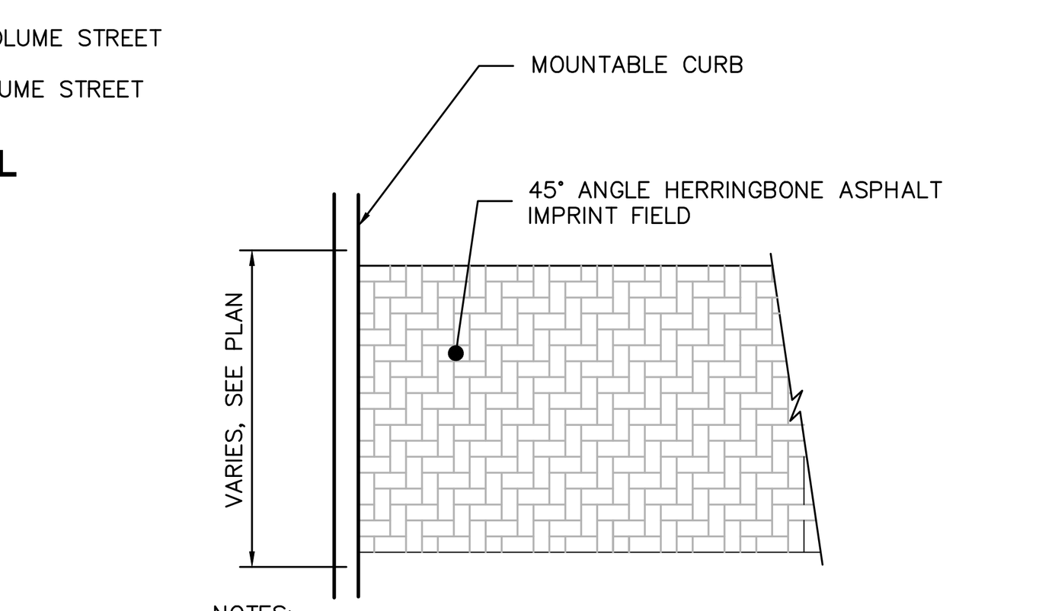

NOTES:
1. ASPHALT IMPRINT SHALL BE A HOT APPLIED POLYMER MODIFIED SYNTHETIC ASPHALT SURFACE TREATMENT APPLIED TO A THICKNESS OF ¾" TO 1" SUCH THAT FINISH PAVEMENT IS FLUSH WITH ADJACENT ASPHALT PAVEMENT. SEE SPECIFICATION.
2. ASPHALT IMPRINT PATTERN SHALL BE 45° HERRINGBONE, HUB SURFACE SYSTEMS STREET PRINT.
3. ASPHALT SURFACE COLOR TO BE TRADITIONAL SUNSET BLUSH.

21 STAMPED ASPHALT PAVEMENT
SCALE: NOT TO SCALE

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

0 1 2 3
ORIGINAL SCALE IN INCHES

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○ Troy, NY
● Poughkeepsie, NY
○ White Plains, NY
○ New York City, NY

rev.	date	description

GAS LAND 5200 ROUTE 9W

SITE DETAILS

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SPL	CPL
date 01/20/22	scale AS SHOWN
project no. 81912.00	
sheet no. C500	

Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C500_81912-00_SITED.dwg
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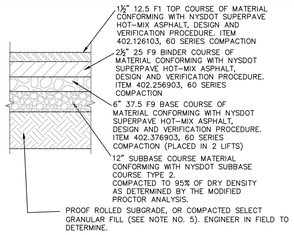
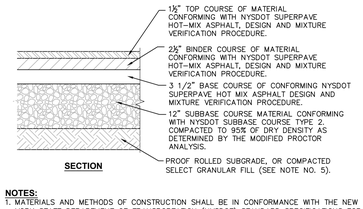
Date Printed: Jan 24, 2022, 8:32am



NOTES:

1. MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED **MAY 1, 2008**, AND ALL ADDENDA THERE TO.
2. SUBBASE MATERIAL SHALL CONFORM WITH **SECTION 304** – SUBBASE COURSE OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND THE TYPE CALLED OUT IN THESE DRAWINGS.
3. HOT MIX ASPHALT (HMA) PAVEMENT SHALL CONFORM WITH SECTION 400–HOT MIX ASPHALT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND THE TYPE CALLED OUT IN THESE DRAWINGS. ALTHOUGH SECTION 400 IN ITS ENTIRETY IS REFERENCED, THE HOT MIX ASPHALT (HMA) PAVEMENT(S) SPECIFIED FOR THIS CONTRACT SHALL BE AS SPECIFIED UNDER **SECTION 403**–HOT MIX ASPHALT (HMA) PAVEMENTS FOR MUNICIPALITIES.
4. TACK COAT WHEN SPECIFIED OR CALLED OUT IN THESE DRAWINGS OR REQUIRED BY THE REFERENCED SPECIFICATIONS SHALL CONFORM WITH SECTION 407–TACK COAT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
5. WHERE IT IS NECESSARY TO PLACE FILL FOR PURPOSES OF BRINGING THE SUBGRADE ELEVATION UP TO A SPECIFIED GRADE, THE FILL MATERIAL PLACED SHALL BE IN CONFORMANCE WITH **SECTION 203**–EXCAVATION AND EMBANKMENT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
6. PAVEMENT SECTION SHOWN IS PRELIMINARY. PRIOR TO BIDDING AND COMMENCEMENT OF CONSTRUCTION, THE FINAL DESIGN OF THE PAVEMENT SECTION MUST BE PREPARED BY A NYS LICENSED PROFESSIONAL ENGINEER AND MUST BE BASED ON A CURRENT GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT.
7. PG BINDER 64E–22 SHALL BE IMPLEMENTED FOR ALL PAVING PROCEDURES.
8. STRAIGHT TACK COAT (ITEM 407.0103) SHALL BE APPLIES BETWEEN ALL PAVEMENT LIFTS.
9. JOINT ADHESIVE (ITEM 418.7603) SHALL BE APPLIED WHEREVER NEW PAVEMENT WILL ADJOIN EXISTING PAVEMENT.

1 NYSDOT TRAVEL LANE PAVEMENT DETAIL
SCALE: NOT TO SCALE

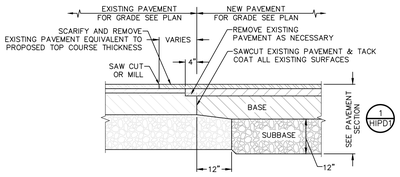


SECTION

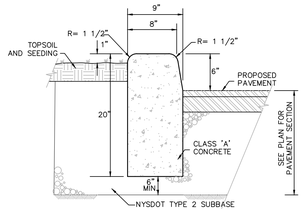
NOTES:

1. MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED **MAY 1, 2008**, AND ALL ADDENDA THERE TO.
2. SUBBASE MATERIAL SHALL CONFORM WITH **SECTION 304** – SUBBASE COURSE OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND THE TYPE CALLED OUT IN THESE DRAWINGS.
3. HOT MIX ASPHALT (HMA) PAVEMENT SHALL CONFORM WITH SECTION 400–HOT MIX ASPHALT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND THE TYPE CALLED OUT IN THESE DRAWINGS. ALTHOUGH SECTION 400 IN ITS ENTIRETY IS REFERENCED, THE HOT MIX ASPHALT (HMA) PAVEMENT(S) SPECIFIED FOR THIS CONTRACT SHALL BE AS SPECIFIED UNDER **SECTION 403**–HOT MIX ASPHALT (HMA) PAVEMENTS FOR MUNICIPALITIES.
4. TACK COAT WHEN SPECIFIED OR CALLED OUT IN THESE DRAWINGS OR REQUIRED BY THE REFERENCED SPECIFICATIONS SHALL CONFORM WITH SECTION 407–TACK COAT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
5. WHERE IT IS NECESSARY TO PLACE FILL FOR PURPOSES OF BRINGING THE SUBGRADE ELEVATION UP TO A SPECIFIED GRADE, THE FILL MATERIAL PLACED SHALL BE IN CONFORMANCE WITH **SECTION 203**–EXCAVATION AND EMBANKMENT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
6. PAVEMENT SECTION SHOWN IS PRELIMINARY. PRIOR TO BIDDING AND COMMENCEMENT OF CONSTRUCTION, THE FINAL DESIGN OF THE PAVEMENT SECTION MUST BE PREPARED BY A NYS LICENSED PROFESSIONAL ENGINEER AND MUST BE BASED ON A CURRENT GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT.
7. PG BINDER 64E–22 SHALL BE IMPLEMENTED FOR ALL PAVING PROCEDURES.
8. STRAIGHT TACK COAT (ITEM 407.0103) SHALL BE APPLIES BETWEEN ALL PAVEMENT LIFTS.
9. JOINT ADHESIVE (ITEM 418.7603) SHALL BE APPLIED WHEREVER NEW PAVEMENT WILL ADJOIN EXISTING PAVEMENT.

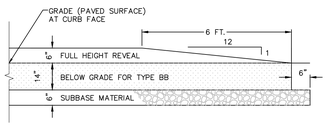
5 NYSDOT SHOULDER PAVEMENT DETAIL
SCALE: NOT TO SCALE



2 NYSDOT PAVEMENT TRANSITION
SCALE: NOT TO SCALE



3 NYSDOT CURB DETAIL
SCALE: NOT TO SCALE



4 NYSDOT CURB TERMINAL
SCALE: NOT TO SCALE

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

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- New York City, NY

rev.	date	description

GAS LAND 5200 ROUTE 9W

NYSDOT DETAILS

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SPL	CPL
date	scale
01/20/22	AS SHOWN
project no.	
81912.00	
sheet no.	
C501	

0 1 2 3
ORIGINAL SCALE IN INCHES

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Xref's Attached: XTB_30X42_81912-00
Date Printed: Jan 24, 2022, 8:32am

CONSTRUCTION PHASING NOTES:

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

HIGHWAY WORK PERMIT NOTES:

1. NO TRAVEL LANE CLOSURE DURING THE FOLLOWING TIMES (OR ACCORDING TO PERMIT):
   6:30 TO 9:30 A.M.
   4:30 TO 6:30 P.M.
2. ALL LANE CLOSURE AND TRAFFIC CONTROL MUST CONFORM TO THE LATEST EDITION OF THE NYSDOT SPECIFICATIONS, SECTION 640 AND THE CODES RULES AND REGULATIONS OF THE STATE OF NEW YORK (NYCRR) TITLE 17-TRANSPORTATION VOLUME B-CHAPTER V "UNIFORM TRAFFIC CONTROL DEVICES." AS PER FHWA MUTCD 2009 EDITION AND NYS SUPPLEMENTAL TO NATIONAL MUTCD 2010 EDITION.
3. THE CONTRACTOR SHALL COMPLY WITH THE WORK RESTRICTIONS FOR HOLIDAYS AND OTHER EVENTS AS PART OF THE STANDARD CONDITION AND OBLIGATION FOR HIGHWAY WORK PERMITS. LANE CLOSURES WILL NOT BE PERMITTED DURING THE FOLLOWING HOLIDAY PERIODS: EASTER WEEKEND, MEMORIAL DAY, INDEPENDENCE DAY, THANKSGIVING, CHRISTMAS, AND NEW YEARS DAY.

REFERENCE NOTES:

1. EXISTING PAVEMENT MARKINGS TO BE CLEANED UNDER ITEMS 635.0103, 635.0203, AND 635.0303, PRIOR TO THE INSTALLATION OF NEW PAVEMENT MARKINGS, A.O.B.E.
2. PAVEMENT MARKINGS ARE TO BE DIMENSIONED AS PER NYS STANDARD SHEETS 685-1, 685-1R1, 685-2R2, 685-3R2, 685-4R2, 685-5.

GENERAL NOTES:

1. EXISTING TOPOGRAPHIC INFORMATION FOR HEREON WAS COMPILED FROM A SURVEY COMPLETED OCTOBER 21, 2019, BY HERITAGE LAND SURVEYING, P.C..
2. UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.
3. SURVEYED WITHOUT THE BENEFIT OF A TITLE SEARCH.
4. COPYRIGHT CHAZEN ENGINEERING, LAND SURVEYING & LANDSCAPE ARCHITECTURE CO., D.P.C., ALL RIGHTS RESERVED.
5. SURVEYED FROM RECORD DESCRIPTION AND AS IN POSSESSION.
6. SUBJECT TO COVENANTS, EASEMENTS, RESTRICTIONS, CONDITIONS AND AGREEMENTS OF RECORD.
7. BUILDING SHOWN HEREON SERVED BY UNDERGROUND UTILITIES.
8. THE CONTRACTOR SHALL COMPLY WITH NEW YORK STATE INDUSTRIAL CODE RULE 753 – 48 HOURS PRIOR TO DIGGING CALL DIGSAFELY NEW YORK 1-800-962-7962 TO HAVE PUBLIC UTILITY LOCATIONS PAINTED.
9. TOPOGRAPHY SHOWN HEREON WAS COMPILED FROM A FIELD SURVEY COMPLETED NOVEMBER 16, 2017, BY CHAZEN ENGINEERING, LAND SURVEYING AND LANDSCAPE ARCHITECTURE CO. D.P.C. DATUM NAVD-88, 1 FOOT CONTOUR INTERVAL.
10. UNDERGROUND FACILITIES AND STRUCTURES SHOWN HEREON WERE TAKEN FROM DATA OBTAINED FROM PREVIOUS MAPS AND RECORD DRAWINGS. ALL ABOVE GROUND STRUCTURES AND SURFACE FEATURES SHOWN HEREON ARE THE RESULT OF A FIELD SURVEY UNLESS OTHERWISE NOTED. THERE MAY BE OTHER UNDERGROUND UTILITIES, THE EXISTENCE OF WHICH ARE NOT KNOWN OR CERTIFIED BY THE UNDERSIGNED. SIZE AND LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES MUST BE VERIFIED BY THE APPROPRIATE AUTHORITIES. THE UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION MUST BE NOTIFIED PRIOR TO CONDUCTING TEST BORINGS, EXCAVATION AND CONSTRUCTION.
11. CONTRACTOR SHALL FIELD VERIFY EXISTING GRADES, EXISTING STRUCTURE LOCATIONS AND OTHER EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE FOR FURTHER RESOLUTION.
12. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT OTHER CONTRACTORS MAY BE WORKING IN THE AREA ON OTHER CONSTRUCTION AT THE SAME TIME THAT WORK IS PERFORMED UNDER THIS CONTRACT. THE CONTRACTOR SHALL BE AWARE OF THE NATURE AND EXTENT OF THIS OTHER WORK AND SHALL SCHEDULE AND CONDUCT HIS OWN OPERATION SO THAT THERE WILL BE NO CONFLICT IN OPERATIONS.
13. SINCE THIS PROJECT INVOLVES CONSTRUCTION WITHIN AN ACTIVE ROADWAY, IT IS IMPERATIVE THAT THE CONSTRUCTION BE CARRIED FORTH IN SUCH A MANNER AS TO INSURE THAT PROPER TRAFFIC FLOW IS MAINTAINED DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND STANDARD SPECIFICATIONS.
14. THE CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS AND SHALL BE RESPONSIBLE FOR FIELD FIT FINISH AND QUALITY OF WORK AND MATERIALS USED IN THE CONSTRUCTION. NO ALLOWANCE SHALL BE MADE ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLECT ON HIS PART.
15. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT AND RESTORATION OF ALL NATURAL AND MANMADE FEATURES WHETHER SHOWN ON THE PLANS OR ENCOUNTERED IN THE FIELD. IT IS THE INTENTION OF THE PLANS TO SHOW ONLY MAJOR FEATURES TO BE PROTECTED, RESTORED OR REPLACED.
16. PROTECTION AND RESTORATION OF PROPERTY SHALL BE IN ACCORDANCE WITH THE NYSDOT STANDARD SPECIFICATIONS.
17. TOPSOIL SHALL BE PLACED AND AREAS SHALL BE SEEDED AS SOON AS FINAL GRADES ARE ESTABLISHED ON PERMANENT SLOPES. SLOPES SHALL ALSO BE MULCHED.
18. THE CONTRACTOR SHALL CONTACT ALL THE APPROPRIATE PARTIES WITH JURISDICTION OVER THE UTILITIES ENTERING ON OR NEAR THE PROJECT AREA PRIOR TO INITIATION OF CONSTRUCTION ACTIVITIES AND PROVIDE THOSE AGENCIES 72 HOURS NOTIFICATION.
19. THE CONTRACTOR SHALL VERIFY THE LOCATION OF AND SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES AT OR ADJACENT TO THE SITE OF CONSTRUCTION, IN SO FAR AS THEY MAY BE ENDANGERED BY HIS OPERATIONS. THIS SHALL HOLD TRUE WHETHER OR NOT THEY ARE SHOWN ON THE CONTRACT DRAWINGS. IF THEY ARE SHOWN ON THE DRAWINGS, THEIR LOCATIONS ARE NOT GUARANTEED EVEN THOUGH THE INFORMATION WAS OBTAINED FROM THE BEST AVAILABLE SOURCES, AND IN ANY EVENT, OTHER UTILITIES NOT SHOWN ON THESE PLANS MAY BE ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES THAT HE DAMAGES, AND SHALL CONSTANTLY PROCEED WITH CAUTION TO PREVENT UNDUE INTERRUPTION TO UTILITY SERVICES.
20. IF TEMPORARY UTILITY SERVICES ARE REQUIRED, THE CONTRACTOR SHALL SEE TO IT THAT THEY ARE PROVIDED, AT NO ADDITIONAL COST TO THE OWNER, AND IT SHALL BE HIS RESPONSIBILITY TO MAINTAIN SUCH TEMPORARY FACILITIES FOR THE DURATION OF THE PROJECT AS NECESSARY
21. ALL EPOXY PAVEMENT MARKINGS AND ALL SIGNS SHALL BE IN CONFORMANCE WITH THE NYSDOT MUTCD.
22. ALL DISTURBED AREAS WITHIN THE R.O.W. SHALL BE TOPSOILED, SEEDED AND MULCHED.
23. ALL SIGNING WILL BE IN ACCORDANCE WITH THE NATIONAL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES WITH NYS SUPPLEMENT, MOST RECENT VERSION.
24. PRIOR TO LEAVING THE WORK SITE EACH DAY, THE CONTRACTOR SHALL REMOVE OR PROTECT ANY PART OF THE WORK SITE THAT IS CONSIDERED HAZARDOUS TO THE TRAVELING PUBLIC, BY THE NYSDOT RESIDENT ENGINEER OR PERMIT ENGINEER, TOWN ENGINEER, OR POLICE DEPARTMENT.
25. DURING ALL CONSTRUCTION OPERATIONS THE CONTRACTOR SHALL MAINTAIN ACCESS TO EACH ADJACENT SITE. IF CONDITIONS REQUIRE THAT ACCESS BE TEMPORARILY CLOSED, THE CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST 24 HOURS IN ADVANCE. ALL ACCESS DRIVES WILL BE OPEN FOR SAFE USE AT THE END OF EACH WORK DAY.
26. PAVEMENT LETTERS AND SYMBOLS SHALL BE IN CONFORMANCE WITH NYSDOT STANDARD SHEET 685-2R2.
27. IN ADDITION TO THE ABOVE NOTES, THE CONTRACTOR SHALL FOLLOW ALL NOTES ATTACHED TO THE NYSDOT WORK PERMIT.
28. AREAS DISTURBED NOT RECEIVING PAVEMENT OR CONCRETE SHALL BE TOPSOILED, SEEDED, AND MULCHED IN ACCORDANCE WITH SPECIFICATIONS ON ATTACHED SHEETS.

SIGNAGE AND PAVEMENT MARKING NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE MAY 1, 2008 EDITION OF THE NYSDOT STANDARD SPECIFICATIONS WITH LATEST REVISIONS, SECTION 645 AND AS NOTED IN 4, 5, AND 6 BELOW, AND THE CODES RULES AND REGULATIONS OF THE STATE OF NEW YORK (NYCRR) TITLE 17-TRANSPORTATION VOLUME B-CHAPTER V "UNIFORM TRAFFIC CONTROL DEVICES, AS PER FHWA MUTCD 2009 EDITION AND NYS SUPPLEMENTAL TO NATIONAL MUTCD 2010 EDITION.
2. STRIPING WORK WILL BE REVIEWED AND ACCEPTED BY THE NYSDOT.
3. MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED MAY 1, 2008, AND ALL ADDENDA THERETO; THE ONLY EXCEPTION BEING THAT THE WORK OF THIS CONTRACT SHALL BE MEASURED IN ENGLISH UNITS.
4. PAVEMENT MARKINGS SHALL CONFORM WITH NYSDOT SECTION 685 – EPOXY REFLECTORIZED PAVEMENT MARKINGS
5. SURFACE PREPARATION FOR THE INSTALLATION OF PAVEMENT MARKING, SHALL CONFORM WITH SECTION 635 – CLEANING AND PREPARATION OF PAVEMENT SURFACES FOR PAVEMENT MARKINGS.
6. PERMANENT SIGNING SHALL BE INSTALLED ON TYPE A POSTS.

GENERAL CONSTRUCTION NOTES:

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

LAYOUT:

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL FIELD LAYOUT. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP AS BUILT PLANS FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES AND INVERTS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND THE ENGINEER AND THE CONTRACTOR SHALL PROVIDE ANY CORRECTION OR ADDITIONS TO THE SATISFACTION OF THE OWNER AND THE ENGINEER BEFORE UTILITIES WILL BE ACCEPTED.
11. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE AND UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
12. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT PRIOR REVIEW BY THE ENGINEER.

PAVING:

1. NO VEHICULAR TRAFFIC OF ANY SORT SHALL BE PERMITTED ON THE SURFACE OF SUBBASE COURSE MATERIAL ONCE IT HAS BEEN FINE GRADED, COMPACTED, AND IS READY FOR PAVING. SUBBASE MATERIAL SO PREPARED FOR PAVING SHALL BE PAVED WITHIN THREE DAYS OF PREPARATION.
2. SUBBASE MATERIAL AND THE VARIOUS ASPHALT CONCRETE MATERIALS CALLED FOR IN THESE DRAWINGS SHALL CONFORM WITH THE REFERENCED SECTION OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED MAY 1, 2008. CONSTRUCTION SHALL BE AS FURTHER SET FORTH IN THOSE SPECIFICATIONS AND AS OTHERWISE PROVIDED FOR IN THESE DRAWINGS.
3. PLACE ASPHALT CONCRETE MIXTURE ON PREPARED SURFACE, SPREAD AND STRIKE-OFF USING A SELF-PROPELLED PAVING MACHINE, WITH VIBRATING SCREED. PLACEMENT IN INACCESSIBLE AND SMALL AREAS MAY BE BY HAND.
4. PROVIDE JOINTS BETWEEN OLD AND NEW PAVEMENTS OR BETWEEN SUCCESSIVE DAY'S WORK.
5. TACK COAT WHEN SPECIFIED OR CALLED OUT ON THE DRAWINGS OR REQUIRED BY THE REFERENCED SPECIFICATION SHALL CONFORM WITH THE FOLLOWING:
   A. TACK COAT SHALL MEET THE MATERIAL REQUIREMENTS OF 702-90 ASPHALT EMULSION FOR TACK COAT OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED MAY 1, 2008, SHALL BE APPLIED IN ACCORDANCE WITH SECTION 407 – TACK COAT SHALL BE IN ACCORDANCE WITH THOSE SPECIFICATIONS AND AS OTHERWISE PROVIDED FOR IN THESE DRAWINGS.
   B. REMOVE LOOSE AND FOREIGN MATERIAL FROM ASPHALT SURFACE BEFORE PAVING NEXT COURSE. USE POWER BROOMS, BLOWERS OR HAND BROOM.
   C. APPLY TACK COAT TO ASPHALT PAVEMENT SURFACES & AND SURFACES OF CURBS, GUTTERS, MANHOLES, AND OTHER STRUCTURES PROJECTING INTO OR ABUTTING PAVEMENT. DRY TO A "TACKY" CONSISTENCY BEFORE PAVING.
   D. TACK COAT ENTIRE VERTICAL SURFACE OF ABUTTING EXISTING PAVEMENT.
6. AFTER COMPLETION OF PAVING AND SURFACING OPERATIONS, CLEAN SURFACES OF EXCESS OR SPILLED ASPHALT, GRAVEL OR STONE MATERIALS TO THE SATISFACTION OF THE ENGINEER.

STRIPING REMOVAL NOTES:

1. REMOVAL OF EXISTING PAVEMENT STRIPING SHALL BE ACCOMPLISHED BY MILLING. THE WORK SHALL BE PERFORMED IN SUCH A MANNER THAT THE FINISHED PAVEMENT IS NOT DAMAGED OR LEFT IN A PATTERN THAT WILL MISLEAD OR MISDIRECT THE MOTORISTS. WHEN THESE OPERATIONS ARE COMPLETED THE PAVEMENT SURFACE SHALL FIRST BE POWER BROOMED AND THEN BLOWN OFF WITH COMPRESSED AIR TO REMOVE RESIDUE AND DEBRIS RESULTING FROM THE WORK. ALL SUCH DEBRIS THAT REMAINS ON THE ROADWAY, INCLUDING BROKEN PARTS FROM CLEANING EQUIPMENT, SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL AND STATE GUIDELINES.
2. THE CONTRACTOR SHALL CONDUCT THE REMOVAL AND CLEANING WORK IN SUCH A MANNER AS TO MINIMIZE AIRBORNE DUST AND SIMILAR DEBRIS, SO AS TO PREVENT A HAZARD TO MOTOR VEHICLE OPERATION OR NUISANCE TO PROPERTY OWNERS.

TRENCHING & INSTALLATION NOTES:

1. ALL AREAS DISTURBED DURING TRENCHING AND WORK OPERATIONS MUST BE STABILIZED WITHIN 14 DAYS.
2. ALL TRENCHING IN PAVEMENT SHOULD BE SAW-CUT PRIOR TO TRENCHING. PAVEMENT RESTORATIONS MAY REQUIRE ADDITIONAL CUTBACKS AFTER TRENCHING OPERATIONS HAVE BEEN COMPLETED.
3. ALL PAVED AREAS MUST BE RESTORED WITH A MINIMUM OF 4" TEMPORARY PAVING AT THE CLOSE OF EACH DAY'S WORK OPERATIONS.
4. PERMANENT PAVING MUST BE COMPLETED AT AMBIENT TEMPERATURES OF 40 DEGREES AND RISING. ANY PAVING OPERATIONS COMPLETED BELOW 40 DEGREES SHALL BE CONSIDERED TEMPORARY.
5. ALL SIGNS REMOVED FOR CONSTRUCTION MUST BE RESET USING TYPE A POSTS.

DEMOLITION NOTES:

1. REFER TO REQUIREMENTS OUTLINED IN THE EROSION & SEDIMENTS CONTROL PLANS & NOTES PRIOR TO COMMENCEMENT OF WORK.
2. CONFORM TO APPLICABLE CODE FOR SAFETY OF ADJACENT STRUCTURES, DUST CONTROL, RUNOFF CONTROL, AND HAULING, DISPOSAL AND STORAGE OF DEBRIS.
3. PROVIDE, ERECT, AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES.
4. MAINTAIN EXISTING UTILITIES TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS. DO NOT INTERRUPT EXISTING UTILITIES SERVING OPERATING FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY OWNER AND AUTHORITIES HAVING JURISDICTION.
5. NOTIFY ADJACENT OWNERS OF WORK THAT MAY AFFECT THEIR PROPERTY, POTENTIAL NOISE, UTILITY OUTAGE, OR DISRUPTION. COORDINATE WITH OWNER.
6. PREVENT MOVEMENT OR SETTLEMENT OF ADJACENT STRUCTURES. PROVIDE BRACING AND SHORING.
7. LOCATE AND IDENTIFY ALL EXISTING UTILITIES WITHIN THE VICINITY OF ANY TRENCHING OR DIGGING. DISCONNECT AND SEAL OR CAP OFF UTILITY SERVICES THAT WILL BE AFFECTED BY THIS PROJECT. NOTIFY AFFECTED UTILITY COMPANIES BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS. VERIFY THAT UTILITIES HAVE BEEN DISCONNECTED AND CAPPED.
8. DEMOLISH AND REMOVE COMPONENTS IN AN ORDERLY AND CAREFUL MANNER.
9. PROTECT EXISTING FEATURES THAT ARE NOT TO BE DEMOLISHED.
10. CONDUCT OPERATIONS WITH MINIMUM INTERFERENCE TO PUBLIC OR PRIVATE ACCESSES.
11. MAINTAIN EGRESS AND ACCESS AT ALL TIMES. DO NOT CLOSE OR OBSTRUCT ROADWAYS, OR SIDEWALKS WITHOUT PERMITS. COORDINATE W/ AUTHORITY HAVING JURISDICTION.
12. CEASE OPERATIONS IMMEDIATELY IF ADJACENT STRUCTURES APPEAR TO BE IN DANGER. NOTIFY AUTHORITY HAVING JURISDICTION.
13. ROUGH GRADE AND COMPACT AREAS AFFECTED BY DEMOLITION TO MAINTAIN SITE GRADES AND CONTOURS.
14. FIELD VERIFY EXISTING CONDITIONS AND CORRELATE WITH REQUIREMENTS INDICATED ON DEMOLITION PLAN TO DETERMINE EXTENT OF SELECTIVE DEMOLITION REQUIRED.
15. CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH SELECTIVE DEMOLITION OPERATIONS.
16. CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN. ENSURE SAFE PASSAGE OF PEOPLE AROUND SELECTIVE DEMOLITION AREA.
17. USE WATER MIST, TEMPORARY ENCLOSURES AND OTHER SUITABLE METHODS TO LIMIT THE SPREAD OF DUST AND DIRT. COMPLY WITH GOVERNING ENVIRONMENTAL PROTECTION REGULATIONS. DO NOT USE WATER WHEN IT MAY DAMAGE EXISTING CONSTRUCTION, SUCH AS CAUSING ICING, FLOODING, AND TRANSPORTING POLLUTANTS.
18. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
19. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE START OF SELECTIVE DEMOLITION.
20. PROMPTLY DISPOSE OF DEMOLISHED MATERIALS. ALL DEBRIS RESULTING FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE AT A FACILITY APPROVED TO RECEIVE THE DEBRIS. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE. DO NOT BURN DEMOLISHED MATERIALS ON-SITE.

WINTER WORK:

SNOW PLOWING REQUIREMENTS:

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

1. RECESSED INTO THE PAVEMENT AND PINNED.

OR

2. PINNED WITH ASPHALT RAMPS PLACED ALONG ALL EDGES. RAMPS SHALL BE SLOPED AT 1 INCH RISE PER 6 FEET RUN MAXIMUM. "RAISE PLOW" SIGNS SUPPLEMENTED WITH TYPE A FLASHING LIGHTS MUST BE ERECTED AN APPROPRIATE DISTANCE BEFORE THE EXCAVATION; SIGNS AND LIGHTS MUST MEET NYSDOT MUTCD SPECIFICATIONS.

WINTER TIME EARTHWORK REQUIREMENTS:

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

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

PAVEMENT REPLACEMENT REQUIREMENTS:

DUE TO ASPHALT PLANTS CLOSED IN THE WINTER, TEMPORARY PAVEMENT REPLACEMENTS SHALL BE AS PER THE NYSOOT PERMIT FIELD ENGINEER (AKA INSPECTOR) AND/OR RESIDENT ENGINEER. PERMITTEE MUST MONITOR AND MAINTAIN THE TEMPORARY PAVEMENT REPLACEMENT.

TEMPORARY PAVEMENT REPLACEMENTS ARE REQUIRED TO BE REPLACEDIN-KIND IN THE SPRING WHEN THE WEATHER ALLOWS NYSDOT STANDARD SPECIFICATIONS TO BE MET.

THERE MAY BE DIFFERENT MATERIAL REQUIREMENTS,PAVEMENT/ SUBBASE COURSES AND PAVEMENT/ SUBBASE THICKNESS FOR THE DIFFERENT PAVEMENT AREAS. ALL AREAS ARE REQUIRED TO BE REPLACED N-KIND AS PER THE NYSDOT PERMIT INSPECTOR AND/OR RESIDENT ENGINEER. TYPES OF PAVEMENT AREAS ARE AS FOLLOWS:

1. STATE HIGHWAY TRAVEL AND TURNING LANES PAVEMENT
2. STATE HIGHWAY SHOULDER PAVEMENT
3. COMMERCIAL DRIVEWAY ENTRANCES TO A STATE HIGHWAY
   a. IF COMMERCIAL DRIVEWAY ENTRANCE HAS MORE PAVEMENT THAN SHOULDER, COMMERCIAL DRIVEWAY PAVEMENT IS USED FOR DRIVEWAY APRON/ TURNING AREA ACROSS THE SHOULDER.
   b. MOST COMMERCIAL DRIVEWAY ENTRANCES HAVE THE SAME AMOUNT OF PAVEMENT AS STATE HIGHWAY TRAVEL AND TURNING LANES DUE TO VOLUME OF TRAFFIC AND TRUCK TRAFFIC USING THE ENTRANCE.
4. PUBLIC ROAD AND SUBDIVISION ENTRANCES TO A STATE HIGHWAY
   SEE COMMENTS FOR COMMERCIAL DRIVEWAY ENTRANCES.
5. RESIDENTIAL DRIVEWAY ENTRANCES TO A STATE HIGHWAY
   IF SHOULDER HAS MORE PAVEMENT THAN RESIDENTIAL DRIVEWAY ENTRANCE, SHOULDER PAVEMENT IS USED FOR SHOULDER AREA AND RESIDENTIAL DRIVEWAY PAVEMENT BEGINS AT BACK EDGE OF SHOULDER.

ALL PAVEMENT CROSS SLOPES AND DRIVEWAY PROFILES SHALL BE MAINTAINED OR CAN BE CORRECTED (DEPENDING ON EXTENT OF THE UTILITY WORK) AS ORDERED BY THE NYSDOT PERMIT FIELD ENGINEER (AKA INSPECTOR) AND/OR RESIDENT ENGINEER (AOBE).

PERMANENT PAVEMENT REPLACEMENTS FOR UNDERGROUND UTILITIES SHALL BE AS PER NYSDOT HIGHWAY DESIGN MANUAL CHAPTER 13 APPENDIX 13C,"REQUIREMENTS FOR THE DESIGN AND CONSTRUCTION OF UNDERGROUND UTILITY INSTALLATIONS WITHIN THE STATE HIGHWAY RIGHT-OF-WAY" (AKA BLUE BOOK), LATEST REVISION AND/OR EDITION AND DRAWINGS:

DWG. 7 BACKFILL AND PAVEMENT STRUCTURE REPLACEMENT DETAILS FOR FULL DEPTH REPAIR OF UTILITY CUTS
IN EXISTING PORTLAND CEMENT CONCRETE (PCC) PAVEMENT

DWG. 8 BACKFILL AND PAVEMENT STRUCTURE REPLACEMENT DETAILS FOR FULL DEPTH REPAIR OF UTILITY CUTS IN EXISTING HOT MIX ASPHALT (HMA) PAVEMENT

DWG. 9 BACKFILL AND PAVEMENT STRUCTURE REPLACEMENT DETAILS FOR UTILITY KEYHOLE AND BELLHOLE CUTOUTS

DWG. 10 PLACING "CONTROLLED LOW STRENGTH MATERIAL (CLSM)"
BACKFILL AT EXISTING UTILITIES

PERMITTEE MUST MAKE ARRANGEMENTS WITH THE NYSDOT PERMIT FIELD ENGINEER (AKA INSPECTOR) AND/OR RESIDENT ENGINEER FOR FIELD VISIT TO ENSURE PAVEMENT REPLACEMENT IS DONE PROPERLY TO CORRECT THICKNESS.

ROCK REMOVAL NOTES:

ROCK REMOVAL BY MECHANICAL MEANS ONLY IS PERMITTED WITHIN THE NYSDOT ROW. BLASTING OF BEDROCK IS NOT PERMITTED AT THIS SITE IN ORDER TO COMPLETE THE PROPOSED DEVELOPMENT. HOWEVER, THESE NOTES ARE INCLUDED SHOULD UNFORESEEN CONDITIONS REQUIRE THE NEED FOR BLASTING TO EXCAVATE BEDROCK AND NYSDOT WERE TO AMEND THE PERMIT TO ALLOW THE CONTRACTOR TO DO. ALL COSTS SHALL BE BOURNE BY THE CONTRACTOR.

1. ALL RECOMMENDED SAFETY REQUIREMENTS AND STANDARDS REFERENCED AND ANY LOCAL RESTRICTIONS SHALL BE APPLIED AS REQUIRED FOR SAFETY, SECURITY, AND SPECIFICALLY RELATED DETAILS FOR BLASTING PROCEDURES. AT ALL TIMES, FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE FOLLOWED CONCERNING THE TRANSPORTATION AND STORAGE OF EXPLOSIVES.
2. A MINIMUM OF FOUR (4) WEEKS PRIOR TO COMMENCEMENT OF THE INITIAL BLASTING OPERATIONS, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AGENCIES AS APPROPRIATE: POLICE AGENCIES, GAS AND ELECTRIC SERVICE COMPANIES, TELEPHONE AND CABLE OPERATING COMPANIES, TOWN WATER AND SEWER DEPARTMENTS, NYSDOT, AND LOCAL FIRE, RESCUE, AND AMBULANCE SERVICES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE RESULTING FROM THE USE OF EXPLOSIVES. EXPLOSIVES SHALL BE STORED IN A SECURE MANNER IN COMPLIANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES.
4. THE CONTRACTOR SHALL NOTIFY EACH PROPERTY AND UTILITY OWNER HAVING A BUILDING, STRUCTURE, OR OTHER INSTALLATION ABOVE OR BELOW GROUND IN PROXIMITY TO THE SITE OF THE WORK OF HIS INTENTION TO USE EXPLOSIVES. NOTICE SHALL BE GIVEN SUFFICIENTLY IN ADVANCE TO ENABLE THE OWNERS TO TAKE STEPS TO PROTECT THEIR PROPERTY. NOTICE SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR DAMAGE RESULTING FROM HIS BLASTING OPERATIONS.
5. THE CONTRACTOR SHALL SCHEDULE AND CONDUCT PRE-BLAST SURVEYS WITH PROPERTY OWNERS LOCATED IN THE AREA POTENTIALLY AFFECTED BY AIRBLAST OVERPRESSURE AND GROUND VIBRATION OR AS REQUIRED.
6. THE CONTRACTOR SHALL IMPLEMENT ENGINEERING MEASURES IN ORDER TO MINIMIZE THE POTENTIAL IMPACTS OF DUST, NOISE AND GROUND VIBRATION. BLAST VIBRATION CONTROL WILL BE ACHIEVED BY LIMITING THE CHARGE PER DELAY SO THAT THE PEAK PARTICLE VELOCITY REMAINS BELOW THE SPECIFIED LEVELS.
7. A APPROPRIATELY QUALIFIED, LICENSED BLASTING SPECIALIST, WITH EXPERIENCE SHALL BE ONSITE AND SUPERVISE BLASTING OPERATIONS. AT ALL TIMES, THE BLASTING AREA SHALL BE RESTRICTED TO BLASTING OPERATIONS AND AUTHORIZED PERSONNEL ONLY.
8. PROTECTIVE MEASURES INCLUDING INSTALLATION OF SIGNAGE, NOTIFICATION OF NEARBY RESIDENTS, TRAFFIC CONTROL AS NECESSARY ALONG NEARBY ROADS, AUDIBLE PRE-BLAST WARNINGS, AND USE OF BLAST MATS SHALL BE IMPLEMENTED.
9. DELIVERY AND TRANSPORT OF EXPLOSIVES FROM THE POWDER MAGAZINES TO THE BLAST AREA WILL BE BY VEHICLES SPECIFICALLY DESIGNED FOR THIS USE BY THE CRITERIA OUTLINED IN THE SAFETY REQUIREMENTS. ONLY AUTHORIZED PERSONS WILL TRANSPORT AND HANDLE THE EXPLOSIVES AS DESIGNATED BY THE ISSUING AUTHORITY OF THOSE LICENSES FOR THIS PURPOSE.
10. MONITORING OF PEAK PARTICLE VELOCITY (INCHES/SECOND) AND PEAK AIRBLAST OVERPRESSURE (PSI) SHALL BE PERFORMED DURING ALL BLASTS.

GRADING NOTES:

1. PRIOR TO SITE DISTURBANCE, CONTRACTOR TO INSTALL EROSION & SEDIMENT CONTROL MEASURES.
2. IF ROCK REMOVAL BY BLASTING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVALS AND PERMITS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
3. ALL BLASTING OPERATIONS WILL ADHERE TO NEW YORK STATE AND LOCAL AUTHORITY ORDINANCES GOVERNING THE USE OF EXPLOSIVES. THE STATE REGULATIONS ARE CONTAINED IN 12 NYCRR 39 AND INDUSTRIAL CODE RULE 153.
4. STRIP ALL TOPSOIL PRIOR TO COMMENCING EARTHWORK OPERATIONS. TOPSOIL MAY BE STORED AND REUSED IN LAWN AND PLANTING AREAS ONLY. TOPSOIL AND SEED ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE TO REMAIN GREEN.
5. BOX ALL TREES AND HOUSE ALL SHRUBS AND HEDGES BEFORE PLACING EARTH AGAINST OR NEAR THEM. ORNAMENTAL TREES, SHRUBS AND HEDGES WHICH MUST BE REMOVED DURING CONSTRUCTION SHALL BE HEALED IN AND RE-PLANTED IN AS GOOD A CONDITION AS THEY WERE BEFORE THEIR REMOVAL. ANY DAMAGED TREES, SHRUBS, AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
6. ALL EARTHWORK SHALL BE SMOOTHLY AND EVENLY BLENDED INTO EXISTING CONDITIONS. NO WORK, STORAGE OR TRESPASS SHALL BE PERMITTED BEYOND THE BOUNDARIES OF ANY EASEMENT OR PROPERTY LINE.
7. REMOVE ALL VEGETATION, TREES, STUMPS, GRASSES, ORGANIC SOILS, DEBRIS AND DELETERIOUS MATERIALS WITHIN THE AREAS SLATED FOR CONSTRUCTION.

TRAFFIC CONTROL PLAN:

TEMPORARY LANE CLOSURES:

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

1. NO LANE CLOSURES SHALL BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER-IN-CHARGE (EIC).
2. THE STATE RESERVES THE RIGHT TO ALLOW WORK WITHIN THE CONTRACT LIMITS BY OTHERS ALONG KEY CORRIDORS. IN ORDER TO MINIMIZE INCONVENIENCE TO THE TRAVELING PUBLIC, ANY LANE CLOSURES REQUIRED WITHIN CONTRACT LIMITS MUST BE APPROVED BY THE SURFACE TRANSPORTATION CONTROLLER (STC). KEY CORRIDORS ARE DEFINED AS 1-684, TACONIC STATE PARKWAY (TSP), PALISADES INTERSTATE PARKWAY (PIP), SPRAIN BROOK PARKWAY (SBP), SAW MILL RIVER PARKWAY (SMRP), HUTCHINSON RIVER PARKWAY (HRP), CROSS COUNTY PARKWAY (CCP), NYS RTE.17 (FUTURE 1-86), 1-84 (INCLUDING THE NEWBURGH-BEACON BRIDGE), 1-87 (INCLUDING THE TAPPAN ZEE BRIDGE), 1-287, 1- 95 AND 1-90.

THE CONTRACTORS' ATTENTION IS DIRECTED TO THE FACT THEY ARE RESPONSIBLE TO FORWARD REQUESTS THROUGH THE EIC TO THE STC FOR LANE CLOSURE APPROVALS. THESE REQUESTS MUST BE SUBMITTED TO THE STC AT THE EMAIL ADDRESS:
STC-R08@DOT.STATE.NY .US, A MINIMUM OF SEVEN (7) DAYS IN ADVANCE OF SCHEDULED CLOSURES. THE STC SHALL RESPOND WITHIN FOUR BUSINESS DAYS OF RECEIPT OF REQUEST. ATTENTION IS ALSO DIRECTED TO THE FACT THAT, DUE TO POSSIBLE TRAFFIC CONTROL CONFLICTS, APPROVAL MAY OR MAY NOT BE GRANTED FOR THE DATE(S) REQUESTED. ANY ADDITIONAL COSTS, DELAYS OR REMOBILIZATIONS ASSOCIATED WITH THE APPROVAL PROCESS SHALL BE INCLUDED IN THE BID PRICE FOR BASIC WORK ZONE TRAFFIC CONTROL.

3. NO LANE CLOSURES WILL BE PERMITTED DURING NON-WORKING HOURS, UNLESS SPECIFICALLY PROVIDED ELSEWHERE IN THE CONTRACT.
4. ON KEY CORRIDORS AS DESCRIBED IN (B) THE REQUIRED NUMBER OF LANES BY TIME OF DAY CHART IN THE PROPOSAL SHALL BE FOLLOWED. ON ALL OTHER ROUTES THE SAME NUMBER OF TRAVEL LANES (INCLUDING TURNING LANES), AS EXIST PRIOR TO THIS CONTRACT, SHALL BE MAINTAINED IN EACH DIRECTION DURING THE HOURS OF 7:00 A.M. TO 9:00 A.M. AND 4:00 P.M. TO 6:00 P.M. – MONDAY TO FRIDAY, INCLUSIVE.
5. IN AREAS OF MAJOR SHOPPING MALLS, THE SAME NUMBER OF TRAVEL LANES (INCLUDING TURNING LANES), AS EXIST PRIOR TO THIS CONTRACT, SHALL BE MAINTAINED IN EACH DIRECTION DURING THE HOURS OF 10:00 A.M. TO 4:00 P.M. ON SATURDAYS.
6. THE TIME RESTRICTIONS LISTED ABOVE CAN BE SHIFTED AS TRAFFIC CONDITIONS WARRANT, AND THE CONTRACTOR SHALL BE AWARE THAT THE ENGINEER-IN-CHARGE (EIC) HAS THE ABILITY TO ORDER ADDITIONAL TIME RESTRICTIONS OF UP TO ONE HOUR PER WORK DAY TO THE TIME RESTRICTIONS LISTED ABOVE IF TRAFFIC CONDITIONS WARRANT, AT NO COST TO THE STATE. THE CONTRACTOR SHALL NOT HAVE ANY DELAY CLAIMS AGAINST THE STATE IF THE EIC ORDERS UP TO ONE HOUR OF ADDITIONAL TIME RESTRICTIONS PER DAY.
6. THE ENGINEER-IN-CHARGE IS AUTHORIZED TO REDUCE THE ABOVE TIME RESTRICTIONS ON THE NON-KEY CORRIDORS AS TRAFFIC CONDITIONS WARRANT.
7. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT THE FOLLOWING HOLIDAY WORK RESTRICTIONS ARE APPLICABLE TO THIS PROJECT. DURING THESE HOLIDAY PERIODS, THE CONTRACTOR WILL NOT BE ALLOWED TO PERFORM ANY WORK THAT WILL BE DISRUPTIVE TO TRAFFIC, INCLUDING BUT NOT LIMITED TO LANE CLOSURES. LANE CLOSURES WILL NOT BE PERMITTED DURING THE FOLLOWING STATE RECOGNIZED HOLIDAYS:

   NEW YEAR'S DAY
   MEMORIAL DAY
   INDEPENDENCE DAY
   LABOR DAY
   THANKSGIVING DAY
   CHRISTMAS DAY

   IF THE HOLIDAY IS ON A MONDAY, NO LANE CLOSURES WILL BE PERMITTED FROM 6AM FRIDAY TO 10 A.M. TUESDAY. IF THE HOLIDAY IS ON A TUESDAY, NO LANE CLOSURES WILL BE PERMITTED FROM 6AM FRIDAY TO 10 A.M. WEDNESDAY. IF THE HOLIDAY IS ON A WEDNESDAY, NO LANE CLOSURES WILL BE PERMITTED FROM 6AM TUESDAY TO 10 A.M. THURSDAY. IF THE HOLIDAY IS ON A THURSDAY OR FRIDAY, NO LANE CLOSURES WILL BE PERMITTED FROM 6AM THE DAY BEFORE THE HOLIDAY TO 10 A.M. MONDAY. IF THE HOLIDAY IS ON A WEEKEND DAY, NO LANE CLOSURES WILL BE PERMITTED FROM 6AM FRIDAY TO 10 A.M. MONDAY.
8. THE CONTRACTOR IS ALSO ADVISED THAT THE STATE RESERVES THE RIGHT TO PRECLUDE LANE CLOSURES DURING PERIODS OF INCLEMENT WEATHER, WET OR ICY PAVEMENT, REDUCED VISIBILITY, TRAFFIC ACCIDENTS OR ANY OTHER EMERGENCIES. THE STATE MAY ALTER ANY LANE CLOSURES SHOULD TRAFFIC CONDITIONS OR OTHER UNFORESEEN CIRCUMSTANCES ARISE WHICH WOULD ADVERSELY AFFECT THE TRAFFIC FLOW. THE CONTRACTOR IS ALSO ALERTED TO THE FACT THAT INCIDENT MANAGEMENT OR TRAFFIC CONDITIONS MIGHT FORCE HIS/HER CONSTRUCTION OPERATION TO STOP, EVEN DURING TIME WHERE SUCH OPERATION WOULD NORMALLY BE PERMITTED. TEN SUCH OCCURRENCES PER CALENDAR YEAR SHOULD BE TAKEN INTO CONSIDERATION AS A REASONABLE FREQUENCY OF SUCH EVENT WHEN BIDDING THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM AGAINST THE STATE FOR ANY DELAYS OR EXTRA COSTS INCURRED IN COMPLYING WITH THESE RESTRICTIONS.
9. THE STATE MAY GRANT A WAIVER OF THESE RESTRICTIONS UPON A TIMELY RECEIPT OF A REQUEST FOR SAID WAIVER FROM THE CONTRACTOR. A MINIMUM OF FIVE WORKING DAYS FOR THE REVIEW OF THE CONTRACTOR'S REQUEST WILL BE REQUIRED.

LANDSCAPE, ADA, & ENVIRONMENTAL NOTES:

1. ALL DISTURBED AREAS WITHIN THE STATE R.O.W. ARE TO BE TOPSOILED, SEEDED AND MULCHED TO GUARANTEE AN ACCEPTABLE STAND OF GRASS.
2. NO TREES WITHIN THE STATE R.O.W. OVER 6" D.B.H. (DIAMETER BREAST HEIGHT) ARE TO BE REMOVED WITHOUT PRIOR PERMISSION FROM THE REGIONAL LANDSCAPE ARCHITECT / OFFICE. THE REGIONAL LANDSCAPE ARCHITECT/ OFFICE MAY BE CONTACTED AT (845) 431-5853.
3. ACCEPTABLE ISLAND TREATMENTS OR OTHER LANDSCAPED AREAS ARE:
   a. MAINTAINED TURF,
   b. ORGANIC MULCH WITH OR WITHOUT PLANTS,
      ***PLANTS, AT THEIR MATURE HEIGHT, SHALL NOT INVADE THE SIGHT DISTANCE REQUIREMENTS OF DRIVEWAYS. PLANTS MUST BE 2 FEET OR LESS IN HEIGHT ABOVE THE DRIVEWAY PAVEMENT (18" ABOVE 6" CURB).
   c. CONCRETE PAVERS/ LANDSCAPE BRICK,
      ***FLUSH CHANNELIZING ISLANDS IN LIEU OF LARGE ASPHALT DRIVEWAYS WITH PAVEMENT MARKINGS MUST BE DESIGNED AND CONSTRUCTED TO SUPPORT TRAFFIC LOAD OF LARGE VEHICLE TURN PATHS.
   d. CONCRETE (IF FOR SIDEWALK, 5 FEET + SPACE FOR SIGNS MINIMUM BETWEEN CURBS),
   e. COMBINATIONS OF THESE.
   f. LANDSCAPE PLANTING DETAILS SHALL COMPLY WITH NYSDOT STANDARD SHEET M611-1 OR 611-01.
4. UNACCEPTABLE ISLAND TREATMENTS OR OTHER LANDSCAPED AREAS ARE:
   a. ASPHALT
   b. LOOSE STONE/ GRAVEL OF ANY SIZE.
5. APPLICANT/ PERMITTEE AGREES TO MAINTAIN LANDSCAPING ON NYSDOT ROW.
   ***BLOWING OF HAZARDOUS DEBRIS (DUST, DIRT, LEAVES, ETC.) WITH ANY KIND OF FORCE TOWARDS THE STATE HIGHWAY, OTHER PUBLIC ROADWAY OR DRIVEWAY ENTRANCES IS PROHIBITED. LEAF BLOWERS OR OTHER POWER TOOLS THAT CAN INTERFERE WITH TRAFFIC, DAMAGE A VEHICLE / BICYCLE / PROPERTY OF OTHER HIGHWAY USERS OR CAUSE INJURY TO PERSONS ARE NOT PERMITTED FOR MAINTENANCE OPERATIONS. MAINTENANCE SHALL INCLUDE NORMAL MANUAL LANDSCAPE TYPE LABOR.
6. ALL SIDEWALK CURB RAMPS AND DETECTABLE WARNING SURFACES SHALL BE AS PER:
   a. NYSOOT STANDARD SHEETS
      METRIC UNITS (EB 06-051, APPROVED 2006-12-07 EFFECTIVE 2007-05-03)
      M608-10 SHEET 1 OF 4 SIDEWALK CURB RAMPS DIMENSIONS, DETAILS AND GEOMETRY
      M608-1 SHEET 2 OF 4 SIDEWALK CURB RAMPS CONFIGURATIONS: TYPE 1 THRU 8
      M608-12 SHEET 3 OF 4 SIDEWALK CURB RAMPS CONFIGURATIONS: TYPE 9 THRU 13
      M608-13 SHEET 4 OF 4 SIDEWALK CURB RAMPS DETECTABLE WARNING DETAILS
      US CUSTOMARY UNITS (EB 08-036, APPROVED 2008-09-19 EFFECTIVE 2009-01-08)
      608-01 SHEET 1 OF 4 SIDEWALK CURB RAMP DETAILS DIMENSIONS AND GEOMETRY
      608-01 SHEET 2 OF 4 SIDEWALK CURB RAMP DETAILS CONFIGURATIONS: TYPE 1 THRU 8
      608-01 SHEET 3 OF 4 SIDEWALK CURB RAMP DETAILS CONFIGURATIONS: TYPE 9 THRU 13
      608-01 SHEET 4 OF 4 SIDEWALK CURB RAMP DETAILS DETECTABLE WARNINGS
   b. NYSDOT STANDARD SPECIFICATIONS MAY 1, 2008 U.S. CUSTOMARY UNITS
      ITEM 608.20 SURFACE-APPLIED DETECTABLE WARNING UNITS SQUARE YARD
      ITEM 608.21 EMBEDDED DETECTABLE WARNING UNITS SQUARE YARD
      ITEM 608.22 STAMPED CONCRETE DETECTABLE WARNING UNITS SQUARE YARD
7. OTHER ACCESSIBLE REQUIREMENTS SHALL BE AS PER:
   a. ENGINEERING INSTRUCTION 92-006 – ACCESSIBLE BUS STOPS
   b. NYSDOT STANDARD SHEET:
      METRIC UNITS (EB 02-039, APPROVED 2002-07-25 EFFECTIVE 2003-01-16)
      M608-4RL – DETAILS, ACCESSIBLE PARKING FOR PERSONS WITH DISABILITES
      U.S.CUSTOMARY UNITS (EB 08-036, APPROVED 2008-09-19 EFFECTIVE 2009-01-0S)
      608-02 – DETAILS, ACCESSIBLE PARKING FOR PERSONS WITH DISABILITES
8. PAVEMENT MARKINGS FOR CROSSWALKS & STOP LINES ARE AS PER NYSDOT STANDARD SHEETS, THE LATEST VERSIONS:
   METRIC UNITS– STOP LINES ARE ON STANDARD SHEET M685-1R1, CROSSWALKS ARE ON STANDARD SHEET M685-2R3
   U.S.CUSTOMARY UNITS– STOP LINES ARE ON STANDARD SHEET 685-01 SHEET 1 OF 5, CROSSWALKS ARE ON STANDARD SHEET 685-01 SHEET 2 OF 5

TOPSOIL SPECIFICATIONS:

1. EXISTING EXCESS TOPSOIL SHALL BE REMOVED AND STORED IN TOPSOIL STOCKPILES SUFFICIENTLY REMOVED FROM OTHER EXCAVATION OR DISTURBANCE TO AVOID MIXING. SILT FENCE SHALL BE INSTALLED AROUND TOPSOIL STOCKPILE AREAS.

SITE PREPARATION:

1. COMPLETE ROUGH GRADING AND FINAL GRADE, ALLOWING FOR DEPTH OF TOPSOIL TO BE ADDED.
2. SCARIFY ALL COMPACT, SLOWLY PERMEABLE, MEDIUM AND FINE TEXTURED SUBSOIL AREAS. SCARIFY AT APPROXIMATELY RIGHT ANGLES TO THE SLOPE DIRECTION IN SOIL AREAS THAT ARE STEEPER THAN 5%.
3. REMOVE REFUSE, WOODY PLANT PARTS, STONES OVER 3 INCHES IN DIAMETER, AND OTHER LITTER.

TOPSOIL MATERIALS:

1. NEW TOPSOIL SHALL BE BETTER THAN OR EQUAL TO THE QUALITY OF THE EXISTING ADJACENT TOPSOIL. IT SHALL MEET THE FOLLOWING CRITERIA:
   A. ORIGINAL LOAM TOPSOIL, WELL DRAINED HOMOGENEOUS TEXTURE AND OF UNIFORM GRADE, WITHOUT THE ADMIXTURE OF SUBSOIL MATERIAL AND FREE OF DENSE MATERIAL, HARDPAN, CLAY, STONES, SOD OR OTHER OBJECTIONABLE MATERIAL.
   B. CONTAINING NOT LESS THAN 5% NOR MORE THAN 20% ORGANIC MATTER IN THAT PORTION OF A SAMPLING PASSING A 1/4" SIEVE WHEN DETERMINED BY THE WET COMBUSTION METHOD ON A SAMPLE DRIED AT 105°C.
   C. CONTAINING A PH VALUE WITHIN THE RANGE OF 6.5 TO 7.5 ON THAT PORTION OF THE SAMPLE WHICH PASSES A 1/4" SIEVE.
   D. CONTAINING THE FOLLOWING WASHED GRADATIONS:

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

APPLICATION AND GRADING:

1. TOPSOIL SHALL BE DISTRIBUTED TO A UNIFORM DEPTH OF 4" OVER THE AREA. IT SHALL NOT BE PLACED WHEN IT IS PARTLY FROZEN, MUDDY, OR ON FROZEN SLOPES OR OVER ICE, SNOW, OR STANDING WATER.
2. TOPSOIL PLACED AND GRADED ON SLOPES STEEPER THAN 5% SHALL BE PROMPTLY FERTILIZED, SEEDED, MULCHED AND STABILIZED BY "TRACKING" WITH SUITABLE EQUIPMENT.

VEGETATIVE COVER SPECIFICATIONS:

TEMPORARY VEGETATIVE COVER (DURING CONSTRUCTION):

1. SITE PREPARATION
   (SAME AS PERMANENT VEGETATIVE COVER)
2. SEED MIX: (APPLY AT RATE OF 3 TO 4 LBS PER 1000 SF)

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

3. SEEDING
   (SAME AS PERMANENT VEGETATIVE COVER)

PERMANENT VEGETATIVE COVER (AFTER CONSTRUCTION):

1. SITE PREPARATION
   A. BRING AREA TO BE SEEDED TO REQUIRED GRADE. A MINIMUM OF 4" OF TOPSOIL IS REQUIRED.
   B. PREPARE SEEDBED BY LOOSENING SOIL TO A DEPTH OF 4 INCHES.
   C. REMOVE ALL STONES OVER 1 INCH IN DIAMETER, STICKS AND FOREIGN MATTER FROM THE SURFACE.
   D. LIME TO PH OF 6.5.
   E. FERTILIZER: USE 5-10-5 (NPK) OR EQUIVALENT. APPLY AT RATE OF 4 LBS/1000 SF.
   F. INCORPORATE LIME AND FERTILIZER IN THE TOP 4 INCHES OF TOPSOIL.
   G. SMOOTH AND FIRM THE SEEDBED.
2. SEED MIXTURE FOR USE ON LAWN AREAS:
   PROVIDE FRESH, CLEAN, NEW-CROP SEED MIXED IN THE PROPORTIONS SPECIFIED FOR SPECIES AND VARIETY, AND CONFORMING TO FEDERAL AND STATE STANDARDS.

   LAWN SEED MIX: (APPLY AT RATE OF 5 TO 6 LBS PER 1000 SF)

   SUN AND PARTIAL SHADE:

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

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

   SHADE:

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

   **SHADE TOLERANT VARIETY

3. SEEDING
   A. APPLY SEED UNIFORMLY BY CYCLONE SEEDER CULTI-PACKER OR HYDRO-SEEDER AT RATE INDICATED.
   B. ALL SEEDED AREAS SHALL BE PROTECTED FROM EROSION BY ONE OF THE FOLLOWING METHODS:
      i. A UNIFORM BLANKET OF STRAW APPLIED AT A RATE OF 2 TONS /ACRE MIN., TO BE APPLIED ONCE SEEDING IS COMPLETE.
      ii. WOOD FIBER CELLULOSE APPLIED WITH SEED MIX BY HYDROSEEDER AT RATE OF 2,000 LBS/ACRE.
   C. ALL SEEDED SLOPES 3:1 OR GREATER SHALL BE PROTECTED FROM EROSION WITH JUTE MESH OR APPROVED EQUAL.
   D. IRRIGATE TO FULLY SATURATE SOIL LAYER, BUT NOT TO DISLODGE PLANTING SOIL.
   E. UNLESS OTHERWISE DIRECTED IN WRITING, SEED FROM MARCH 15TH TO JUNE 15TH, AND FROM AUGUST 15TH TO OCTOBER 15TH.

SPECIAL NOTES:

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

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

0 1 2 3
ORIGINAL SCALE IN INCHES

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rev.	date	description

GAS LAND 5200 ROUTE 9W

NYSDOT NOTES

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed SMD	checked CPL
date 01/20/22	scale NTS
project no. 81912.00	
sheet no. C502	

Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C502_81912-00_NYSDOTNOTES.dwg
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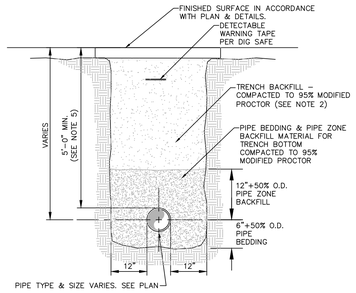
Date Printed: Jan 24, 2022, 8:32am



PIPE TYPE & SIZE VARIES. SEE PLAN

NOTES:

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

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

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

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

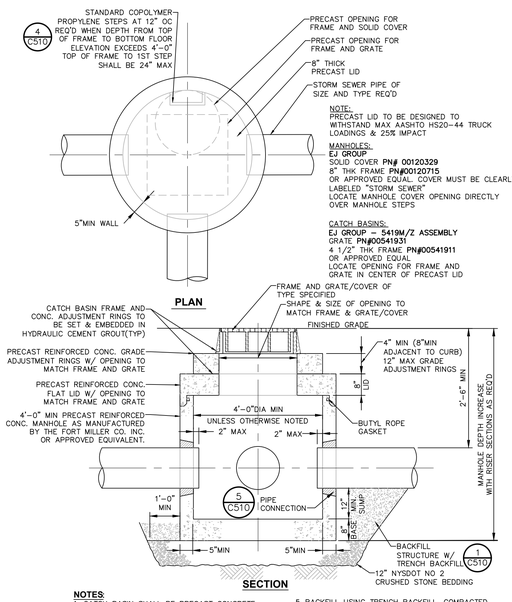
IN NON–TRAFFIC UNPAVED AREAS TRENCH BACKFILL CAN BE MATERIALS EXCAVATED FROM THE TRENCH AS APPROVED BY THE ENGINEER AND COMPACTED TO 90% MODIFIED PROCTOR.

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

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

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

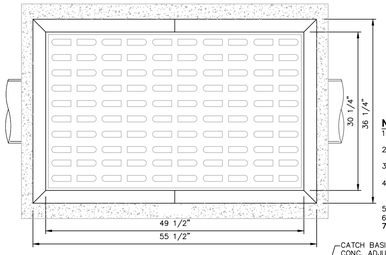
© 1 **PIPE TRENCH DETAIL (TYPICAL)**
SCALE: NOT TO SCALE



NOTES:

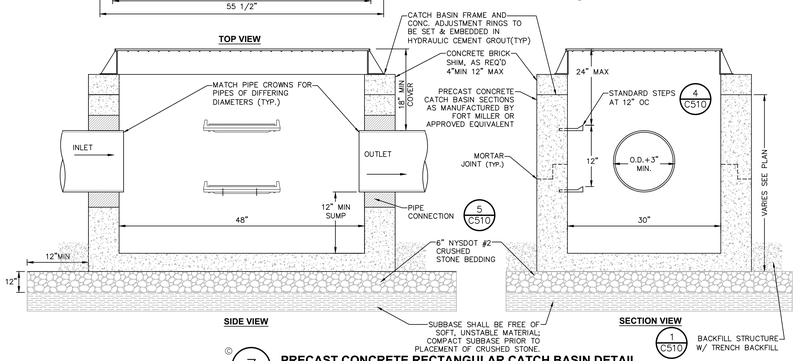
1. CATCH BASIN SHALL BE PRECAST CONCRETE. DESIGNED FOR HS20–44 VEHICULAR LOADING AND 25% IMPACT.
2. FRAME AND COVER SHALL BE DESIGNED FOR HS20–44 VEHICULAR LOADING & 25% IMPACT.
3. CONCRETE CATCH BASIN LID CLEAR OPENING DIMENSION MUST MATCH FRAME AND GRATE CLEAR OPENING DIMENSION.
4. CATCH BASINS HAVING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

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



NOTES:

1. CATCH BASIN SHALL BE PRECAST CONCRETE. DESIGNED FOR HS20–44 VEHICULAR LOADING AND 25% IMPACT.
2. FRAME AND COVER SHALL BE DESIGNED FOR HS20–44 VEHICULAR LOADING & 25% IMPACT.
3. CONCRETE CATCH BASIN CASTING CLEAR OPENING DIMENSION MUST MATCH FRAME AND GRATE CLEAR OPENING DIMENSION.
4. CATCH BASINS HAVING A DEPTH GREATER THAN 48" FROM FINISHED SURFACE TO THE TOP OF THE CONCRETE BASE SHALL BE PROVIDED WITH STEPS.
5. BACKFILL USING TRENCH BACKFILL, COMPACTED IN 6" LIFTS.
6. SUMPS FOR CATCH BASINS SHALL BE 12".
7. EJ GROUP GRATE & FRAME PN#00758535A01 OR EQUIVALENT.



© 3 **PRECAST CONCRETE RECTANGULAR CATCH BASIN DETAIL**
SCALE: NOT TO SCALE

STORM SEWER NOTES:

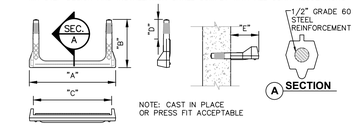
1. ALL STORM WATER MANAGEMENT STRUCTURES (I.E. CATCH BASIN, ETC.) SHALL BE REGULARLY INSPECTED FOR SEDIMENT ACCUMULATIONS; CATCH BASINS SHALL BE CLEANED WHEN SEDIMENT DEPTH REACHES A MAXIMUM OF 1/2 THE AVAILABLE SUMP DEPTH.
2. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CONSTRUCT A DEWATERING PIT (A.K.A. SUMP PIT) TO TRAP AND FILTER WATER FOR PUMPING TO A SUITABLE DISCHARGE AREA. THE DEWATERING PIT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL, LATEST EDITION.
3. ALL EROSION CONTROL MEASURES EMPLOYED DURING THE CONSTRUCTION PROCESS SHALL BE AS OUTLINED ON THE EROSION AND SEDIMENT CONTROL PLANS, DETAILS AND NOTES.

ACCEPTABLE MANHOLE STEPS

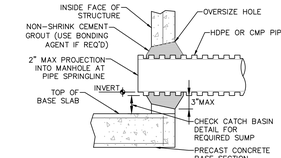
MANUFACTURER	PATTERN NUMBER	"A" STEP WIDTH	"B" LEG LENGTH	"C" RUNG CLEAR	"D" EMBED–MENT	"E" RUNG CLEAR
M.A. INDUSTRIES INC*	PS2–PF	14 3/4	9 1/4	13 3/4	3 3/8	5 7/8
M.A. INDUSTRIES INC*	PS2–PFS	14 3/4	8 1/4	13 3/4	3 3/8	4 7/8

* OR EQUIVALENT

MH STEP DESIGN AND INSTALLATION SHALL COMPLY WITH ALL OSHA REGULATIONS

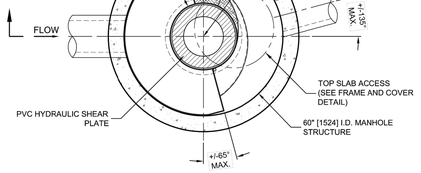


© 4 **COPOLYMER POLYPROPYLENE MH STEP**
SCALE: NOT TO SCALE

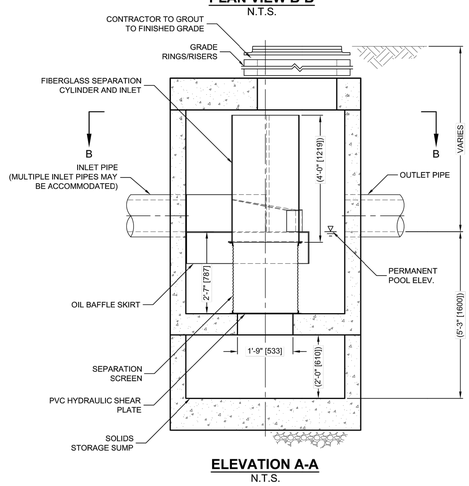


© 5 **PIPE CONNECTION TO DRAINAGE STRUCTURE- CMP OR HDPE CEMENT GROUT SEAL JOINT**
SCALE: NOT TO SCALE

© 6 **30"x48" RECTANGULAR STRUCTURE PLACEMENT AT CURB**
SCALE: NOT TO SCALE

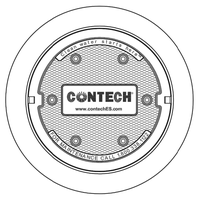


PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.

CDS2020-5-C DESIGN NOTES
THE STANDARD CDS2020-5-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.
CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			
* PER ENGINEER OF RECORD			

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

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

© 7 **CDS-5 (2020) HYDRODYNAMIC SEPARATOR DETAIL**
SCALE: NOT TO SCALE

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

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- New York City, NY

rev.	date	description

GAS LAND 5200 ROUTE 9W

STORM SEWER DETAILS

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SMD	CPL
date	scale
01/20/22	AS SHOWN
project no.	
81912.00	
sheet no.	
C510	

0 1 2 3
ORIGINAL SCALE IN INCHES

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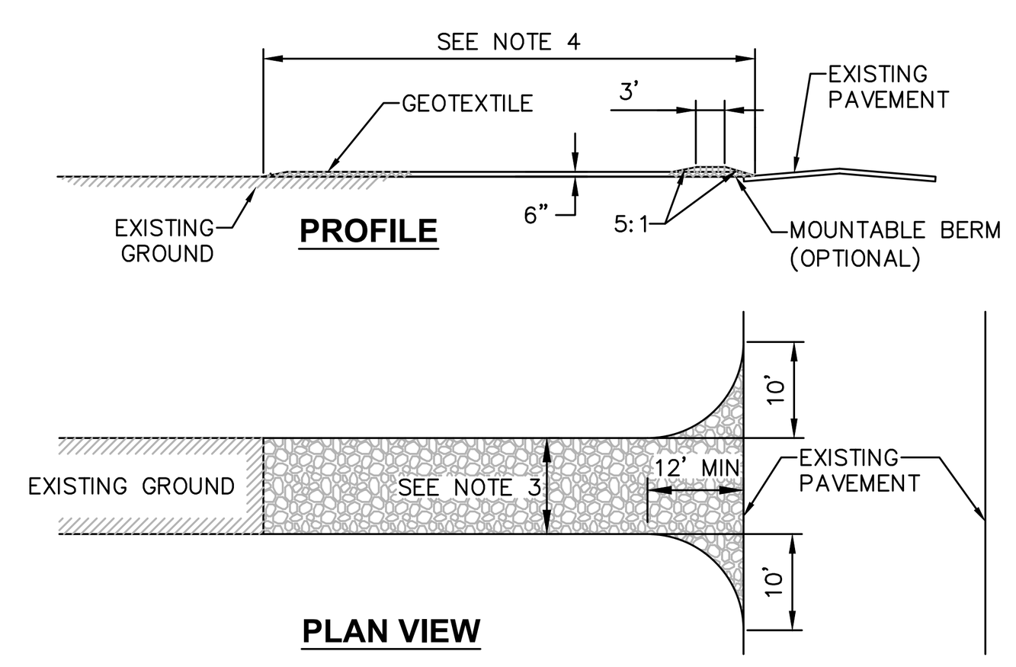
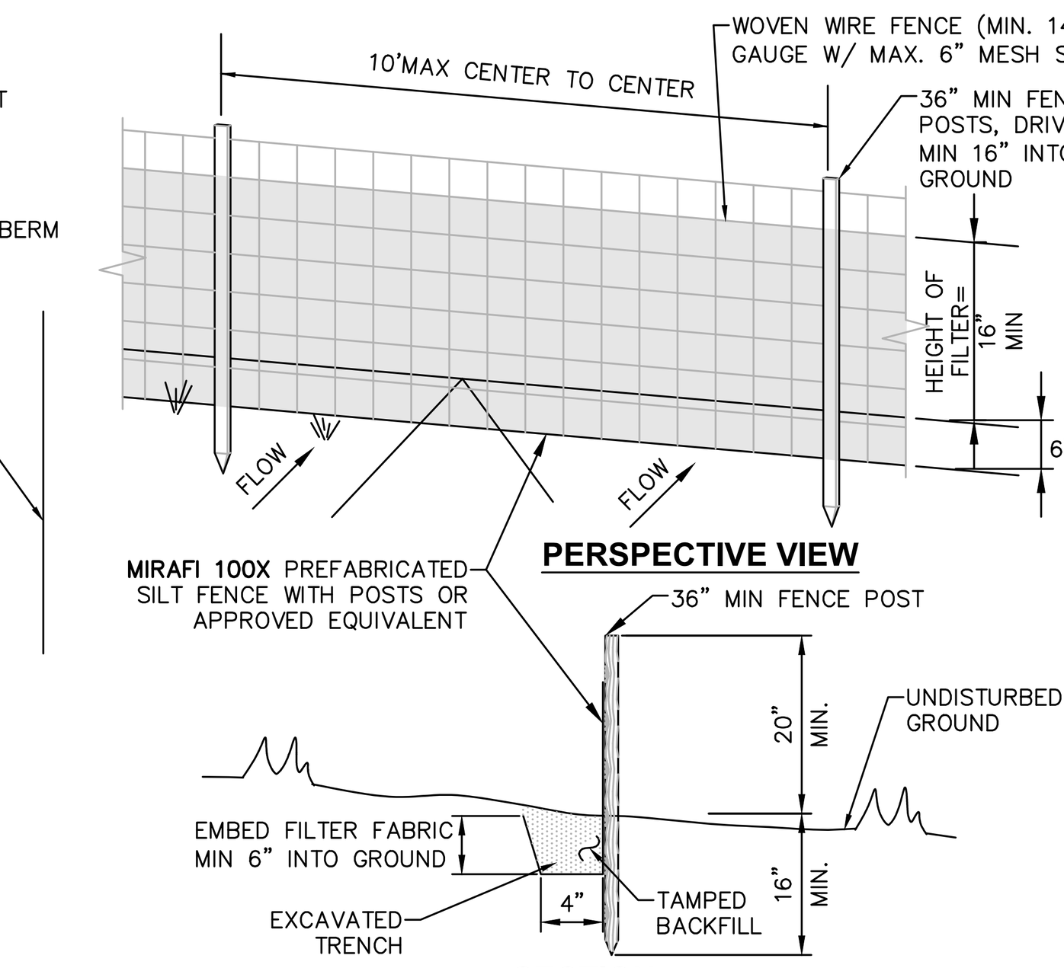
Date Printed: Jan 24, 2022, 8:53am



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

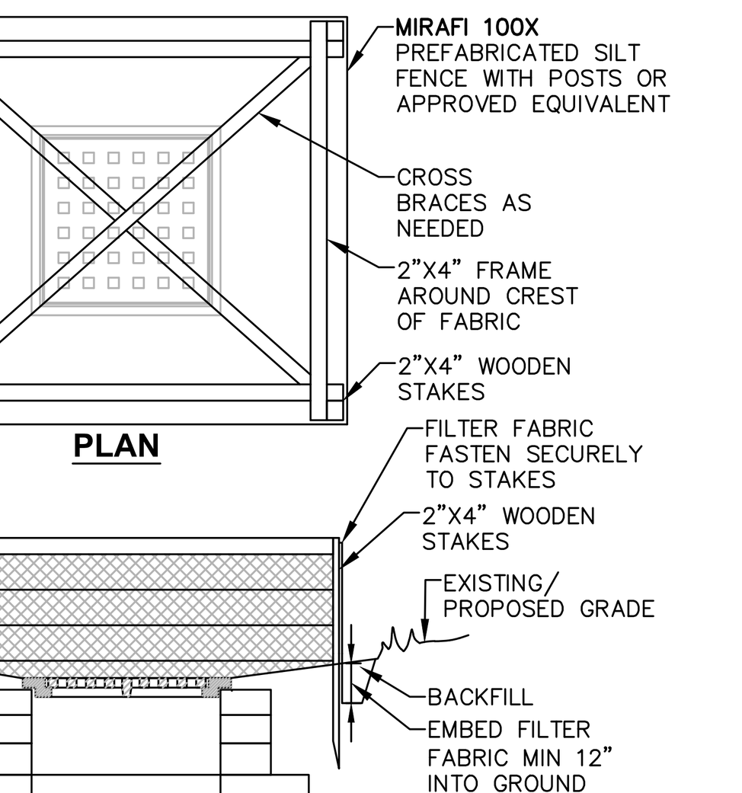
© 1 **STABILIZED CONSTRUCTION ACCESS DETAIL**
SCALE: NOT TO SCALE



NOTES:
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL "T" OR "U" TYPE OR HARDWOOD.
2. FILTER FABRIC TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAX MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIALS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. MAXIMUM DRAINAGE AREA FOR OVERLAND FLOW TO A SILT FENCE SHALL NOT EXCEED 1/4 ACRE PER 100 FEET OF FENCE.
6. SILT FENCE SHALL BE USED WHERE EROSION COULD OCCUR IN THE FORM OF SHEET EROSION.
7. SILT FENCE SHALL NOT BE USED WHEN A CONCENTRATION OF WATER IS FLOWING TO THE BARRIER.
8. MAXIMUM ALLOWABLE SLOPE LENGTHS CONTRIBUTING RUN-OFF TO A SILT FENCE ARE:

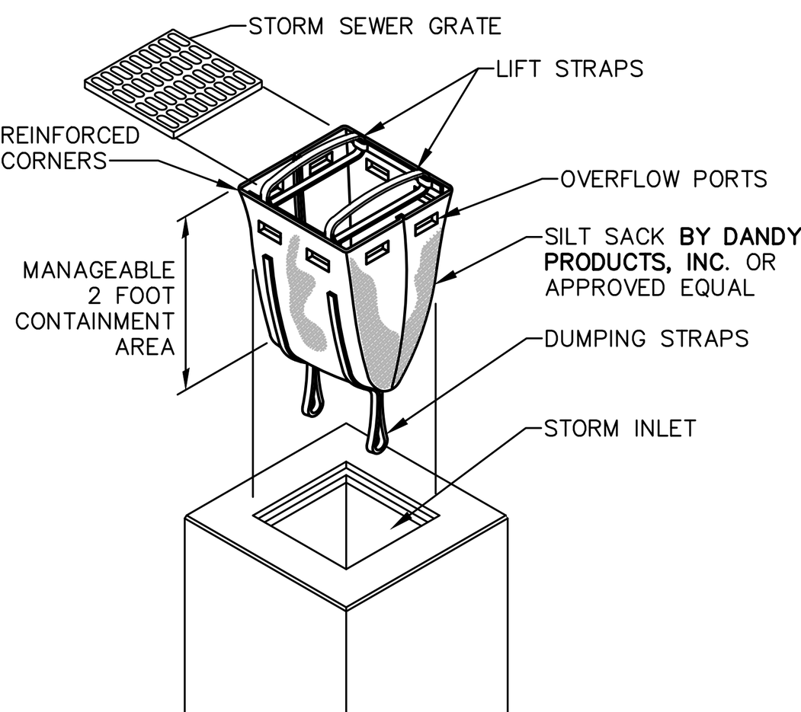
SLOPE STEEPNESS	MAXIMUM SLOPE LENGTH(FT)
2:1	25
3:1	50
4:1	75
5:1 OR FLATTER	100

© 2 **SILT FENCE INSTALLATION DETAIL**
SCALE: NOT TO SCALE

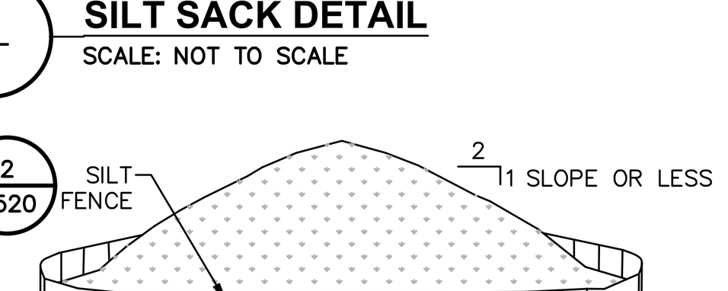


NOTES:
1. FILTER FABRIC SHALL HAVE AN EOS OF 40–85.
2. CUT FABRIC FROM CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED, OVERLAP TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x4" WOOD OR EQUIVALENT, WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART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

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

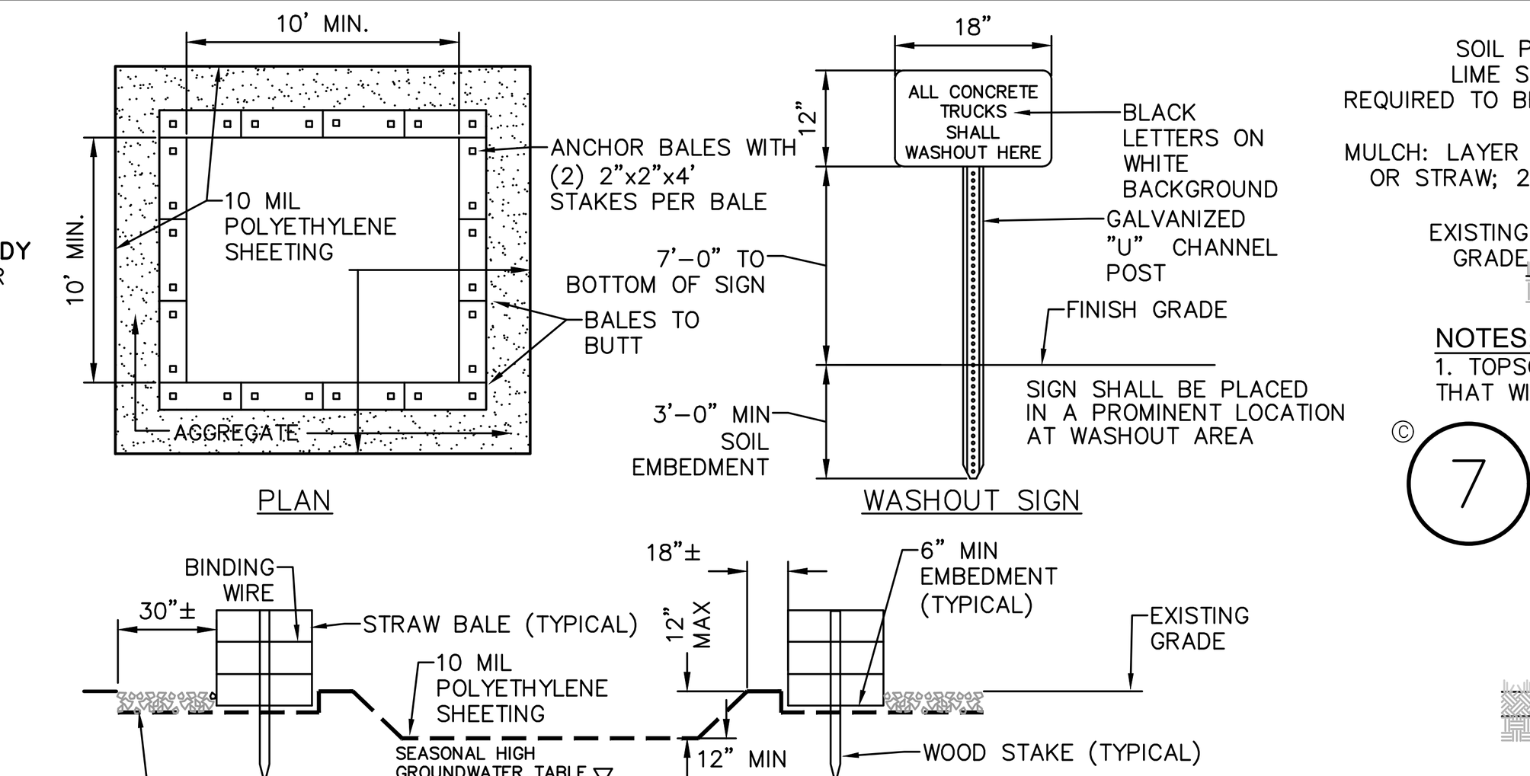


© 4 **SILT SACK DETAIL**
SCALE: NOT TO SCALE



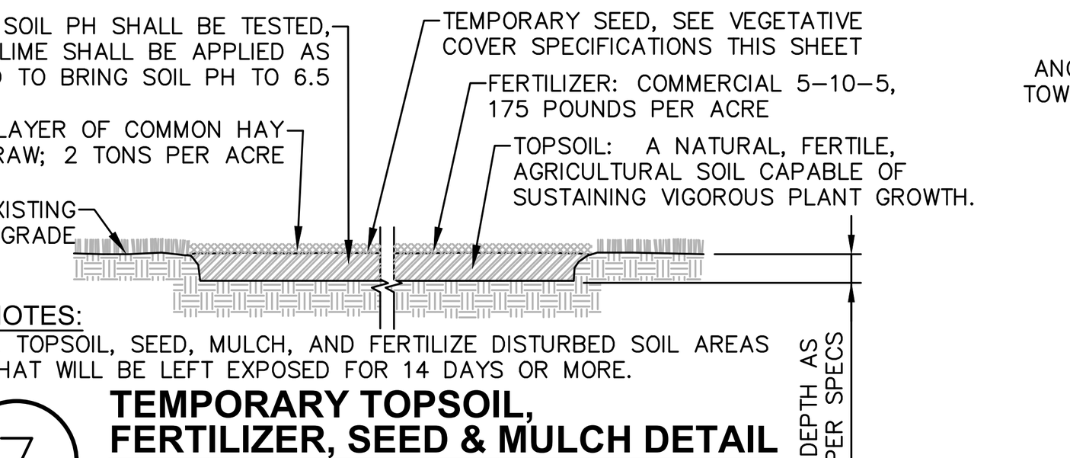
NOTES:
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1V:2H.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE SPECIFICATIONS FOR INSTALLATION OF SILT FENCE.

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



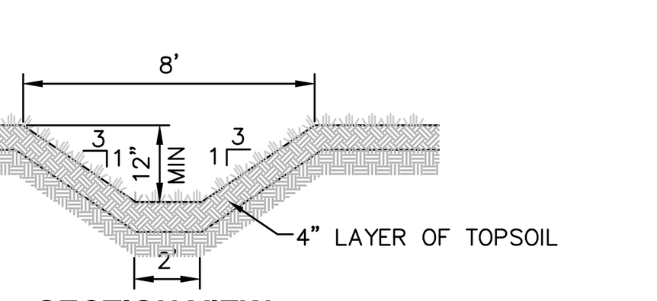
NOTES:
1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL. THIS INCLUDES REPLACEMENT OF THE 10 MIL POLYETHLENE SHEETING.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY, REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

© 6 **CONCRETE WASHOUT AREA DETAIL**
SCALE: NOT TO SCALE



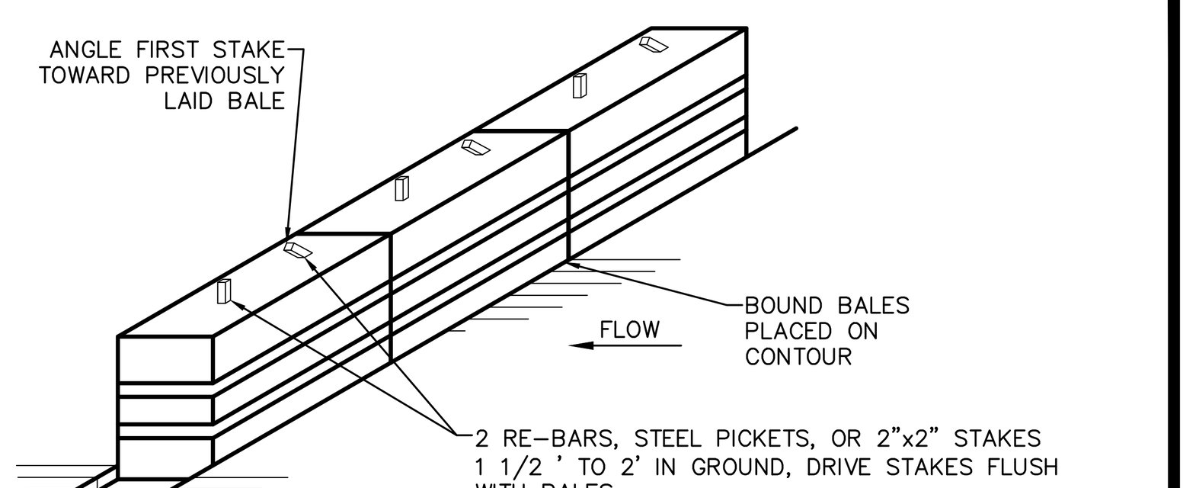
NOTES:
1. TOPSOIL, SEED, MULCH, AND FERTILIZE DISTURBED SOIL AREAS THAT WILL BE LEFT EXPOSED FOR 14 DAYS OR MORE.

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



NOTES:
1. MINIMUM DEPTH OF SWALE SHALL BE 12".
2. SWALE SHALL BE AT LEAST 6 FEET WIDE AT TOP.
3. SWALE SHALL BE SEEDED AND MULCHED WITH FAST GERMINATING RYE 15 LBS. TO 25 LBS. PER 1,000 SF.
4. SLOPE OF SWALE SHALL BE MINIMUM 2%.

© 8 **PERMANENT GRASS LINED DIVERSION SWALE DETAIL**
SCALE: NOT TO SCALE

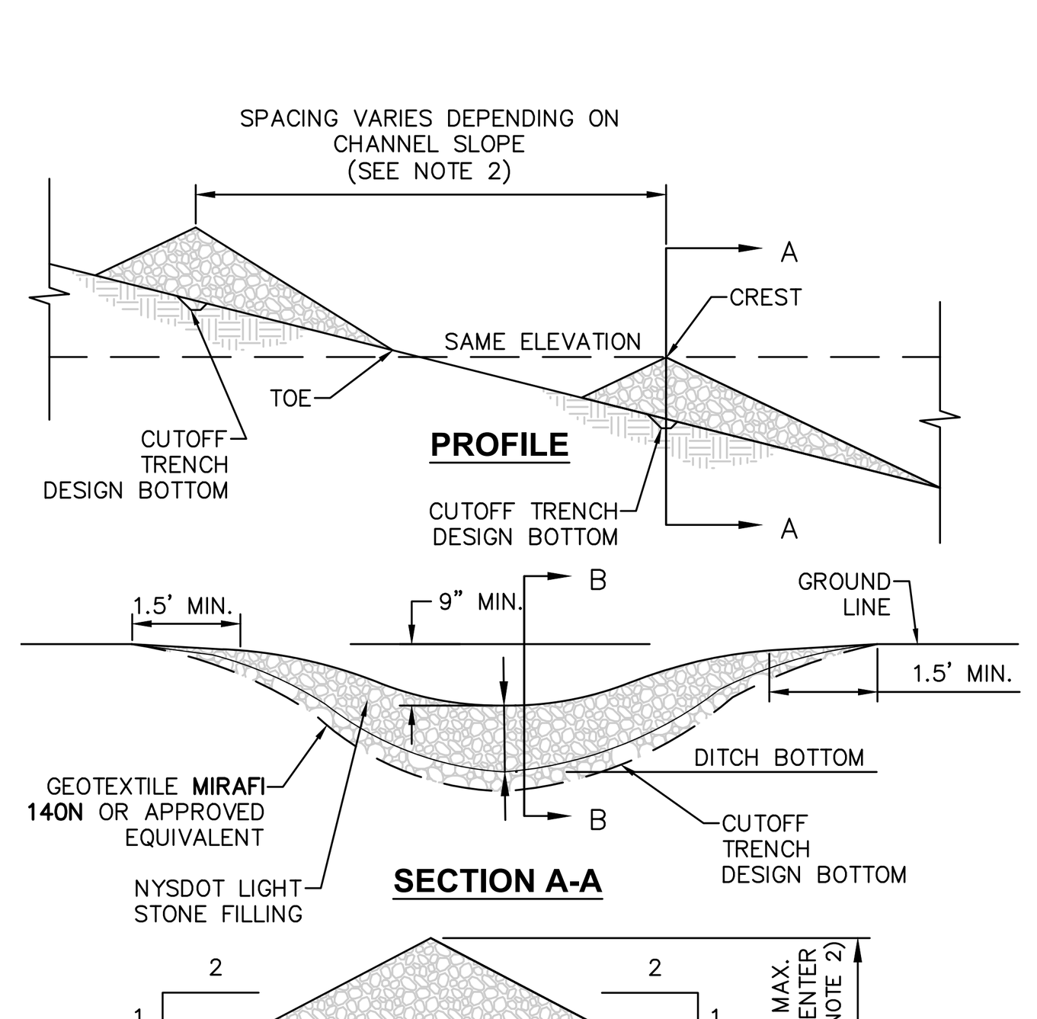


NOTES:
1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4)INCHES AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
6. HAY OR STRAW BALE DIKES SHALL BE USED WHERE EROSION COULD OCCUR IN THE FORM OF SHEET EROSION.
7. HAY OR STRAW BALE DIKES SHALL NOT BE USED WHEN A CONCENTRATION OF WATER IS FLOWING TO THE BARRIER.
8. MAXIMUM ALLOWABLE SLOPE LENGTHS CONTRIBUTING TO A HAY OR STRAW BALE DIKE ARE:

SLOPE STEEPNESS	MAXIMUM SLOPE LENGTH(FT)
2:1	25
3:1	50
4:1	75
<4:1	100

9. MAXIMUM DRAINAGE AREA FOR OVERLAND FLOW TO A HAY OR STRAW BALE DIKE SHALL NOT EXCEED 0.25 ACRES PER 100 FEET OF DIKE FOR SLOPES < 25%.

© 9 **HAY OR STRAW BALE DIKE DETAIL**
SCALE: NTS

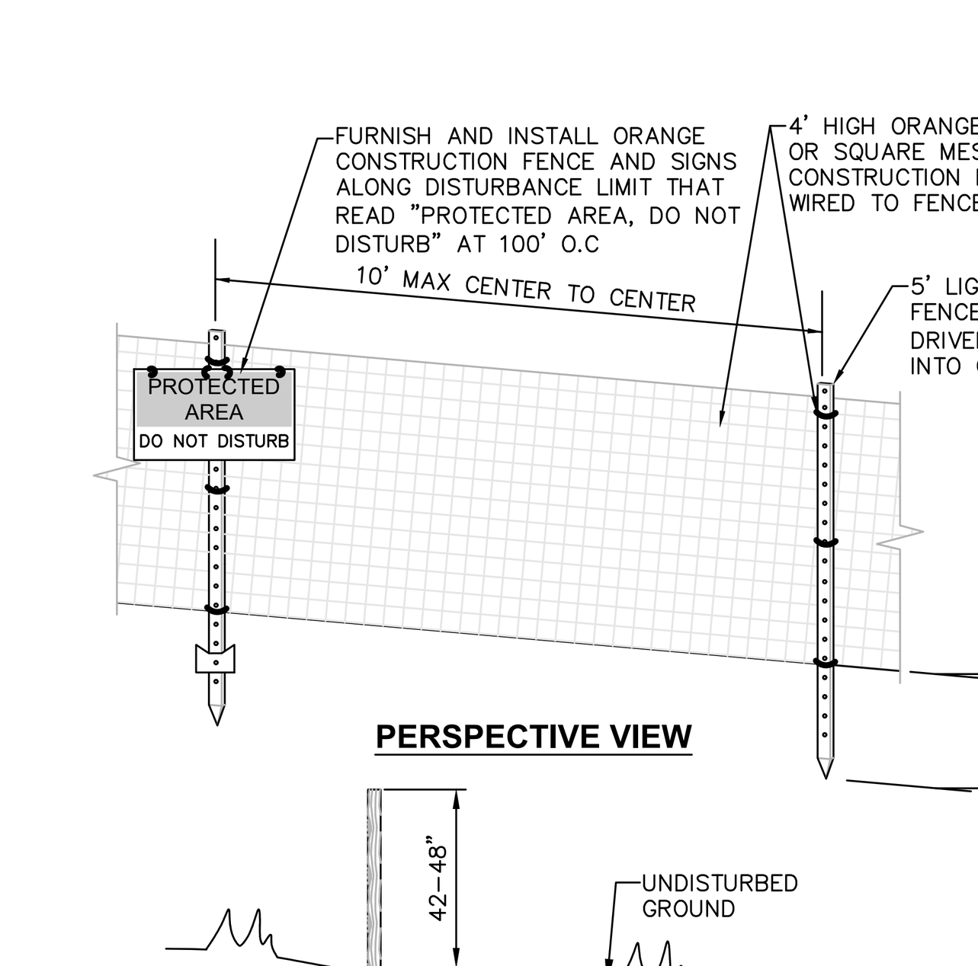


CONSTRUCTION SPECIFICATIONS:
1. STONE SHALL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN ON THE PLAN.
2. SET SPACING OF CHECK DAMS IN ACCORDANCE W/ THE FOLLOWING:
CHECK DAM SPACING INCREMENT 2'-6" DEEP DITCH/SWALE W/
1'-9" HIGH CHECK DAM: (SPACING = 100xCHECK DAM HEIGHT (FT) / CHANNEL SLOPE %)

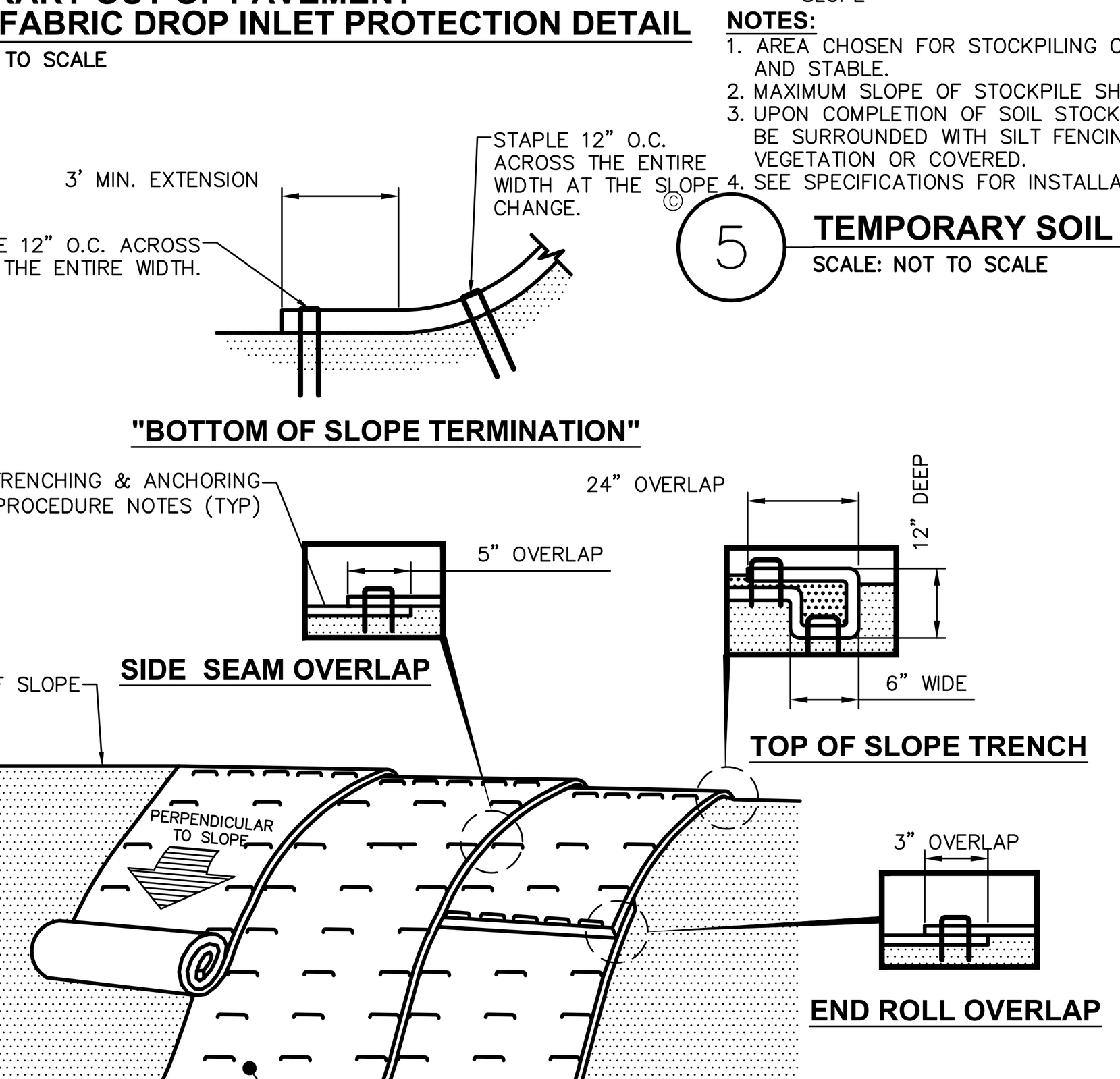
SLOPE:	SPACING:	SLOPE:	SPACING:
0.5%	305'	6%	29'
1%	175'	7%	25'
2%	87'	8%	21'
3%	58'	9%	19'
4%	44'	10%	17'
5%	35'		

CONTRACTOR TO ADJUST SPACING ACCORDINGLY BASED ON ACTUAL DEPTH & SLOPE OF DITCH.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAM ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
6. MAXIMUM DRAINAGE AREA IS 2 ACRES.

© 10 **STONE CHECK DAM DETAIL**
SCALE: NOT TO SCALE



© 11 **TEMPORARY ORANGE CONSTRUCTION FENCE DETAIL**
SCALE: NOT TO SCALE



NOTES:

1. PREPARE THE TOPSOIL (SEEDBED) FIRST BY RAKING, SHAPING, FINE GRADING, COMPACTING, SEEDING & FERTILIZING THE SLOPES.

2. USE THE TRENCHING & ANCHORING PROCEDURES DETAILED HEREIN TO SECURE ANY EXPOSED MATERIAL ENDS. SECURE ALL PRODUCT OVERLAPS. OVERLAP IN THE DIRECTION OF WATER FLOW, PERPENDICULAR TO THE SLOPE.

3. KEEP EROSION CONTROL BLANKET IN SOLID CONTACT WITH THE TOPSOIL.

4. USE THE REQUIRED NUMBER OF STAPLES/STAKES TO SECURELY FASTEN THE EROSION CONTROL BLANKET TO THE SLOPE. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLES/STAKES LENGTHS GREATER THAN 6" MAYBE NECESSARY FOR PROPER SECURING. STAPLE PATTERNS & OVERLAPS ARE DEPENDENT ON SITE CONDITIONS & MANUFACTURER'S REQUIREMENTS. CONTRACTOR SHALL CONSULT WITH MANUFACTURER FOR ACTUAL SITE SPECIFIC REQUIREMENTS.

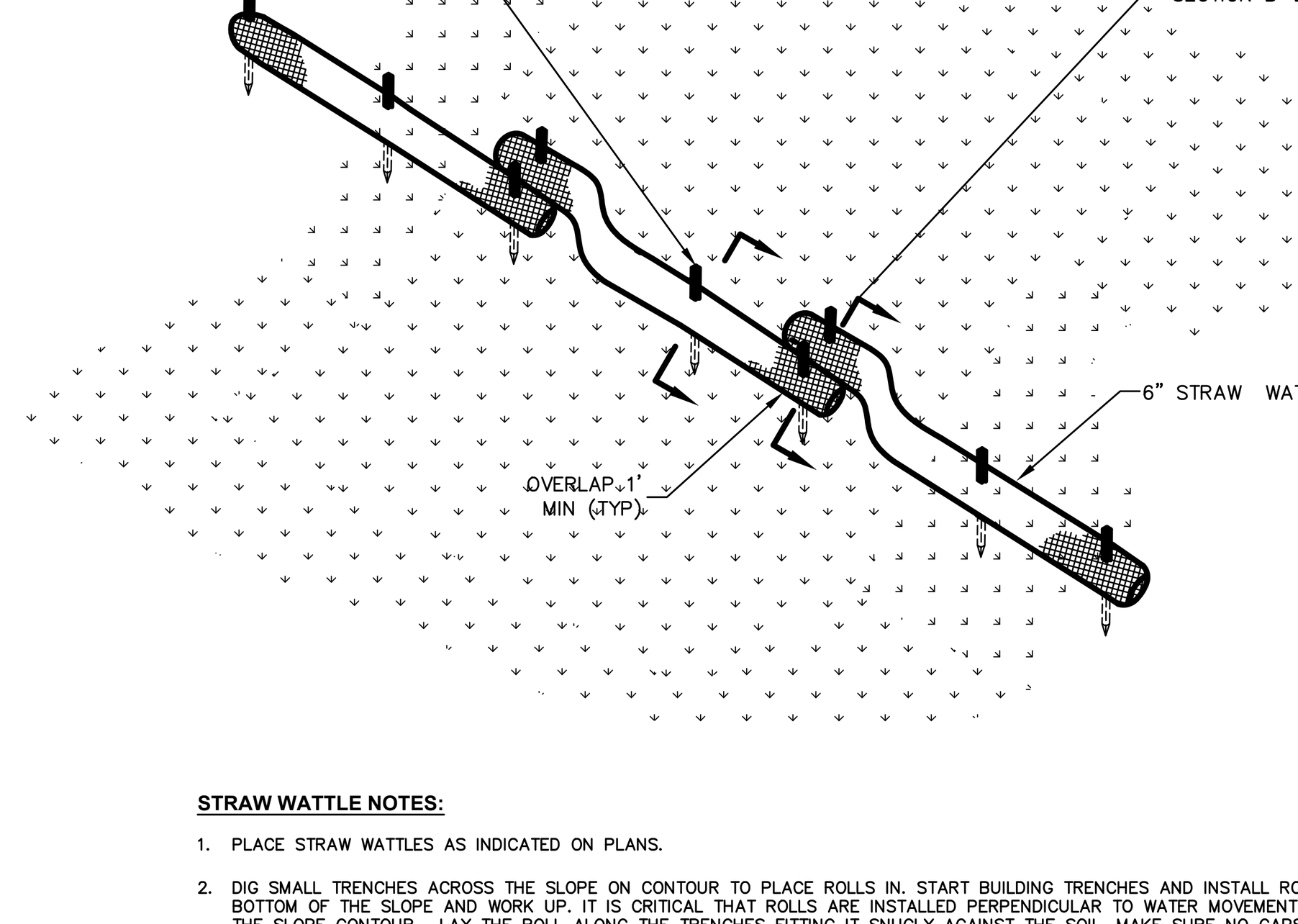
TRENCHING & ANCHORING PROCEDURE NOTES:

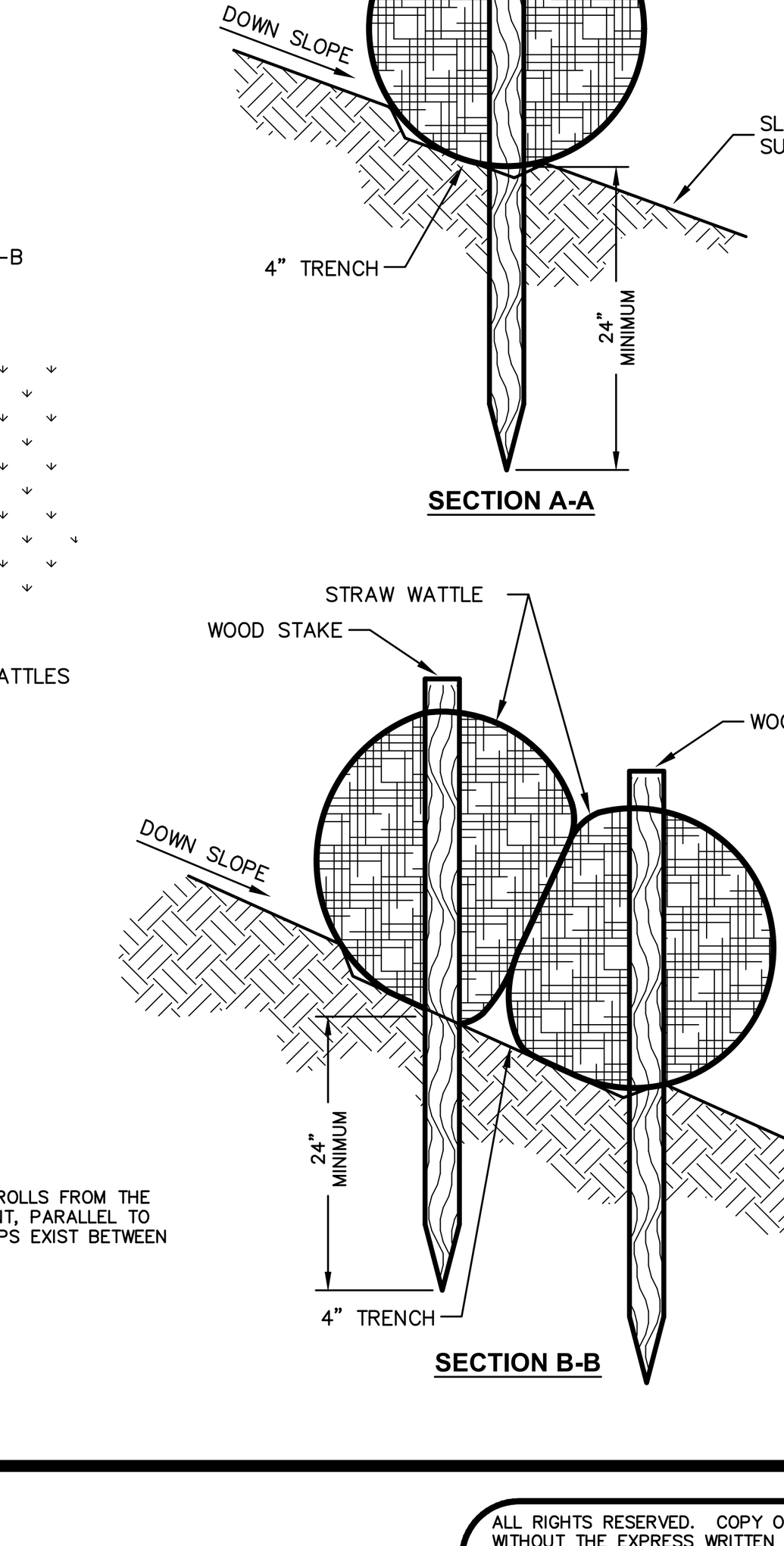
SIDE SEAM OVERLAP: THE EDGES OF PARALLEL BLANKETS SHALL BE STAPLED WITH A 5" OVERLAP.

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

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

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





STRAW WATTLE NOTES:
1. PLACE STRAW WATTLES AS INDICATED ON PLANS.
2. DIG SMALL TRENCHES ACROSS THE SLOPE ON CONTOUR TO PLACE ROLLS IN. START BUILDING TRENCHES AND INSTALL ROLLS FROM THE BOTTOM OF THE SLOPE AND WORK UP. IT IS CRITICAL THAT ROLLS ARE INSTALLED PERPENDICULAR TO WATER MOVEMENT, PARALLEL TO THE SLOPE CONTOUR. LAY THE ROLL ALONG THE TRENCHES FITTING IT SNUGLY AGAINST THE SOIL. MAKE SURE NO GAPS EXIST BETWEEN THE SOIL AND THE STRAW WATTLE.

© 13 **STRAW WATTLE DETAIL**
SCALE: NOT TO SCALE

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

THIS PLAN SET AND THE ACCOMPANYING SWPPP ENTITLED "SITE PLAN PREPARED FOR GAS LAND PETROLEUM, INC. FOR A CONVENIENCE STORE WITH A GASOLINE FILLING STATION" HAVE BEEN SUBMITTED AS A SET. THESE ENGINEERING DRAWINGS ARE CONSIDERED AN INTEGRAL PART OF THE SWPPP, THEREFORE THE PLAN SET IS NOT CONSIDERED COMPLETE WITHOUT THE SWPPP.

1. THIS PROJECT HAS NOT RECEIVED WRITTEN APPROVAL FROM THE TOWN OF NEWBURGH ALLOWING THE DISTURBANCE OF MORE THAN FIVE (5) ACRES OF LAND AT ANY ONE TIME. THEREFORE, IF THE CONTRACTOR'S CONSTRUCTION SEQUENCE REQUIRES THE DISTURBANCE OF MORE THAN FIVE ACRES AT ANY ONE TIME, WRITTEN APPROVAL MUST BE OBTAINED FROM NYSDEC PRIOR TO EXCEEDING THE 5 ACRE LIMIT.

CONSTRUCTION SEQUENCING NOTES:
1. PRIOR TO COMMENCING ANY CLEARING, GRUBBING, EARTHWORK ACTIVITIES, ETC.AT THE SITE, THE CONTRACTOR SHALL FLAG THE WORK LIMITS AND SHALL INSTALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES (I.E. SILT FENCES, TREE PROTECTION/BARRIER FENCES, STABILIZED CONSTRUCTION ENTRANCES, STORM DRAIN SEDIMENT FILTERS, DRAINAGE DITCH SEDIMENT FILTERS, ETC.) INDICATED ON THE PROJECT DRAWINGS. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THEIR TRIBUTARY AREAS.
2. THE CONTRACTOR SHALL CLEAR AND GRUB THE AREA OF THE STORMWATER MANAGEMENT FACILITIES. THIS AREA SHALL NOT EXCEED FIVE (5) ACRES IN EXTENT WITHOUT TEMPORARY STABILIZATION.
3. THE STORMWATER DETENTION BASIN SHALL BE UTILIZED AS A TEMPORARY SEDIMENT TRAP DURING CONSTRUCTION. THE CONTRACTOR SHALL INSTALL THE OUTLET CONTROL STRUCTURES AND THE EARTHEN BERM. THE BASIN SHALL BE GRADED TO THE TOP OF THE AQUATIC BENCH AS INDICATED IN THE TYPICAL STORMWATER MANAGEMENT BASIN SECTION PRESENTED IN THE PROJECT DRAWINGS.
4. PRIOR TO COMMENCING CLEARING, GRUBBING AND/OR EARTHWORK ACTIVITIES IN ANY OTHER AREA OF THE SITE, THE CONTRACTOR SHALL INSTALL INLET AND OUTLET PROTECTION MEASURES (RIPRAP OVERFLOW WEIR(S), CULVERT INLET/OUTLET PROTECTION, ETC.) AND SHALL STABILIZE THE AREAS DISTURBED DURING THE CONSTRUCTION OF THE SEDIMENT BASIN.
5. THE CONTRACTOR SHALL INSTALL TEMPORARY DIVERSION MEASURES WITH ASSOCIATED STABILIZATION MEASURES (I.E., VEGETATIVE COVER, DRAINAGE DITCH SEDIMENT FILTERS, STORM DRAIN SEDIMENT FILTERS, ETC.)TO ASSURE THAT STORMWATER RUNOFF IS CONVEYED TO THE TEMPORARY SEDIMENT BASIN.
6. TEMPORARY DIVERSION MEASURES SHALL BE LOCATED IN A MANNER THAT WILL ASSURE THAT THE AREA TRIBUTARY TO EACH DIVERSION DOES NOT EXCEED FIVE (5) ACRES. THESE TEMPORARY DIVERSION MEASURES SHALL BE INSPECTED DAILY AND REPAIRED/STABILIZED AS NECESSARY TO MINIMIZE EROSION.
7. THE CONTRACTOR SHALL COMMENCE SITE CONSTRUCTION ACTIVITIES INCLUDING CLEARING & GRADING OF THE PROPOSED AREA OF DISTURBANCE AS REQUIRED.
8. INSTALL PROTECTIVE MEASURES AT THE LOCATIONS OF ALL GRATE INLETS, CURB INLETS, AND AT THE ENDS OF ALL EXPOSED STORM SEWER PIPES.
9. CONSTRUCT ALL UTILITIES, CURB AND GUTTER, GUTTER INLETS, AREA INLETS, AND STORM SEWER MANHOLES, AS SHOWN ON THE PLANS. INLET PROTECTION MAY BE REMOVED TEMPORARILY FOR THIS CONSTRUCTION. PLACE REQUIRED RIP-RAP AT LOCATIONS SHOWN ON THE PLANS.
10. FINALIZE PAVEMENT SUB-GRADE PREPARATION.
11. REMOVE PROTECTIVE MEASURES AROUND INLETS AND MANHOLES NO MORE THAN 24 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
12. INSTALL SUB-BASE MATERIAL AS REQUIRED FOR PAVEMENT.
13. PRIOR TO FINALIZING CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITY, ALL CATCH BASINS AND DRAINAGE LINES SHALL BE CLEANED OF ALL SILT AND SEDIMENT.
14. UPON COMPLETION OF SITE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL FINALIZE CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITY. CONTRACTOR SHALL FINISH GRADE THE FORBAY(S), AQUATIC BENCHES, AND WET POOL(S) AND STABILIZE AS INDICATED IN THE PROJECT DRAWINGS.
15. THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND IMMEDIATELY ESTABLISH PERMANENT VEGETATION ON THE AREAS DISTURBED DURING THEIR REMOVAL.

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

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

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

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

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

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

CHECK DAM:
INSPECT CHECK DAMS EVERY SEVEN DAYS & AFTER EVERY RAIN EVENT. IF SIGNIFICANT EROSION HAS OCCURRED BETWEEN STRUCTURES A LINER OF STONE OR OTHER SUITABLE MATERIAL SHOULD BE INSTALLED IN THAT PORTION OF THE CHANNEL. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAM AS NEEDED TO ALLOW CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. REPLACE STONES AS NEEDED TO MAINTAIN THE DESIGN CROSS SECTION OF THE STRUCTURES. REMOVE CHECK DAMS AS PER APPROVAL OF ENGINEER.

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

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

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

SEDIMENT TRAP:
INSPECT ALL SEDIMENT TRAPS EVERY SEVEN DAYS & AFTER EVERY RAIN EVENT. REPAIRS SHALL BE MADE AS NEEDED. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO 1/2 OF THE DESIGN DEPTH OF THE TRAP.

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

DEWATERING PITS:
(IF REQUIRED) – INSPECT DAILY DURING OPERATION FOR CLOGGING OR OVERFLOW. CLEAR INLET AND DISCHARGE PIPES OF OBSTRUCTIONS. IF A FILTER MATERIAL BECOMES CLOGGED WITH SEDIMENT, PIT SHALL BE DISMANTLED AND CONSTRUCT NEW PITS AS NEEDED.

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

GENERAL EROSION AND SEDIMENT CONTROL NOTES:
1. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE IN STRICT COMPLIANCE WITH "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL", NOVEMBER 2016.
2. EXCESS SOIL TO BE STOCKPILED WITHIN THE LIMITS OF SITE DISTURBANCE IF NOT USED IMMEDIATELY FOR GRADING PURPOSES. INSTALL SILT FENCE AROUND SOIL STOCKPILES.
3. APPLY SURFACE STABILIZATION AND RESTORATION MEASURES. AREAS UNDERGOING CLEARING OR GRADING AND ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WHERE WORK IS DELAYED, SUSPENDED, OR INCOMPLETE AND WILL NOT BE REDISTURBED FOR 21 DAYS OR MORE SHALL BE STABILIZED WITH TEMPORARY VEGETATIVE COVER WITHIN 14 DAYS AFTER CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS CEASED. (SEE SPECIFICATIONS FOR TEMPORARY VEGETATIVE COVER). AREAS UNDERGOING CLEARING OR GRADING AND ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WHERE WORK IS COMPLETE AND WILL NOT BE REDISTURBED SHALL BE STABILIZED AND RESTORED WITH PERMANENT VEGETATIVE COVER AS SOON AS SITE AREAS ARE AVAILABLE AND WITHIN 14 DAYS AFTER WORK IS COMPLETE. (SEE SPECIFICATIONS FOR PERMANENT VEGETATIVE COVER). SEEDING FOR PERMANENT VEGETATIVE COVER SHALL BE WITHIN THE SEASONAL LIMITATIONS. PROVIDE STABILIZATION WITH TEMPORARY VEGETATIVE COVER WITHIN 14 DAYS AFTER WORK IS COMPLETE, FOR SEEDING OUTSIDE PERMITTED SEEDING PERIODS.
4. SEEDED AREAS TO BE MULCHED WITH STRAW OR HAY MULCH IN ACCORDANCE WITH VEGETATIVE COVER SPECIFICATIONS.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE COURSE OF CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST BY SPRINKLING EXPOSED SOIL AREAS PERIODICALLY WITH WATER AS REQUIRED. THE CONTRACTOR IS TO SUPPLY ALL EQUIPMENT AND WATER.
7. WHEN ALL DISTURBED AREAS ARE STABLE, ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED.

TOPSOIL SPECIFICATIONS:
1. EXISTING EXCESS TOPSOIL SHALL BE REMOVED AND STORED IN TOPSOIL STOCKPILES SUFFICIENTLY REMOVED FROM OTHER EXCAVATION OR DISTURBANCE TO AVOID MIXING. SILT FENCE SHALL BE INSTALLED AROUND TOPSOIL STOCKPILE AREAS.

SITE PREPARATION:
1. COMPLETE ROUGH GRADING AND FINAL GRADE, ALLOWING FOR DEPTH OF TOPSOIL TO BE ADDED.
2. SCARIFY ALL COMPACT, SLOWLY PERMEABLE, MEDIUM AND FINE TEXTURED SUBSOIL AREAS. SCARIFY AT APPROXIMATELY RIGHT ANGLES TO THE SLOPE DIRECTION IN SOIL AREAS THAT ARE STEEPER THAN 5%.
3. REMOVE REFUSE, WOODY PLANT PARTS, STONES OVER 3 INCHES IN DIAMETER, AND OTHER LITTER.

TOPSOIL MATERIALS:
1. NEW TOPSOIL SHALL BE BETTER THAN OR EQUAL TO THE QUALITY OF THE EXISTING ADJACENT TOPSOIL. IT SHALL MEET THE FOLLOWING CRITERIA:
   A. ORIGINAL LOAM TOPSOIL, WELL DRAINED HOMOGENEOUS TEXTURE AND OF UNIFORM GRADE, WITHOUT THE ADMIXTURE OF SUBSOIL MATERIAL AND FREE OF DENSE MATERIAL, HARDPAN, CLAY, STONES, SOD OR OTHER OBJECTIONABLE MATERIAL.
   B. CONTAINING NOT LESS THAN 5% NOR MORE THAN 20% ORGANIC MATTER IN THAT PORTION OF A SAMPLING PASSING A 1/4" SIEVE WHEN DETERMINED BY THE WET COMBUSTION METHOD ON A SAMPLE DRIED AT 105°C.
   C. CONTAINING A PH VALUE WITHIN THE RANGE OF 6.5 TO 7.5 ON THAT PORTION OF THE SAMPLE WHICH PASSES A 1/4" SIEVE.
   D. CONTAINING THE FOLLOWING WASHED GRADATIONS:

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

APPLICATION AND GRADING:
1. TOPSOIL SHALL BE DISTRIBUTED TO A UNIFORM DEPTH OF 4" OVER THE AREA. IT SHALL NOT BE PLACED WHEN IT IS PARTLY FROZEN, MUDDY, OR ON FROZEN SLOPES OR OVER ICE, SNOW, OR STANDING WATER.
2. TOPSOIL PLACED AND GRADED ON SLOPES STEEPER THAN 5% SHALL BE PROMPTLY FERTILIZED, SEEDED, MULCHED AND STABILIZED BY "TRACKING" WITH SUITABLE EQUIPMENT.

VEGETATIVE COVER SPECIFICATIONS:
TEMPORARY VEGETATIVE COVER (DURING CONSTRUCTION):
1. SITE PREPARATION
   (SAME AS PERMANENT VEGETATIVE COVER)
2. SEED MIX: (APPLY AT RATE OF 3 TO 4 LBS PER 1000 SF)

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

3. SEEDING
   (SAME AS PERMANENT VEGETATIVE COVER)

PERMANENT VEGETATIVE COVER (AFTER CONSTRUCTION):
1. SITE PREPARATION
   A. BRING AREA TO BE SEEDED TO REQUIRED GRADE. A MINIMUM OF 4" OF TOPSOIL IS REQUIRED.
   B. PREPARE SEEDBED BY LOOSENING SOIL TO A DEPTH OF 4 INCHES.
   C. REMOVE ALL STONES OVER 1 INCH IN DIAMETER, STICKS AND FOREIGN MATTER FROM THE SURFACE.
   D. LIME TO PH OF 6.5.
   E. FERTILIZER: USE 5–10–5 (NPK) OR EQUIVALENT. APPLY AT RATE OF 4 LBS/1000 SF.
   F. INCORPORATE LIME AND FERTILIZER IN THE TOP 4 INCHES OF TOPSOIL.
   G. SMOOTH AND FIRM THE SEEDBED.
2. SEED MIXTURE FOR USE ON LAWN AREAS:
   PROVIDE FRESH, CLEAN, NEW-CROP SEED MIXED IN THE PROPORTIONS SPECIFIED FOR SPECIES AND VARIETY, AND CONFORMING TO FEDERAL AND STATE STANDARDS.

   LAWN SEED MIX: (APPLY AT RATE OF 5 TO 6 LBS PER 1000 SF)

   SUN AND PARTIAL SHADE:

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

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

   SHADE:

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

   **SHADE TOLERANT VARIETY

3. SEEDING
   A. APPLY SEED UNIFORMLY BY CYCLONE SEEDER CULTI-PACKER OR HYDRO-SEEDER AT RATE INDICATED.
   B. ALL SEEDED AREAS SHALL BE PROTECTED FROM EROSION BY ONE OF THE FOLLOWING METHODS:
      i. A UNIFORM BLANKET OF STRAW APPLIED AT A RATE OF 2 TONS /ACRE MIN., TO BE APPLIED ONCE SEEDING IS COMPLETE.
      ii. WOOD FIBER CELLULOSE APPLIED WITH SEED MIX BY HYDROSEEDER AT RATE OF 2,000 LBS/ACRE.
   C. ALL SEEDED SLOPES 3:1 OR GREATER SHALL BE PROTECTED FROM EROSION WITH JUTE MESH OR APPROVED EQUAL.
   D. IRRIGATE TO FULLY SATURATE SOIL LAYER, BUT NOT TO DISLODGE PLANTING SOIL.
   E. UNLESS OTHERWISE DIRECTED IN WRITING, SEED FROM MARCH 15TH TO JUNE 15TH, AND FROM AUGUST 15TH TO OCTOBER 15TH.

COMPACTION REQUIREMENTS

LOCATION	COMPACTION	TESTING FREQUENCY
PIPE TRENCH BACKFILL (IN PAVED AREAS)	95% ASTM D1557	1 SERIES OF TESTS FOR EACH 150 FT OR LESS OF TRENCH LENGTH. SERIES INCLUDE 3 COMPACTION TESTS SPREAD EVENLY ALONG TRENCH PROFILE.
PIPE TRENCH BACKFILL (IN UNPAVED AREAS)	90% ASTM D1557	1 SERIES OF TESTS FOR EACH 150 LF OR LESS OF TRENCH LENGTH. SERIES INCLUDE 3 COMPACTION TESTS SPREAD EVENLY ALONG TRENCH PROFILE.
PIPE BEDDING AND PIPE ZONE BACKFILL	95% ASTM D1557	1 TEST FOR EACH 150 FT OR LESS OF TRENCH LENGTH.
PAVEMENT SUBBASE AND LAST LIFT OF SELECT GRANULAR FILL (FILL BETWEEN SHEET PILES)	95% ASTM D1557	1 TEST FOR EVERY 2,000 SQ FT, OF LIFT AREA BUT NO FEWER THAN TWO TESTS PER LIFT

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

0 1 2 3
ORIGINAL SCALE IN INCHES

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rev.	date	description

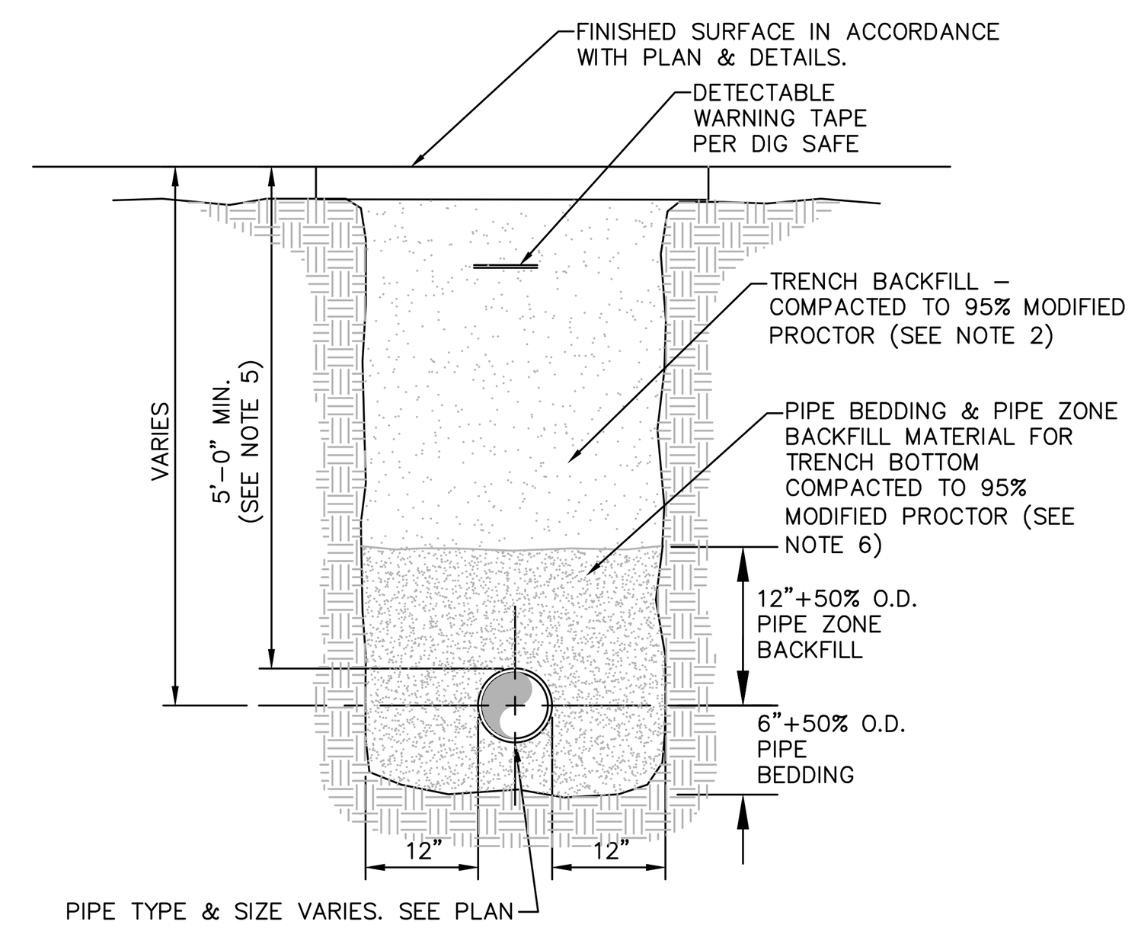
GAS LAND 5200 ROUTE 9W

EROSION & SEDIMENT CONTROL DETAILS AND NOTES

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SMD	CPL
date 01/20/22	scale AS SHOWN
project no. 81912.00	
sheet no. C520	

Drawing Name: Z:\Projects\81900-81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C520-C521_81912-00_EROSD.dwg
Xref's Attached: XTB_30X42_81912-00
Date Printed: Jan 24, 2022, 8:33am



NOTES:

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

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

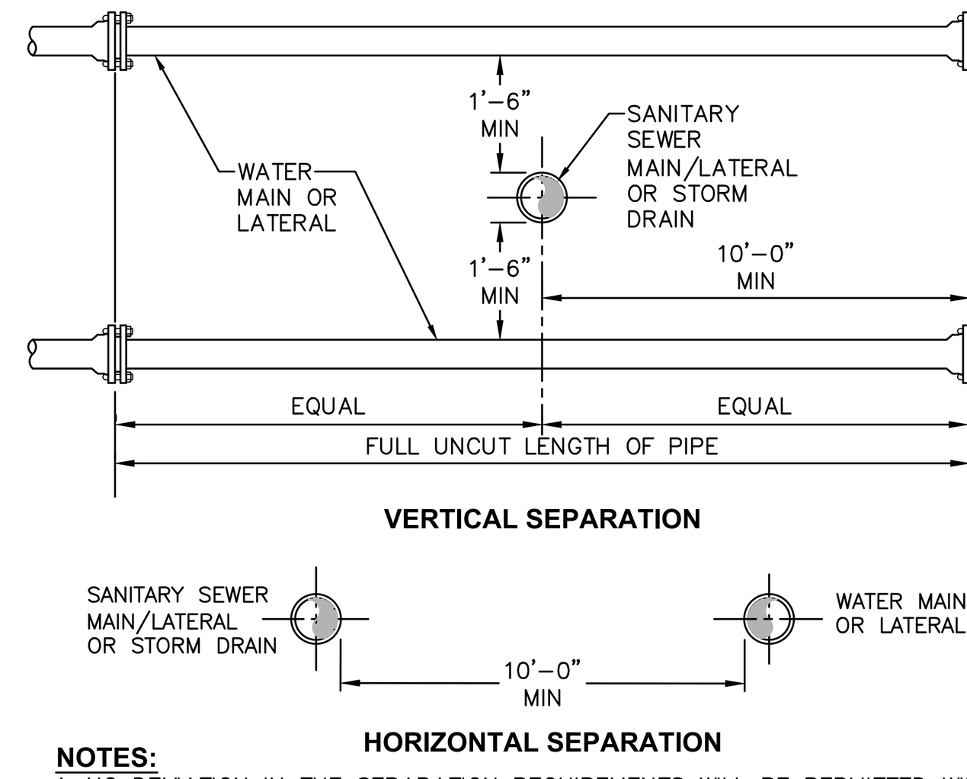
2. TRENCH BACKFILL SHALL BE A NATURAL RUN–OF–BANK (R.O.B.) OR PROCESSED GRAVEL, OR EXCAVATED MATERIAL FREE OF SOFT, NONDURABLE PARTICLES, ORGANIC MATERIALS AND ELONGATED PARTICLES, AND SHALL BE WELL GRADED FROM FINE TO COARSE PARTICLES. TRENCH BACKFILL GRADATIONS SHALL BE APPROVED BY THE ENGINEER AND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

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

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

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

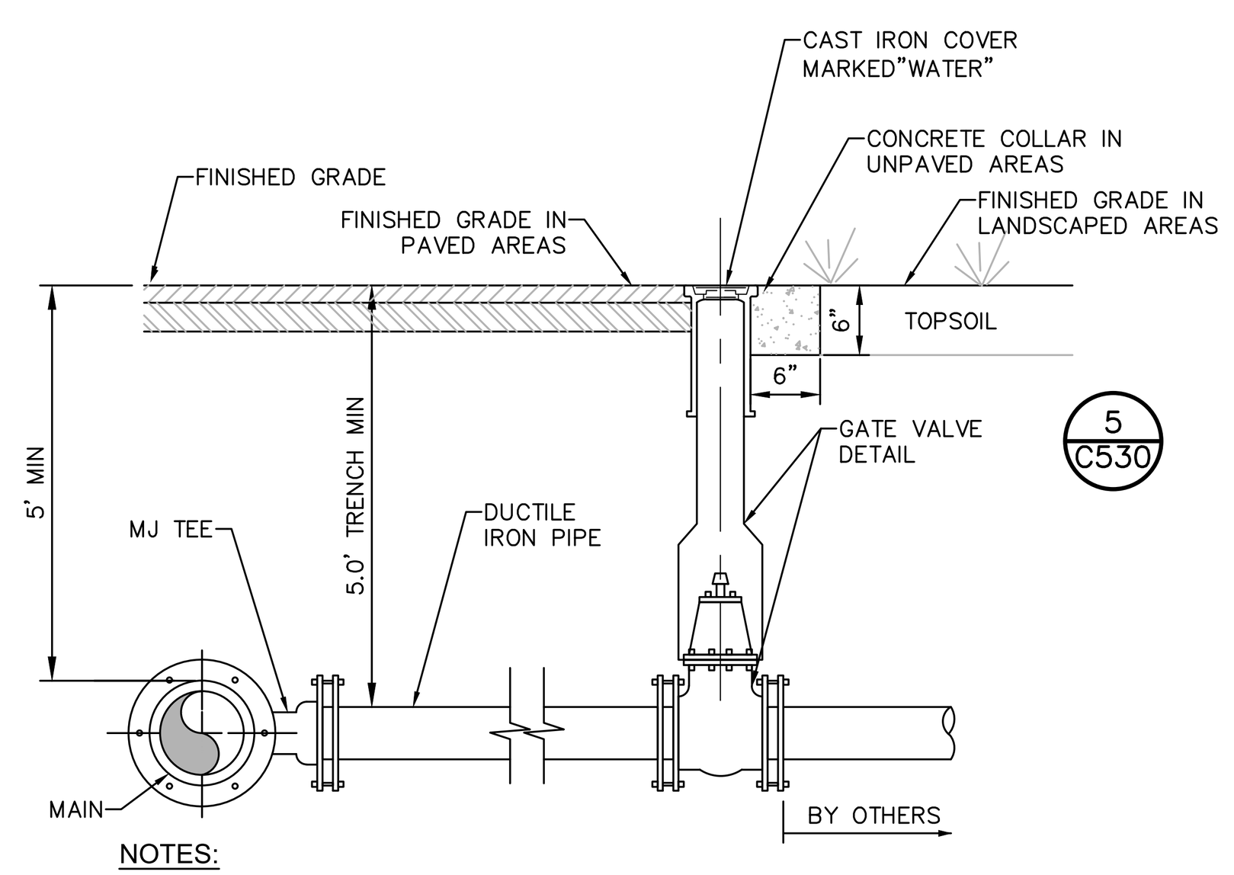
© 1 **PIPE TRENCH DETAIL (TYPICAL)**
SCALE: NOT TO SCALE



NOTES:

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

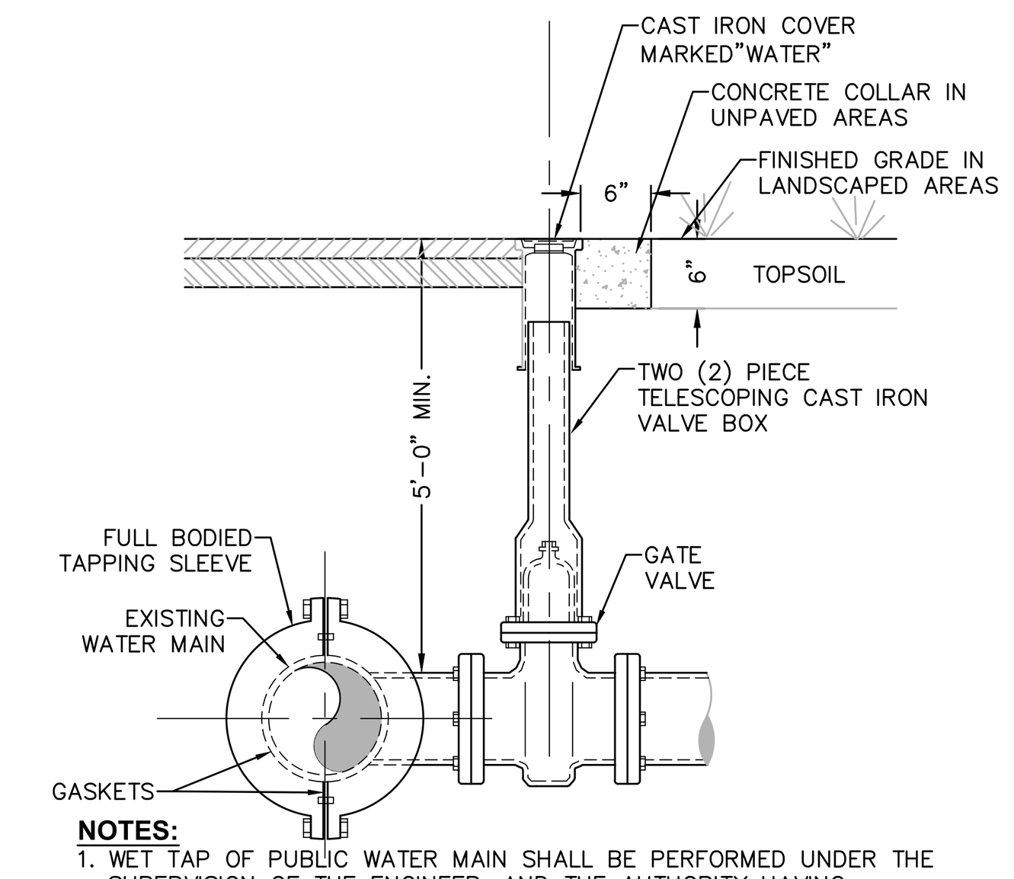
© 2 **SANITARY/STORM SEWER AND WATERMAIN SEPARATION DETAIL**
SCALE: NOT TO SCALE



NOTES:

1. GATE VALVE & VALVE BOX SHALL BE IN ACCORDANCE WITH MUNICIPAL STANDARDS & AS MANUFACTURED BY **(MUELLER, CLOW OR WATEROUS)** OR APPROVED EQUIVALENT.

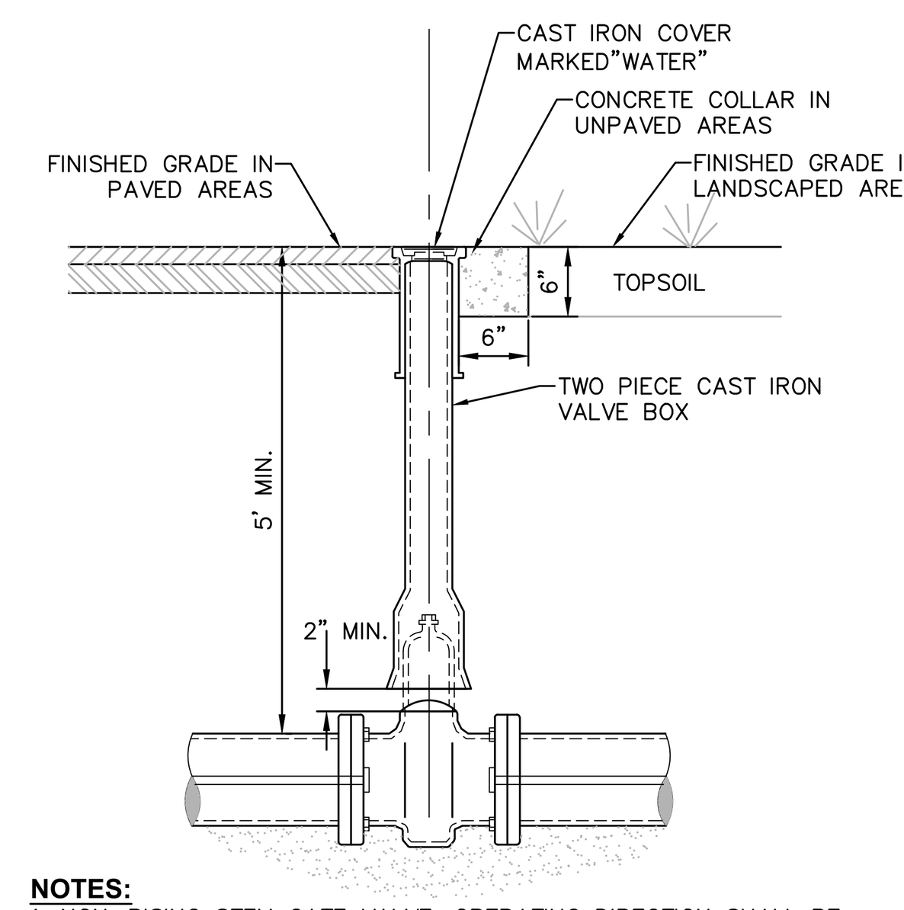
© 3 **DUCTILE IRON SERVICE PIPE**
SCALE: NOT TO SCALE



NOTES:

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

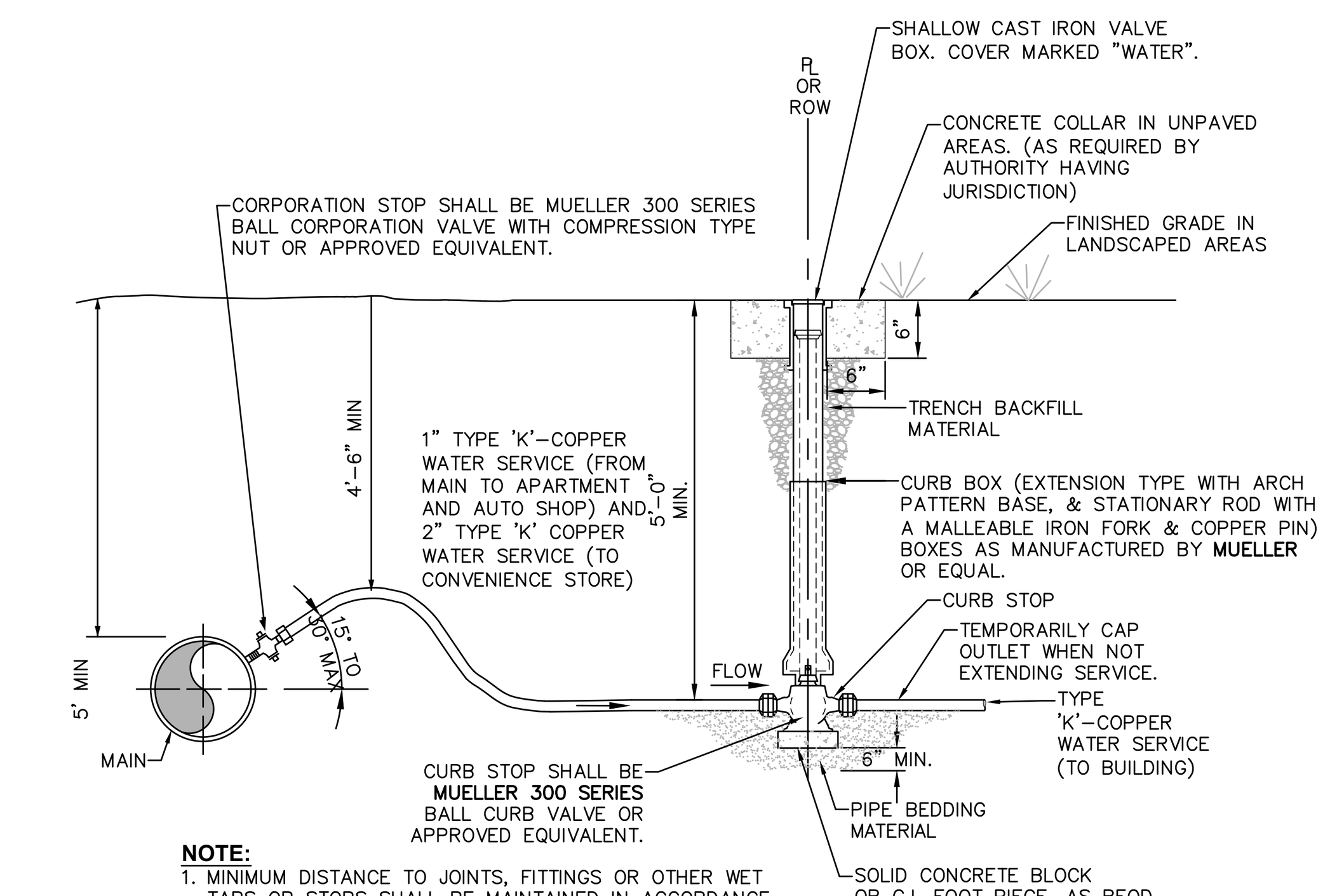
© 4 **TAPPING SLEEVE AND VALVE DETAIL**
SCALE: NOT TO SCALE



NOTES:

1. NON–RISING STEM GATE VALVE, OPERATING DIRECTION SHALL BE **COUNTERCLOCKWISE** TO OPEN.
2. MINIMUM DISTANCE TO JOINTS, FITTINGS, OR OTHER WET TAPS OR STOPS SHALL BE 3 FEET.
3. IF VALVE IS TO BE RODDED, PROVIDE VALVE WITH RODDING FLANGES OR EYEBOLTS. TWO (2) 3/4"ø GALVANIZED STEEL RODS WITH MALLEABLE IRON NUTS AT 180° SPACING SHALL BE USED FOR RODDING VALVES. FOR 12" DIA. PIPE OR LESS. FOR LARGER PIPE SIZES, SEE TABLE FOR NUMBER OF TIE RODS REQUIRED–"JOINT RESTRAINT OPTION DETAILS.)
4. GATE VALVE & VALVE BOX SHALL BE IN ACCORDANCE WITH MUNICIPAL STANDARDS & AS MANUFACTURED BY **(MUELLER, CLOW OR WATEROUS)** OR APPROVED EQUIVALENT.

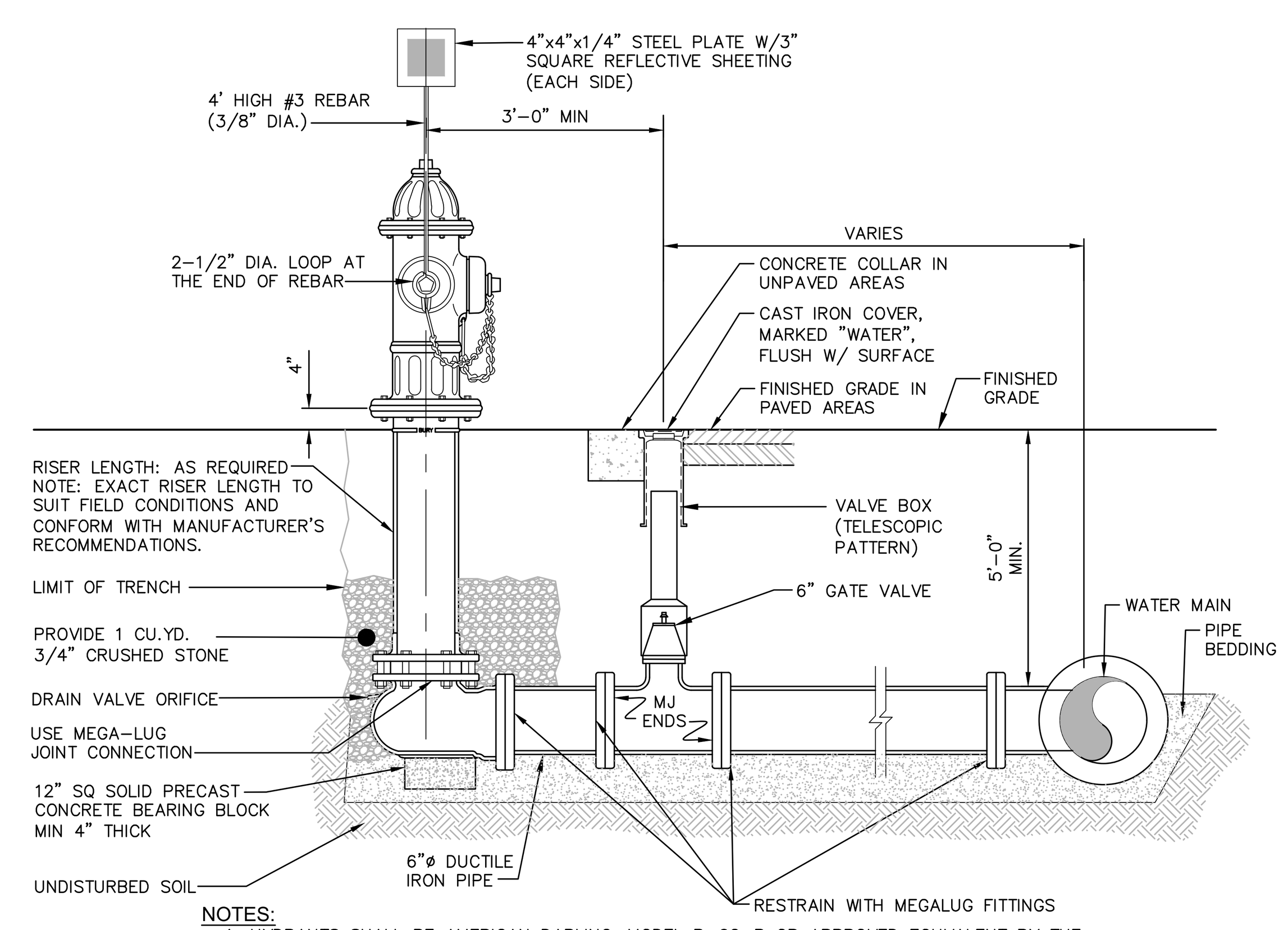
© 5 **TYPICAL GATE VALVE DETAIL**
SCALE: NOT TO SCALE



NOTE:

1. MINIMUM DISTANCE TO JOINTS, FITTINGS OR OTHER WET TAPS OR STOPS SHALL BE MAINTAINED IN ACCORDANCE WITH REGULATORY AGENCY.

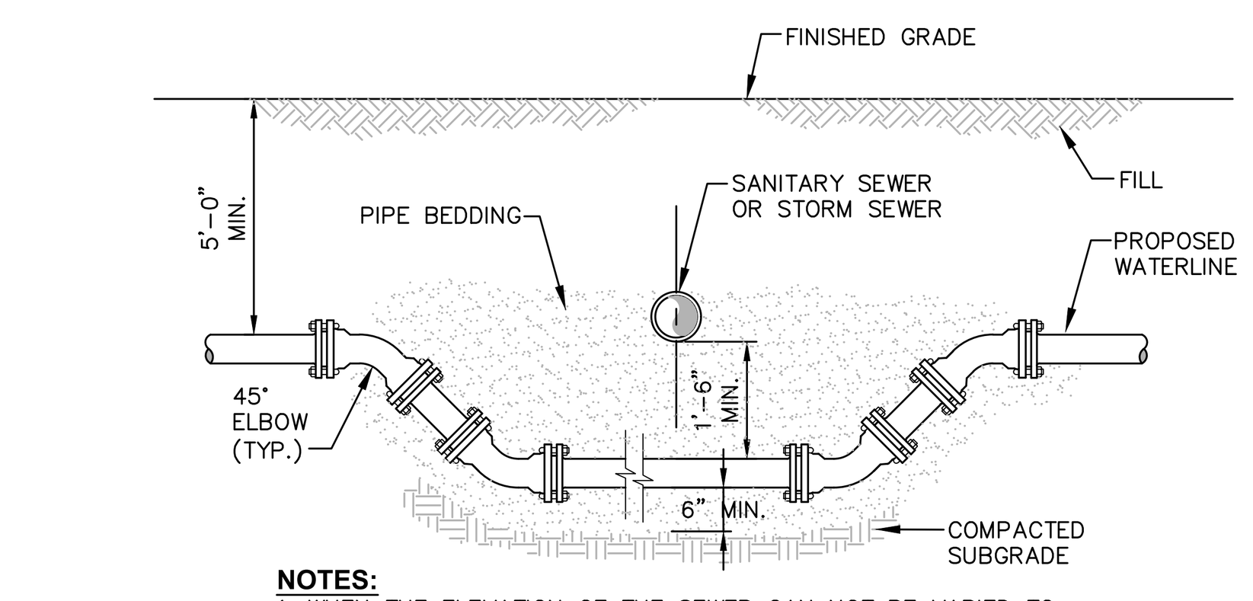
© 6 **COPPER WATER SERVICE**
SCALE: NOT TO SCALE



NOTES:

1. HYDRANTS SHALL BE AMERICAN DARLING, MODEL B–62–B OR APPROVED EQUVALENT BY THE AUTHORITY HAVING JURISDICTION. HYDRANTS SHALL MEET REQUIREMENTS OF AWWA STANDARD C–502.
2. BOTTOM VALVE DIAMETER SHALL BE 5–1/4 INCHES.
3. WEEP HOLES SHALL BE PLUGGED IF GROUNDWATER OR MOTTLING IS OBSERVED WITHIN SEVEN FEET (7') OF FINISHED GRADE.
4. EACH NEWLY INSTALLED FIRE HYDRANT WITHIN THE PUBLIC RIGHT–OF–WAY SHOULD BE FLOW TESTED BY THE FIRE DEPARTMENT TO DETERMINE ITS CAPACITY. EACH FIRE HYDRANT SHOULD BE PAINTED WITH APPROPRIATE MARKINGS OR PROVIDED WITH A REFLECTIVE HYDRANT COLLAR TO IDENTIFY ITS FLOW CAPACITY PER THE FIRE DEPARTMENT REQUIREMENTS.

© 7 **HYDRANT ASSEMBLY DETAIL**
SCALE: NOT TO SCALE



NOTES:

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

© 8 **WATERLINE OFFSET DETAIL**
SCALE: NOT TO SCALE

SCHEDULE OF JOINT RESTRAINT BARE DIP (NOT POLYWRAPPED)
(LENGTH OF PIPE EACH SIDE OF FITTING TO BE RESTRAINED IN FEET "L")

PIPE SIZE (INCHES)	FITTING TYPE							REDUCER						
	90°	45°	22½°	11¼°	TEE	VALVE	DEAD END	6"	8"	10"	12"	16"	18"	24"
6"	43	18	8	4	29	31	31							
8"	56	23	11	5	38	41	41	17						
10"	68	28	14	7	48	50	50	31	17					
12"	81	34	16	8	57	59	59	43	31	17				
16"	106	44	21	10	76	78	78	66	57	46	33			
18"	119	49	24	12	85	88	88		69	59	48	18		
24"	156	65	31	15	116	116	116				86	63	50	
30"	192	80	38	19	142	144	144						91	50

NOTES:

1. THE LENGTH OF PIPE REQUIRING RESTRAINT IS BASED UPON THE FOLLOWING ASSUMPTIONS:
   A. BEDDING TYPE 2 – FLAT BOTTOM TRENCH, BACKFILL LIGHTLY CONSOLIDATED TO CENTER LINE OF PIPE.
   B. SOIL TYPE CLAY 1 – CLAY OF MEDIUM TO LOW PLASTICITY, LL<50, <25% COURSE PARTICLES [CL & CL–ML] :
      CL – INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY GRAVELY CLAYS, SANDY CLAYS, SILTY CLAYS. LEAN CLAYS
      ML – INORGANIC SILTS, VERY FINE SAND, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS.
   C. PIPE IS BARE DUCTILE IRON PIPE (NOT POLYWRAPPED)
   D. DEPTH TO TOP OF PIPE 5'–0" MINIMUM
   E. MAXIMUM OPERATING PRESSURE OF 150 PSI
   F. FACTOR OF SAFETY OF 1.5
2. FOR END PLUGS, RESTRAIN PIPE LENGTH GIVEN FOR DEAD END FITTING.
3. THE LENGTH OF NEW PIPE TO BE RESTRAINED IS THE LENGTH FOR EACH SIDE OF THE FITTING.
4. THE ABOVE INFORMATION WAS PROVIDED USING THE THRUST RESTRAINT PROGRAM ISSUED BY THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) AND IS BASED ON THE ASSUMPTIONS LISTED IN NOTE 1. RESTRAINED LENGTH REQUIREMENTS FOR FIELD CONDITIONS AND PIPE SIZES DIFFERING FROM THOSE LISTED ABOVE SHOULD BE EVALUATED SEPARATELY.
5. RESTRAINED JOINT PIPE AND FITTINGS SHALL BE USED ONLY AS ALLOWED BY THE PROJECT PLANS AND/OR SPECIFICATION.

© 9 **JOINT RESTRAINT SCHEDULE AND NOTES**
SCALE: NOT TO SCALE

GENERAL CONSTRUCTION NOTES:

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

WATER LINE NOTES:

1. THE WATER LINE MAY BE FLEXED WITHIN PIPE SPECIFICATIONS OR LAID DEEPER IN AREAS WHERE A CROSSING WITH A SANITARY LINE OCCURS, TO ACHIEVE THE REQUIRED 1.5' VERTICAL SEPARATION DISTANCE. IF THIS DISTANCE CANNOT BE REASONABLY ACHIEVED, THE CONTRACTOR SHALL USE PRESSURE RATED SANITARY SEWER PIPE OF EQUAL OR GREATER RATING THAT THE PRESSURE CLASS FOR THE WATER LINE.
2. MINIMUM VERTICAL SEPARATION BETWEEN WATER LINES AND SEWER PIPE SHALL BE 18 INCHES MEASURED FROM THE OUTSIDE OF THE PIPES AT THE POINT OF CROSSING. IN ADDITION, WHEN THE WATER LINE PASSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT (COMPACTED SELECT FILL) SHALL BE PROVIDED FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING OF THE SEWER PIPE ON THE WATER LINE. MINIMUM HORIZONTAL SEPARATION BETWEEN PARALLEL WATER LINES AND SEWER PIPES (INCLUDING MANHOLES AND VAULTS) SHALL BE 10 FEET MEASURED FROM THE OUTSIDE OF THE PIPES, MANHOLES OR VAULTS.
3. ALL WATER LINES SHALL HAVE A MINIMUM OF (5) FIVE FEET OF COVER FROM THE TOP OF THE LINE TO FINISHED GRADE. THE CONTRACTOR SHALL CHECK ALL FINISHED GRADE STAKES BEFORE TRENCHING TO ENSURE THAT ALL INSTALLED WATER LINES WILL HAVE THE REQUIRED COVER.
4. THE CONTRACTOR SHALL COORDINATE THE TESTING WITH THE WATER DEPARTMENT SO AS TO MAINTAIN THE AMOUNT OF SERVICE INTERRUPTION TO EXISTING USERS TO THE LEAST EXTENT PRACTICABLE. WATER LINE INSTALLATION AND TESTING SHALL BE PERFORMED UNDER THE SUPERVISION OF THE PROJECT ENGINEER OR HIS DESIGNEE AS NECESSARY TO MEET CONDITIONS IN NOTE 5 ABOVE.
5. ALL NEW WATER LINE INSTALLATIONS SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH AWWA STANDARD C 600(LATEST REVISION) AT A PRESSURE OF 150 PSI, OR 1.5 TIMES (AS REFERENCED ABOVE) THE WORKING PRESSURE OF THE SYSTEM AS A MINIMUM. ALLOWABLE LEAKAGE OF THIS TEST SHALL BE AS DEFINED IN SECTION 4.2 OF SAID AWWA SPECIFICATION.
6. APPROVED AND TESTED WATER LINE SHALL BE DISINFECTED PER AWWA SECTION C 651 (AS REFERENCED ABOVE), AS DIRECTED BY ENGINEER.
7. THE WATER LINE SHALL BE DISINFECTED EQUAL TO AWWA STANDARD FOR DISINFECTING WATER MAINS DESIGNATION C651 (LATEST REVISION). FOLLOWING DISINFECTION, THE WATER MAIN SHALL BE FLUSHED UNTIL THE CHLORINE CONCENTRATION IN THE WATER LEAVING THE MAIN IS NO HIGHER THAN THAT GENERALLY PREVAILING IN THE SYSTEM. THE PROJECT ENGINEER OR HIS DESIGNEE SHALL ALSO WITNESS DISINFECTION AND FLUSHING.
8. FIRE HYDRANTS WEEP HOLES (DRAINS) SHALL BE PLUGGED WHEN GROUND WATER IS ENCOUNTERED WITHIN SEVEN FEET OF THE FINISHED GRADE. WHEN DRAINS ARE PLUGGED, THE BARRELS MUST BE PUMPED DRY AFTER USE DURING FREEZING WEATHER. SUCH HYDRANTS SHALL BE IDENTIFIED BY MARKINGS APPROVED BY THE TOWN WATER DEPARTMENT.
9. PROPOSED WATER METERS LOCATED WITHIN THE METER PIT OR BUILDING SHALL BE A COMPATIBLE REMOTE STYLE TYPE, AND SHALL BE APPROVED BY THE TOWN WATER DEPARTMENT PRIOR TO INSTALLATION.
10. THE WATER LINE SHALL BE INSTALLED AT A CONTINUOUS GRADE WITH NO ABRUPT HIGH POINTS OR LOW POINTS.
11. FINAL WATER DISTRIBUTION SYSTEM IS SUBJECT TO REVIEW, REVISION AND APPROVAL BY THE TOWN WATER DEPARTMENT.
12. ALL WATER LINES AND RELATED APPURTENANCES SHALL BE CONSTRUCTED TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE TOWN.
13. THE WATER LINE SHALL NOT BE PLACED INTO SERVICE UNTIL SO AUTHORIZED BY THE TOWN.
14. ALL WATER SERVICE CONSTRUCTION SHALL BE SUBJECT TO INSPECTION BY THE TOWNWATER DEPARTMENT PRIOR TO BACKFILLING.
15. THE SITE UTILITY CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BURIED PIPING TO THE LOCATION OF THE PROPOSED BUILDING CONNECTION POINT (I.E. INSIDE THE BUILDING). THIS INCLUDES THE TESTING AND CERTIFICATION OF ALL WATER SERVICE WORK FROM THE TOWNWATER CONNECTION POINT TO THE PROPOSED BUILDINGS INTERIOR CONNECTION POINT.
16. ALL WATER SERVICE PIPING INSTALLATION, BACKFILL AND TESTING SHALL BE REVIEWED, AND APPROVED BY THE TOWN WATER MAINTENANCE SUPERVISOR OR HIS DESIGNEE.

WATER DISINFECTION NOTES:

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

WATER NOTES:

1. SHEETING AND EXCAVATION BRACING FOR THE WATERMAIN INSTALLATION SHALL BE PROVIDED IN ACCORDANCE WITH OSHA REQUIREMENTS TO SUIT EXISTING SOIL CONDITIONS. SHEETING, IF REQUIRED, SHALL BE TIGHT WOOD SHEETING AND SHALL BE LEFT IN PLACE, AND AFTER BACKFILLING SHALL BE CUT AT GROUND LEVEL OR AS ORDERED BY THE OWNER'S REPRESENTATIVE.
2. MATERIALS USED IN CONSTRUCTION THAT WILL CONTACT POTABLE WATER SHALL BE ANSI/NSF 61 CERTIFIED OR EQUIVALENT.

TESTING WATER MAINS:

1. AFTER TRENCH HAS BEEN BACKFILLED, HYDROSTATIC ACCEPTANCE TESTS, CONSISTING OF A PRESSURE TEST AND A LEAKAGE TEST, SHALL BE PERFORMED ON ALL SECTIONS OF WATER MAINS INSTALLED. LEAKAGE TEST SHALL BE CONDUCTED CONCURRENTLY WITH PRESSURE TEST. TEST SECTION SHALL BE LIMITED TO ABOUT 2000 FT (MAX.) UNLESS OTHERWISE APPROVED BY THE ENGINEER.
2. AFTER ALL TESTS AND INSPECTIONS HAVE BEEN PERFORMED EVIDENCE OF COMPLIANCE SHALL BE FORWARDED TO OWNER/ENGINEER AND THE MUNICIPALITY PRIOR TO ACCEPTANCE.
3. ALL WATER FOR TESTS SHALL BE FURNISHED AND DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. SOURCE AND/OR QUALITY OF WATER WHICH THE CONTRACTOR PROPOSES TO USE IN TESTING LINES SHALL BE ACCEPTABLE TO THE ENGINEER.
4. HYDROSTATIC PRESUMPTIVE TESTS MAY BE PERFORMED WHEN SYSTEM IS PARTIALLY BACKFILLED TO SIMPLY CHECK WORK, BUT ACCEPTANCE OF SYSTEM SHALL BE BASED ON HYDROSTATIC TESTS RUN ON FINISHED SYSTEM AFTER IT HAS BEEN COMPLETELY BACKFILLED. ALL HYDROSTATIC TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C 600 OR LATER ADDITION, AS MODIFIED HEREIN.
5. FOR THE PRESSURE TEST, SYSTEM SHALL BE PRESSURIZED AND MAINTAINED AT A MINIMUM OF 150 POUNDS PER SQUARE INCH, OR 1.5 TIMES THE WORKING PRESSURE, WHICHEVER IS GREATER, BASED ON THE ELEVATION OF THE LOWEST POINT IN THE SECTION BEING TESTED AND CORRECTED TO THE ELEVATION OF THE GAUGE. PROVISIONS SHALL BE MADE TO RELIEVE AIR TRAPPED AT HIGH POINTS IN THE SYSTEM THROUGH ADJACENT HYDRANTS OR THROUGH TAPS AND CORPORATION STOPS INSTALLED FOR THIS PURPOSE BY THE CONTRACTOR. AFTER SAID PRESSURE HAS BEEN MAINTAINED SUCCESSFULLY, WITH FURTHER PUMPING AS REQUIRED, FOR A PERIOD OF AT LEAST TWO HOURS, THE SECTION UNDER TEST SHALL BE CONSIDERED TO HAVE PASSED THE PRESSURE TEST.
6. LEAKAGE TEST SHALL BE PERFORMED CONCURRENTLY USING A MINIMUM TEST PRESSURE OF 150 LBS/SQUARE INCH, OR 1.5 TIMES THE WORKING PRESSURE, WHICHEVER IS GREATER, BASED ON THE ELEVATION OF THE LOWEST POINT IN THE SECTION UNDER TEST AND CORRECTED TO ELEVATION OF THE GAUGE. LEAKAGE TEST DURATION SHALL BE A MINIMUM OF 2 HOURS AFTER LEAKAGE RATE HAS STABILIZED.
7. MAXIMUM ALLOWABLE LEAKAGE SHALL BE AS SHOWN IN THE FOLLOWING TABLE: ALLOWABLE LEAKAGE PER 1000 FT (305M) OF PIPELINE (GPH)

AVG. TEST PRESSURE PSI	NOMINAL PIPE DIAMETER–IN. 4	6	8	10	12	14	16
450	0.57	0.86	1.15	1.43	1.72	2.01	2.29
400	0.54	0.81	1.08	1.35	1.62	1.89	2.16
350	0.51	0.76	1.01	1.26	1.52	1.77	2.02
300	0.47	0.70	0.94	1.17	1.40	1.64	1.87
275	0.45	0.67	0.90	1.12	1.34	1.57	1.79
250	0.43	0.64	0.85	1.07	1.28	1.50	1.71
225	0.41	0.61	0.81	1.01	1.22	1.42	1.62
200	0.38	0.57	0.76	0.96	1.15	1.34	1.53
175	0.36	0.54	0.72	0.89	1.07	1.25	1.43
150	0.33	0.50	0.66	0.83	0.99	1.16	1.32
125	0.30	0.45	0.60	0.76	0.91	1.06	1.21
100	0.27	0.41	0.54	0.68	0.81	0.95	1.08

1. IF LEAKAGE IN SYSTEM EXCEEDS THE SPECIFIED AMOUNT, THE CONTRACTOR SHALL, AT NO ADDED COST TO THE OWNER, LOCATE, REPAIR, AND/OR REPLACE DEFECT(S) AND RE–TEST PIPING SYSTEM.

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

0 1 2 3
ORIGINAL SCALE IN INCHES

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rev.	date	description

GAS LAND 5200 ROUTE 9W

WATER DETAILS

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SPL	CPL
date 01/20/22	scale AS SHOWN
project no. 81912.00	
sheet no. C530	

Drawing Name: Z:\Projects\81900–81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C530_81912–00_WATRD.dwg
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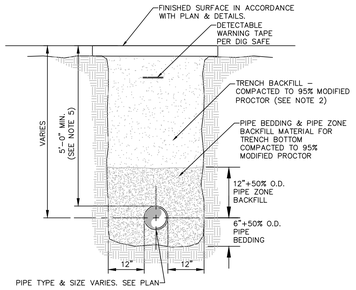
Date Printed: Jan 24, 2022, 8:33am



NOTES:

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

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

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

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

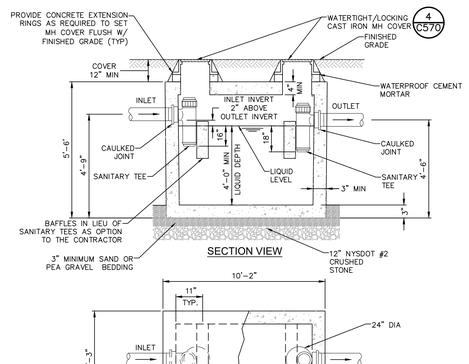
IN NON–TRAFFIC UNPAVED AREAS TRENCH BACKFILL CAN BE MATERIALS EXCAVATED FROM THE TRENCH AS APPROVED BY THE ENGINEER AND COMPACTED TO 90% MODIFIED PROCTOR.

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

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

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

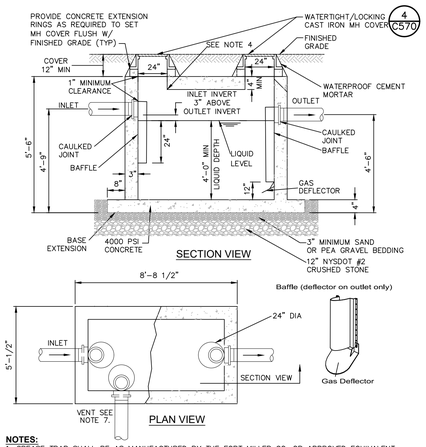
1 PIPE TRENCH DETAIL (TYPICAL)
SCALE: NOT TO SCALE



NOTES:

1. SEPTIC TANKS SHALL BE AS MANUFACTURED BY THE FORT MILLER CO. OR APPROVED EQUIVALENT.
2. DIMENSIONS SHOWN ARE PER STRUCTURES MANUFACTURED BY FORT MILLER CO.
3. STRENGTH OF THE STRUCTURE SHALL BE CONFORMANCE WITH DCS SECTION 75–A.6(b)(1)(iii).
4. A MINIMUM OF ONE–INCH CLEARANCE BETWEEN THE UNDERSIDE OF THE TOP OF SEPTIC TANK AND TOP OF BAFFELS IN ACCORDANCE WITH DCS SECTION 75–A.6(b)(1)(iv).
5. NO GARBAGE GRINDERS SHALL BE UTILIZED.
6. THE EXTERIOR SHALL RECEIVE TWO BITUMINOUS COATS.
7. UNLESS TANK IS SEAMLESS IT MUST PASS A 24–HOUR HYDROSTATIC TEST.

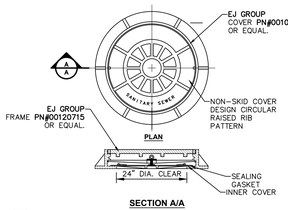
2 1250 GAL SEAMLESS CONCRETE SEPTIC TANK
SCALE: NOT TO SCALE



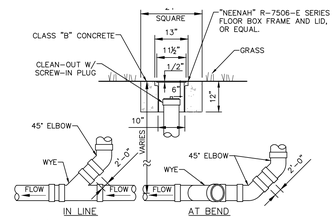
NOTES:

1. GREASE TRAP SHALL BE AS MANUFACTURED BY THE FORT MILLER CO. OR APPROVED EQUIVALENT.
2. DIMENSIONS SHOWN ARE PER STRUCTURES MANUFACTURED BY FORT MILLER CO.
3. THE STRUCTURE SHALL BE ABLE TO SUPPORT AT LEAST 300 PSF..
4. THERE SHALL BE A ONE–INCH MINIMUM CLEARANCE BETWEEN THE UNDERSIDE OF THE TOP OF THE TANK AND THE TOP OF ALL BAFFLES.
5. THE EXTERIOR SHALL RECEIVE TWO BITUMINOUS COATS.
6. UNLESS TANK IS SEAMLESS IT MUST PASS A 24–HOUR HYDROSTATIC TEST.
7. GREASE TRAP SHALL BE EQUIPPED WITH A 3" VENT EXTENDING THROUGH THE ROOF.

3 1000 GAL CONCRETE SEAMLESS GREASE TRAP
SCALE: NOT TO SCALE



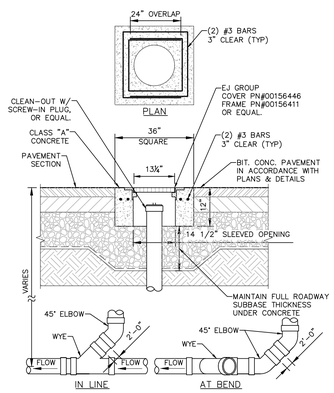
4 WATERTIGHT/LOCKING CAST IRON MH COVER
SCALE: NOT TO SCALE



NOTES:

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

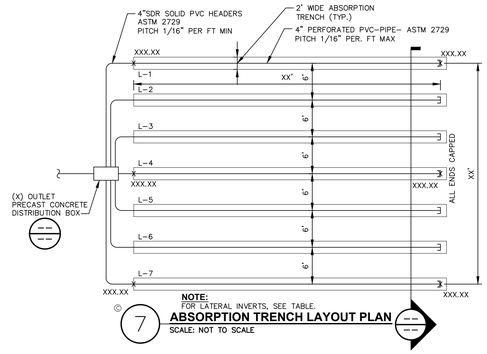
5 CLEAN OUT - NON TRAFFIC AREAS
SCALE: NOT TO SCALE



NOTES:

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

6 CLEAN OUT - TRAFFIC AREAS
SCALE: NOT TO SCALE



NOTE:
FOR LATERAL INVERTS, SEE TABLE.

7 ABSORPTION TRENCH LAYOUT PLAN
SCALE: NOT TO SCALE

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

8 INVERT, CHANNEL AND BENCHWALLS
SCALE: NOT TO SCALE

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

* OR EQUIVALENT

MH STEP DESIGN AND INSTALLATION SHALL COMPLY WITH ALL OSHA REGULATIONS

9 COPOLYMER POLYPROPYLENE MH STEP
SCALE: NOT TO SCALE

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

10 MANHOLE JOINT
SCALE: NOT TO SCALE

SEWAGE FACILITIES DEMOLITION NOTES:

1. CONTRACTOR SHALL LOCATE AND REMOVE ALL COMPONENTS OF THE EXISITNG SSDS SERVICING ALL BUILDINGS PROPOSED FOR DEMOLITION.
2. SEPTIC TANKS, LEACHING FIELDS, AND OTHER SIMILAR FACILITIES ASSOCIATED WITH THE EXISTING BUILDING SHALL BE PUMPED FREE OF SEPTAGE OR SEWAGE, REMOVED AND THE RESULTING HOLE SHALL BE BACKFILLED IN LIFTS OF COMPACTED SUITABLE FILL MATERIAL.
3. THE ABANDONMENT AND/OR DECOMMISSIONING OF ALL EXISTING SUBSURFACE DISPOSAL SYSTEMS MUST BE IN ACCORDANCE WITH THE PROCEDURES APPROVED BY THE COUNTY DEPARTMENT OF HEALTH AND CERTIFIED BY A NYS PROFESSIONAL ENGINEER.
4. TANKS SHALL BE PUMPED BY A DEC CERTIFIED SEEPAGE HAULER AND ITEMS REMOVED FROM SITE SHALL BE IN ACCORDANCE WITH DEC TRANSPORT AND DISPOSAL REQUIREMENTS.
5. A PROFESSIONAL ENGINEER SHALL CERTIFY TO THE PROPER ABANDONMENT OF THE SSDS AREA TO THE TOWN.

TESTING GRAVITY SEWER SYSTEM:

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

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rev.	date	description

GAS LAND 5200 ROUTE 9W

SUBSURFACE DISPOSAL SYSTEM DETAILS

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
SMD	CPL
date	scale
01/20/22	AS SHOWN
project no.	
81912.00	
sheet no.	
C540	

0 1 2 3
ORIGINAL SCALE IN INCHES

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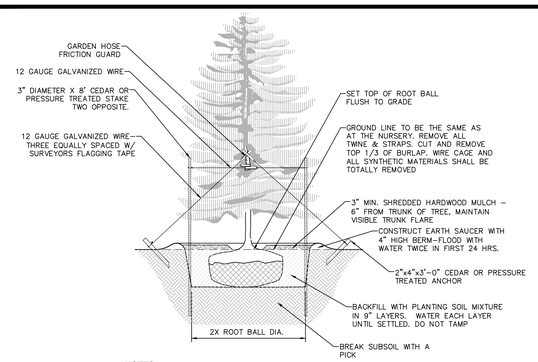
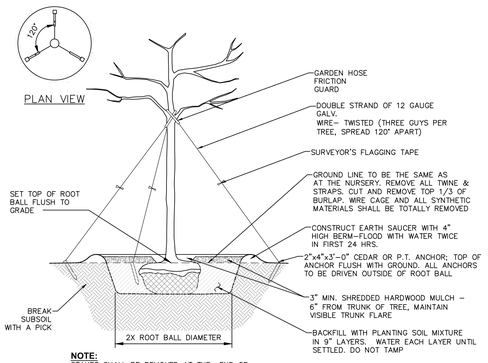
Date Printed: Jan 24, 2022, 8:33am



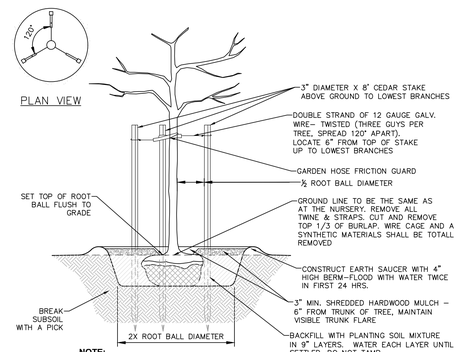
NOTES:
1. SPRAY WITH ANTIDESICCANT IN ACCORDANCE WITH MFG.'S RECOMMENDATIONS.
2. TREES LESS THAN 3" CALIPER SHALL BE STAKED.
3. TREES LARGER THAN 3" CALIPER AND UP SHALL BE GUYED AND ANCHORED.
4. STAKES SHALL BE REMOVED AT THE END OF THE FIRST GROWING SEASON AFTER PLANTING.

1 EVERGREEN PLANTING DETAIL
SCALE: NOT TO SCALE



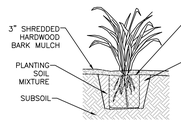
NOTE:
STAKES SHALL BE REMOVED AT THE END OF THE FIRST GROWING SEASON AFTER PLANTING

2 PLANTING AND GUYING DETAILS-FOR TREES 3" CALIPER AND LARGER, BALLED AND BURLAPPED
SCALE: NOT TO SCALE



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

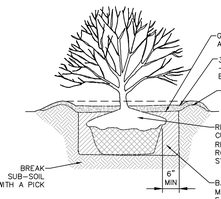
3 PLANTING AND GUYING DETAILS-FOR TREES SMALLER THAN 3" CALIPER, BALLED AND BURLAPPED
SCALE: NOT TO SCALE



SECTIONAL ELEVATION

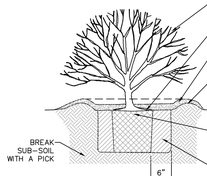
NOTES:
1. SPADED PLANTING SOIL MIX (4"–6" DEPTH), ADD FERTILIZER WHEN MIXING. DO NOT COMPACT AFTER PLANTING.
2. WATER THOROUGHLY AFTER PLANTING.
3. PROVIDE WELL DRAINING SUBSOIL WHEN SOIL IS HEAVY OR COMPACTED.
4. PLANTS SHALL BE REMOVED FROM ALL CONTAINERS WHEN PLANTED, UNLESS OTHERWISE STATED IN THE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

4 CONTAINERIZED PERENNIAL PLANTING
SCALE: NOT TO SCALE



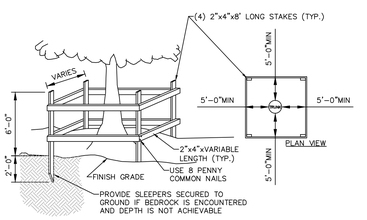
NOTE:
SPRAY WITH ANTIDESICCANT IN ACCORDANCE WITH MFG.'S RECOMMENDATIONS IF FOLIAGE IS PRESENT.

5 SHRUB PLANTING DETAIL FOR ALL SHRUBS BALLED AND BURLAPPED
SCALE: NOT TO SCALE



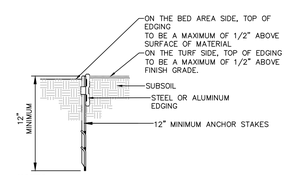
NOTE:
SPRAY WITH ANTI DESICCANT IN ACCORDANCE WITH MFG.'S RECOMMENDATIONS IF FOLIAGE IS PRESENT.

6 SHRUB PLANTING DETAIL FOR CONTAINERIZED SHRUBS
SCALE: NOT TO SCALE



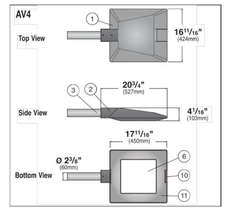
NOTE:
SEE LANDSCAPING PLAN FOR ADDITIONAL TREE PROTECTION NOTES.

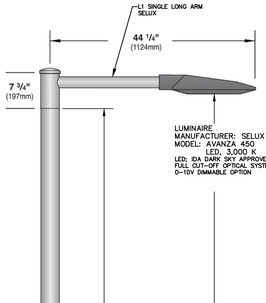
7 TEMPORARY TREE PROTECTION DETAIL
SCALE: NOT TO SCALE



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

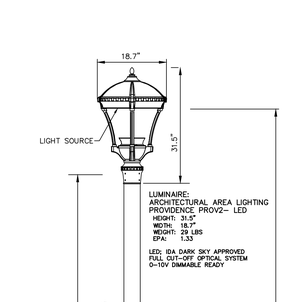
9 LANDSCAPE BED EDGING
SCALE: NOT TO SCALE



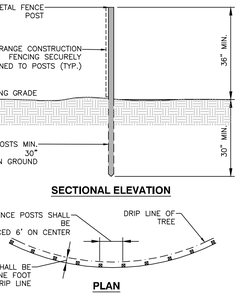


1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
2. ALL EXCAVATIONS SHALL BE BACKFILLED WITH STRUCTURAL FILL AND COMPACTED TO 95% OF MAXIMUM MATERIAL DENSITY.
3. ELECTRICAL POWER SUPPLY, WIRE, AND CONDUIT BY OTHERS.

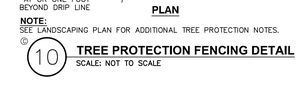
1 C550 POST& LUMINAIRE LIGHTING DETAIL
SCALE: N.T.S.



2 C550 POST-TOP DECORATIVE LIGHTING DETAIL
SCALE: N.T.S.



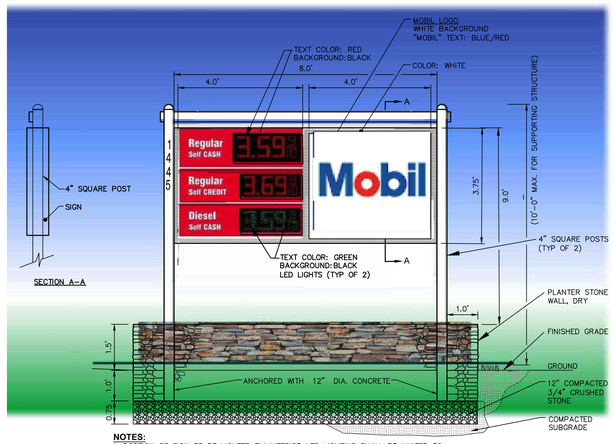
SECTIONAL ELEVATION



PLAN

NOTE:
SEE LANDSCAPING PLAN FOR ADDITIONAL TREE PROTECTION NOTES.

10 TREE PROTECTION FENCING DETAIL
SCALE: NOT TO SCALE



NOTES:
1. PORTION OF SIGN TO BE LIGHTED BY INTERIOR LED LIGHTING SHALL BE LIMITED TO THE DIGITAL GASOLINE PRICING & THE MOBIL LOGO.
2. GASOLINE PRICE SIGNS SHALL HAVE A STEADY ILLUMINATION OF A CONSTANT COLOR.

11 FREE-STANDING SIGN AND PLANTER DETAIL
SCALE: NOT TO SCALE

NOTE:
GROUND COVERS SHOULD BE POT OR CONTAINER GROWN.

8 GROUND COVER/ ANNUAL PLUG PLANTING
SCALE: NOT TO SCALE

LANDSCAPING NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL CAREFULLY COORDINATE CONSTRUCTION ACTIVITIES WITH THAT OF THE EARTHWORK CONTRACTOR AND OTHER SITE DEVELOPMENT.
2. THE CONTRACTOR SHALL VERIFY DRAWING DIMENSIONS WITH ACTUAL FIELD CONDITIONS AND INSPECT RELATED WORK AND ADJACENT SURFACES. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF ALL FINISH GRADES WITHIN THE WORK AREA. THE CONTRACTOR SHALL REPORT TO THE LANDSCAPE ARCHITECT/ENGINEER AND OWNER ALL CONDITIONS WHICH PREVENT PROPER EXECUTION OF THIS WORK.
3. THE EXACT LOCATION OF ALL EXISTING UTILITIES, STRUCTURES AND UNDERGROUND UTILITIES, WHICH MAY NOT BE INDICATED ON THE DRAWINGS, SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES AND UTILITY SERVICES AND IS RESPONSIBLE FOR THEIR REPLACEMENT IF DAMAGED.
4. THE CONTRACTOR SHALL KEEP THE PREMISES FREE FROM RUBBISH AND ALL DEBRIS AT ALL TIMES AND SHALL ARRANGE MATERIAL STORAGE SO AS NOT TO INTERFERE WITH THE OPERATION OF THE PROJECT. ALL UNUSED MATERIALS, RUBBISH AND DEBRIS SHALL BE REMOVED FROM THE SITE.
5. NO TREES OR SHRUBS SHALL BE PLANTED ON EXISTING OR PROPOSED UTILITY LINES.
6. QUALITY ASSURANCE:
   A. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO THE LATEST EDITION OF "STANDARDIZED PLANT NAMES" AS ADOPTED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE.
   B. SIZE AND GRADING: PLANT SIZES AND GRADING SHALL CONFORM TO THE LATEST EDITION OF "AMERICAN STANDARD FOR NURSERY STOCK" AS SPONSORED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC (AAN), UNLESS OTHERWISE SPECIFIED.
   C. NURSERY SOURCE: OBTAIN FRESHLY DUG, HEALTHY, VIGOROUS PLANTS NURSERY GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT FOR A MINIMUM OF 2 YEARS. PLANTS SHALL HAVE BEEN LINED OUT IN ROWS, ANNUALLY CULTIVATED, SPRAYED, PRUNED AND FERTILIZED IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE. ALL PLANTS SHALL HAVE BEEN TRANSPLANTED OR ROOT PRUNED AT LEAST ONCE IN THE PAST 3 YEARS. BALLED AND BURLAPPED PLANTS MUST COME FROM SOIL WHICH WILL HOLD A FIRM ROOT BALL. HEELED IN PLANTS AND PLANTS FROM COLD STORAGE ARE NOT ACCEPTABLE.
   D. SUBSTITUTIONS: DO NOT MAKE SUBSTITUTIONS OF TREES AND/OR SHRUB MATERIALS. IF REQUIRED LANDSCAPE MATERIAL IS NOT OBTAINABLE, SUBMIT PROOF OF NON–AVAILABILITY AND PROPOSAL FOR USE OF EQUIVALENT MATERIAL. WHEN AUTHORIZED, ADJUSTMENTS OF CONTRACT AMOUNT (IF ANY) WILL BE MADE BY CHANGE ORDER.
7. SEEDING & PLANTING SEASONS AND TIMING CONDITIONS:
   A. UNLESS OTHERWISE DIRECTED IN WRITING, SEED LAWNS FROM MARCH 15 TO JUNE 15, AND FROM AUGUST 15 TO OCTOBER 15.
   B. UNLESS OTHERWISE DIRECTED IN WRITING PLANT TREES AND SHRUBS FROM MARCH 15 TO JUNE 1, AND FROM AUGUST 15 TO OCTOBER 30.
   C. AREAS UNDERGOING CLEARING OR GRADING AND ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WHERE LAWNS OR PLANTINGS ARE TO BE ESTABLISHED AND WORK IS COMPLETE, SHALL BE RESTORED WITH PERMANENT VEGETATIVE COVER AS SOON AS SITE AREAS ARE AVAILABLE AND WITHIN 14 DAYS AFTER WORK IS COMPLETE; WORK SHALL BE WITHIN THE SEASONAL LIMITATIONS FOR EACH KIND OF LANDSCAPE WORK REQUIRED. PROVIDE STABILIZATION WITH TEMPORARY VEGETATIVE COVER (TOPSOIL AND TEMPORARY COVER SEED MIX) WITHIN 14 DAYS AFTER WORK IS COMPLETE, FOR SEEDING OUTSIDE PERMITTED SEEDING PERIODS.
8. PRODUCTS:
   A. IMPORTED TOPSOIL: PROVIDE TOPSOIL CONFORMING TO THE FOLLOWING:
      i. LOAM TOPSOIL, WELL DRAINED HOMOGENEOUS TEXTURE AND OF UNIFORM GRADE, WITHOUT THE ADMIXTURE OF SUBSOIL MATERIAL AND FREE OF DENSE MATERIAL, HARDPAN, CLAY, STONES, SOD OR OTHER OBJECTIONABLE MATERIAL.
      ii. CONTAINING NOT LESS THAN 5% NOR MORE THAN 20% ORGANIC MATTER IN THAT PORTION OF A SAMPLING PASSING A 1 ¼" SIEVE WHEN DETERMINED BY THE WET COMBUSTION METHOD ON A SAMPLE DRIED AT 105°C.
      iii. CONTAINING A PH VALUE WITHIN THE RANGE OF 6.5 TO 7.5 ON THAT PORTION OF THE SAMPLE WHICH PASSES A 1/4" SIEVE.
      iv. CONTAINING THE FOLLOWING WASHED GRADATIONS:

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

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

SUN AND PARTIAL SHADE:

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

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

SHADE:

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

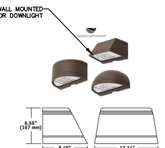
**SHADE TOLERANT VARIETY

      ii TEMPORARY COVER SEED MIX

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

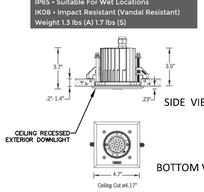
   C. LIME: NATURAL LIMESTONE CONTAINING AT LEAST 85% OF TOTAL CARBONATES, GROUND TO SUCH FINENESS THAT AT LEAST 90% PASSES A 10–MESH SIEVE AND AT LEAST 50% PASSES A 100–MESH SIEVE.
   D. FERTILIZER:
      i. FOR STARTER FERTILIZING: COMMERCIAL STARTER FERTILIZER, GRANULAR, NONBURNING PRODUCT CONTAINING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

13w LED 965 Lumens
IP65 - Suitable For Wet Locations
IK08 - Impact Resistant (Vandal Resistant)
Weight 1.3 lbs (A) 1.7 lbs (S)



MANUFACTURER: HUBBELL LIGHTING
MODEL: GEO–PAK SIZE 1
LED; IDA DARK SKY APPROVED
EXTERIOR WALL MOUNTED LUMINAIRE
0–10V DIMMER DRIVER STANDARD

3 C550 WALL MOUNTED LIGHTING FIXTURE DETAIL
SCALE: SCALE: 1"=20'



MANUFACTURER: LIGMAN LIGHTING
MODEL: RECESSED CEILING NIKON 2
LED; IDA DARK SKY APPROVED
CANOPY LUMINAIRE
0–10v DIMMER OPTION

4 C550 CANOPY LIGHTING FIXTURE DETAILS
SCALE: NTS

FOR PLANNING BOARD REVIEW - NOT FOR CONSTRUCTION

0 1 2 3
ORIGINAL SCALE IN INCHES

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rev.	date	description

GAS LAND 5200 ROUTE 9W

LIGHTING & LANSCAPE DETAILS AND NOTES

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
C550	CPL
date	scale
01/20/22	AS SHOWN
project no.	81912.00
sheet no.	C550

Drawing Name: Z:\Projects\81900–81999\81912.00 Gas Land Town of Newburgh Route 9 W\DWG\05_PLAN_C550_81912–00_LIGHT–LANDSCD.dwg
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Date Printed: Jan 24, 2022, 9:37am