



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

PROJECT NAME: FAC SELF STORAGE/UHAUL-MIDDLEHOPE
PROJECT NO.: 2021-33
PROJECT LOCATION: SECTION 6, BLOCK 1, LOT 11 & 12
REVIEW DATE: 25 FEBRUARY 2022
MEETING DATE: 3 MARCH 2022
PROJECT REPRESENTATIVE: MECURIO-NORTON-TAROLLI- MARSHALL

1. An SWPPP has been submitted for the project. The SWPPP is under review by this office.
2. Numerous comments from the Town’s Landscape Architect consultant have been provided which may impact the design and grading of the Site Plan.
3. The Planning Board should declare its intent for Lead Agency. This office has no record of circulating a Notice of Intent for Lead Agency as of this date.
4. Location of deep test pits and information pertaining to the deep test pits for design of the infiltration basins in compliance with NYSDEC design guidelines should be provided.
5. Sanitary sewer disposal system design requirements identifies a DB-12 distribution box while the detail identifies a DB-9. NYS DOT approval for the access drive and utility connections are required.
6. The slope of the driveway to the DOT right-of-way appears to not have a negative pitch back from the roadway. DOT typically requires a negative grade from the right-of-way into the sight.
7. Standard parking space detail should comply with Town of Newburgh standard requiring double line striping.
8. The water valve piping to the structure for the potable water and fire flow water should be designed per the attached detail. Detail provides that potable water is terminated when fire flow water is terminated.
9. Septic design must contain a note stating that an As-Built plan and certification by a NYS Design Professional must be submitted for the subsurface sanitary sewer disposal system prior to issuance of a Certificate of Occupancy.
10. County Planning 239 Referral is required as project is located on a State Highway.

Respectfully submitted,

MHE Engineering, D.P.C.

Patrick J. Hines
Principal
PJH/kbw

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Stormwater Pollution Prevention Plan

For

UHaul – Middle Hope Commercial Site Plan

5325 U.S. Route 9W
Town of Newburgh
Orange County, New York

Prepared for:

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PE 093918

Prepared:

January 31, 2022



Disclaimer: This report has been compiled in accordance with the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity, Permit No. GP 0-20-001, effective January 29, 2020. The professional preparing this report certifies that all information provided in this document and associated attachments is, to the best of their knowledge and belief, true, accurate, and complete. No portion of this report may be altered in any way without the express written consent of the licensed design professional who prepared it.



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Appendices

- Appendix A:** SPDES General Permit (GP 0-20-001)
Appendix B: Permit Authorization Forms
- Notice of Intent (NOI)
 - SWPPP Preparer Certification



| | |
|--------------------|--|
| | <ul style="list-style-type: none">• Owner/Operator Certification• MS4 Acceptance Form• Notice of Termination (NOT) |
| Appendix C: | Contractor Certification Statement |
| Appendix D: | Project Figures <ul style="list-style-type: none">• Figure 1: Site Location Map• Figure 2: Site Aerial Map• Figure 3: Existing Conditions Plan• Figure 4: Site Development Plan |
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I. Introduction & Instruction

A. Obtaining Permit Coverage:

The proposed development is a construction activity resulting in the soil disturbance of one (1) or more acres and is required to obtain coverage under the current New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) *General Permit for Stormwater Discharges from Construction Activity, GP 0-20-001 (General Permit)*.

In order to obtain coverage under the general permit, the following items must be completed:

1. *Preparation of Stormwater Pollution Prevention Plan*

A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared in accordance with the requirements of the current General Permit, New York State Stormwater Management Design Manual, and New York State Standards and Specifications for Erosion and Sediment Control. The SWPPP is a dynamic document and must be kept current in order to accurately depict all temporary erosion and sediment control practices being utilized during construction and all post-construction stormwater management practices being constructed.

At a minimum, the SWPPP shall be amended:

- Whenever the current provisions prove to be ineffective at minimizing pollutants in the stormwater discharges from the site;
- 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;
- To address any issues or deficiencies identified during an inspection by the qualified inspector, the NYSDEC, or other regulatory authority;
- Whenever there is a change to the area of disturbance; and,
- To document final as-built site conditions.

2. *Preparation of Notice of Intent (NOI)*

A Notice of Intent (NOI) must be prepared for the proposed development. Signed certifications by the owner/operator and SWPPP preparer must be included. Copies of the NOI and NOI certifications forms are included in Appendix B.

3. *Preparation of MS4 Acceptance Form*

The proposed development is located within a regulated, traditional land use control Municipal Separate Storm Sewer System (MS4) and is required to have the MS4 Acceptance Form signed by the principal executive officer from the MS4, or by a duly authorized representative of that person. A copy of the MS4 Acceptance Form is included in Appendix B.

4. *Form Submittal & Permit Authorization*

The completed NOI and MS4 Acceptance forms are required to be submitted electronically utilizing the *DEC nForm Portal*. Copies of the required forms and certifications are included in Appendix C. Further information regarding the project forms is available at (<http://www.dec.ny.gov/chemical/43133.html>). The required



forms must be submitted to NYSDEC at least five (5) prior to the start of construction activity. An owner or operator shall not commence construction activity until their authorization to discharge under the General Permit goes into effect.

Upon review and processing of the completed forms NYSDEC will issue an NOI Acknowledgement letter, including a specific permit identification number for the project, authorizing the discharge. Authorization for discharges under the General Permit shall not be effective until project review pursuant to the State Environmental Quality Review Act (SEQRA) has been completed. Coverage under the General Permit may be suspended or denied if the NYSDEC determines the SWPPP does not meet the permit requirements. Only stormwater discharges from the areas of disturbance identified in the NOI are permitted under the permit coverage.

B. Owner/Operator Responsibilities:

The Owner/Operator is the entity responsible for ensuring the specifications of the SWPPP and requirements of the General Permit are properly implemented. This includes the selection, design, installation, and maintenance of control measures to minimize the discharge of pollutants and to prevent a violation of water quality standards.

The Owner/Operator shall designate a Qualified Inspector to complete site inspections in accordance with the requirements of the General Permit. Prior to the commencement of construction, the Owner/Operator shall identify the contractor or contractors responsible for the implementation of the SWPPP. The Owner/Operator shall ensure all contractors complete the Contractor Certification Statement referenced in Section I.C, below, and are familiar with the Contractor Responsibilities referenced in Section I.D.

As required by the General Permit, the project Site Plan and SWPPP shall be updated, as necessary, to denote major changes to the site conditions and/or changes in the design and implementation of the stormwater control features. The Owner/Operator shall notify the MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice components of the SWPPP. All proposed modifications shall be reviewed and accepted by the MS4 prior to commencing construction of the post-construction stormwater practices.

C. Contractor Certification:

All individuals responsible for the implementation of the requirements specified in this Stormwater Pollution Prevention Plan (SWPPP) must certify that they have read and understand the current SPDES *General Permit for Stormwater Discharges from Construction Activity*. Additionally, those individuals implementing the SWPPP must be certified as designees of the owner/operator as described in Part III.A.6 of the General Permit. A copy of the current SPDES General Permit, GP 0-20-001, is included in Appendix A.

The following certification shall be signed by each contractor and subcontractor responsible for installing, repairing, replacing, inspecting, and maintaining the erosion and sediment control practices included in this SWPPP, and the contractors and subcontractors that will be responsible for constructing the post-construction stormwater management practices included in this SWPPP.



“I hereby certify under the 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/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.”

A copy of the Contractor Certification Statement is included in Appendix C. Copies of the signed certification shall be included with the onsite project documents as required by the

D. Contractor Responsibilities:

All site contractors and subcontractors shall be familiar with the requirements of the SWPPP, including the erosion and sediment control practices designated therein. In accordance with the requirements of the General Permit, at least one (1) Trained Contractor shall be identified responsible for the day-to-day implementation of the SWPPP. The Trained Contractor shall complete daily site inspections to ensure all erosion and sediment control devices are functioning properly. Any deficiencies identified by the Trained Contractor shall be addressed and corrective actions implemented within one (1) business day. At least one (1) Trained Contractor is required to be onsite whenever land disturbance activities are occurring.

E. Required Documentation:

As required by the General Permit, copies of the following documents shall be maintained onsite during construction:

- SPDES General Permit (GP 0-20-001)
- Notice of Intent (NOI)
- MS4 Acceptance Form
- NOI Acknowledgement Letter
- Stormwater Pollution Prevention Plan (SWPPP)
- Project Site Plan
- Contractor Certification Statement(s)
- Stormwater Inspection Reports
- Any other supporting documentation necessary to demonstrate compliance with the general permit.

The above-referenced documents shall be maintained onsite in a secure location accessible during normal business hours to any individual completing a compliance inspection. Documents shall be kept on-site at all times during construction until the site has achieved final stabilization and a Notice of Termination (NOT) has been submitted to NYSDEC.



II. Site Characteristics

A. Site Location:

The project site is located in the Town of Newburgh, Orange County, New York. The project site is located on the westerly side of U.S. Route 9W approximately northwest of the intersection of Highland Terrace. The parcel currently has a street address of 5325 U.S. Route 9W. The project site consists of Town of Newburgh Tax Parcel: Section 20, Block 2, Lot 2. The subject parcel contains 5.236-acres of land located in the Business (B) zoning district with a Self-Storage Center (SC) Overlay. The lot is not located in or adjacent to any lots within the Orange County Agricultural Districts. A copy of the site location map is included as Figure 1 in Appendix D.

B. Land Cover & Topography:

The project site is currently primarily wooded and vacant. The site previously contained multiple structures and a driveway accessing U.S. Route 9W. These improvements were removed from the site around 2005. The driveway is still present but has become overgrown due to lack of use. The project site contains approximately 0.26-acres of existing impervious cover associated with the remains of the paved driveway.

The entirety of the site elevates from U.S. Route 9W with all of the drainage flowing into existing culverts on the north and south of the site. Drainage from the houses and Carter Avenue located to the west of the parcel drains through an existing drainage course located on the site. The drainage swale flows along the northerly portion of the site into an existing culvert draining across U.S. Route 9W. The swale is a wet weather drainage course with no flowing water except after rainfall or snow melt events. The swale is primarily unvegetated stones lining the base. Portions of the swale flow through areas of exposed rock that appear to be bedrock. No wetlands currently exist on the project site or on any adjoining parcels. The westerly portion of the site is encumbered with an overhead utility line and associated easement in favor of Central Hudson Gas & Electric. Copies of the aerial and existing conditions maps are included as Figures 2 and 3 in Appendix D.

C. Soils Classification:

According to the United States Department of Agriculture (USDA) National Cooperative Soil survey, the soils located on the development parcel are classified as Bath-Nassau channery silt loam, classified as hydrologic soils group (HSG) 'C' soils; and Mardin gravelly silt loam, classified as HSG 'D' soils. HSG 'D' soils are defined as having a very low infiltration rate and high runoff potential when thoroughly wet. A copy of the soil map is included in Appendix E.

D. Aquifer Designation:

The project site is not located above a primary or principal aquifer as identified in the NYSDEC *Technical & Operational Guidance Series (TOGS)* Section 2.1.3, October 1990 edition. The project site is not located above a sole-source aquifer as identified on the United States Environmental Protection Agency (EPA) Sole Source Aquifers interactive mapper.



E. Watershed Designation:

The project site is not located within a watershed requiring enhanced phosphorus removal as identified in Appendix C of GP 0-20-001.

F. Receiving Waterbodies:

The nearest classified waterbody into which runoff from the project site is tributary is an offsite unnamed class C stream tributary to the Latintown Creek.

G. Wetlands:

Based upon a site inspection completed by Mercurio-Norton-Tarolli-Marshall, Engineering & Land Surveying, P.C. the site does not contain any regulated United States Army Corps of Engineers (ACOE) or New York State Department of Environmental Conservation (NYSDEC) wetlands. The onsite drainage course is a wet weather swale that remains dry and free of any wetland vegetation for a majority of the year.

H. Floodplains:

In accordance with the Federal Emergency Management Agency (FEMA) National Flood Insurance Program Flood Insurance Rate Map (FIRM) for the Town of Montgomery, Community 360623 Panel 120E, with an effective date of August 3, 2009, the project site is located within an area of minimal flood hazard (Zone X). A copy of the floodplain map is included as Figure 5 in Appendix D.

I. Threatened / Endangered Species:

Based upon a report generated by the NYSDEC EAF Mapper program, the project site has the potential to contain a species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered. The following species have been identified for potential impacts from the proposed development:

| Table 1: Threatened / Endangered Species Summary | | | |
|---|------------------------|-------------------------|------------------------|
| <u>Common Name</u> | <u>Scientific Name</u> | <u>NY State Listing</u> | <u>Federal Listing</u> |
| Indiana Bat | Myotis sodalis | Endangered | Endangered |

Based upon NYSDEC recommendations the clearing of all trees four (4) inches d.b.h. or greater has been restricted to occur between October 1 and March 31 to avoid adverse impacts to the Indiana Bat.

J. Historic Places:

Based upon a review of the New York Office of Parks, Recreation, and Historic Preservation (OPRHP), formerly the State Historic Preservation Office (SHPO), Cultural Resource Information System, there are no properties in the vicinity of the project site that are listed or eligible for listing on the State or National Register of Historic Places.



K. Rainfall Data:

Rainfall data utilized in the hydrological modelling was obtained from information prepared by Cornell University in a joint collaboration between the Northeast Regional Climate Center (NRCC) and the Natural Resources Conservation Service (NRCS). The referenced data is available online at the Extreme Precipitation in New York & New England website (<http://precip.net.eas.cornell.edu>). Utilizing the current rainfall frequency values generated for the specific project location, rainfall data was generated for the 1-, 10-, and 100-year, 24-hour storm events.

Rainfall data utilized in the water quality calculations based upon Figure 4.1 of January 2015 edition of the New York State Stormwater Management Design Manual. Based upon the above-referenced chart, the 90th percentile rainfall value (WQv, 0-year storm event) was determined to be P=1.40 inches.

| <i>Storm Event</i> | <i>Rainfall (inches)</i> |
|--------------------|--------------------------|
| WQv, 0-year | 1.40 |
| 1-year | 2.61 |
| 10-year | 4.66 |
| 100-year | 8.20 |

III. Project Description

The proposed development involves the construction of one (1) 23,063 square-foot self-storage building. The proposed building will measure 127'-0" x 179'-2" with a 20'-5" x 15'-2" attached office area on the westerly side. The building will have a maximum height of 35-feet. The proposed development will result in lot building coverage of approximately 10.1% and a lot coverage of approximately 24.8%. The maximum permitted lot building and lot coverage in the SC overlay zone is 30% and 80%, respectively.

The proposed self-storage development is intended to be occupied by U-Haul to supplement their existing facility located on the easterly side of U.S. Route 9W, across from Lattintown Road. The proposed facility will allow U-Haul to better serve the storage needs of the community. The proposed building will be utilized for the storage of U-Box self-storage containers. Additionally, rental vehicles will be available for clients at this site. The rental vehicles will be stored along the southerly side of the building.

The proposed development will require post-construction stormwater facilities to treat and detain runoff from the site. The areas around the buildings and parking lots not being developed will be landscaped or will have manicured lawn. The areas of the site not being developed will remain in their existing condition. The project involves approximately 2.51-acres of disturbance and approximately 1.32-acres of impervious cover at the site. The overall impervious cover at the site will increase by approximately 1.06-acres as result of the proposed development. A copy of the proposed development plan is included as Figure 8 in Appendix D.



IV. Drainage Areas

To analyze the impacts of the proposed development on the surrounding area, drainage areas have been approximated based upon the topography for the project site, United States Geological Survey maps, and field visits. To provide a more accurate analysis of the impacts of the proposed development the drainage areas analyzed have been limited only to the area of the project site. The study points analyzed receive all runoff from the proposed development located on the project site.

Pre- and Post-Development Drainage Area Maps have been included in Appendix F and G. The following chart provides the basic information for each study point analyzed:

| Table 3: Study Point Summary | | |
|-------------------------------------|--|---------------------|
| <i>Pre-Development</i> | | |
| <i>Study Point</i> | <i>Location</i> | <i>Area (acres)</i> |
| A | Existing 36" CMP culvert: Westerly side of US Route 9W, Northerly side of project site | 9.06 |
| B | Existing Catch Basin: Westerly side of US Route 9W, Southerly side of project site | 2.54 |
| <i>Post-Development</i> | | |
| <i>Study Point</i> | <i>Location</i> | <i>Area (acres)</i> |
| A' | Existing 36" CMP culvert: Westerly side of US Route 9W, Northerly side of project site | 9.89 |
| B' | Existing Catch Basin: Westerly side of US Route 9W, Southerly side of project site | 1.75 |

Photos of the existing drainage systems at the chosen study points are included below:



Photo 1: Study Point A



Photo 2: Study Point B



The existing catch basin at Study Point B receives additional runoff from the area south of the project site and west of US Route 9W. There is no change in off-site runoff between pre-development and post-development conditions. As such, the drainage area tributary to Study Point B has been limited to only the proposed development portion of the project site for the purposes of this analysis.

Both of the study points receive additional runoff from the upslope areas to the west of Carter Avenue. There is no change in off-site runoff between pre-development and post-development conditions. To provide a conservative analysis of the impacts of the proposed development the drainage areas have been bound along the centerline of Carter Avenue.

V. Green Infrastructure Criteria

In accordance with Chapter 3, “Stormwater Management Planning”, of the January 2015 edition of the New York State Stormwater Management Design Manual, the proposed site development plan and stormwater practices must be designed to reduce impacts on the environment through use of site planning techniques, runoff reduction techniques, and certain standard stormwater management practices.

A. Planning Practices:

In accordance with Section 5.2, “Planning for Green Infrastructure: Reduction of Impervious Cover”, of the Stormwater Management Design Manual, the proposed site plan has been designed to meet the specified planning techniques as follows:

1. Building Footprint Reduction:

The proposed climate-controlled self-storage buildings have been designed with three (3) stories to minimize the building footprint to the greatest extent practical.

2. Locating Development in Less Sensitive Areas:

The site plan has been designed to be as compact as possible to minimize the required disturbance and grading. The site plan has been designed to minimize impacts on the existing drainage areas and maintain existing drainage patterns to the maximum extent practicable. The proposed development has been situated in the general vicinity of the prior site development to minimize the amount of clearing required.

3. Soil Restoration:

Disturbed soils compacted during construction will be restored in accordance with NYSDEC regulations set forth in Section 5.1.6 of the Stormwater Design Manual. Restored soil will have a greater infiltration rate and a thicker vegetative cover, resulting in less stormwater runoff.

4. Reduction of Grading:

The proposed site plan has been designed to minimize the amount of grading and disturbance necessary on the site. Overall, the site has been designed to be as compact as possible and to work with existing grades to minimize the amount of disturbance and grading necessary for the development. The proposed development has been



located in the flatter sections of the site, adjacent to US Route 9W, to minimize clearing and grading in the steeper areas in the westerly portion of the parcel.

5. Parking Reduction:

In accordance with current Town of Montgomery Zoning Code, the project requires a minimum of one (1) parking space per 200 square-feet of office use. There is no set standard for self-storage use. For Lot 1, a total of six (6) designated parking spaces, including two (2) accessible spaces, are proposed for the self-storage. For Lot 2, a total of twenty-one (21) parking spaces, including two (2) accessible spaces, are proposed. Based upon a proposed office area of 4,200 square-feet, a minimum of twenty-one (21) parking spaces are required for Lot 2.

B. Green Infrastructure Techniques:

In accordance with Section 5.3, “Green Infrastructure Techniques”, of the January 2015 edition of the New York State Stormwater Management Design Manual, the proposed site plan has been designed to meet the specified green infrastructure techniques as follows:

1. Conservation of Natural Areas:

The requirements set forth in the conservation of natural areas standard specify that a minimum of 10,000 square feet be preserved. The regulation states that the recommended application of this practice is to preserve forest areas and stream corridors, wetlands, vernal pools, floodplains, and undisturbed open space. A portion of the site will be naturally conserved by the existing wetlands.

2. Sheetflow to Riparian Buffers or Filter Strips:

Vegetated filter strips or undisturbed natural areas may be utilized to treat sheet flow runoff from impervious surfaces. As stated in the Design Manual, the utilization of these practices requires space, is not available to sites without riparian areas or already forested riparian areas and requires the permanent protection of natural areas. There are no existing streams or adjacent buffer areas on the site. Runoff from the proposed development will be tributary to the proposed stormwater facilities.

3. Vegetated Swale:

Vegetated diversion swales have been proposed to convey stormwater runoff to the proposed stormwater treatment facilities. The swales will provide additional pre-treatment prior to the stormwater facilities, but no additional credit has been taken.

4. Tree Planting:

The landscaping plan for the proposed development specifies a variety of deciduous and evergreen trees and shrubs to be planted at the site. No credit has been taken for the proposed plantings.

5. Disconnect of Rooftop Runoff:

The downspouts for rooftop drainage from the proposed building are tributary to the proposed stormwater treatment facilities.



6. Stream Daylighting:

There are no covered streams located on the project site. Therefore, stream daylighting is not a practice that is possible to implement on this site.

7. Rain Gardens:

The use of rain gardens is limited to sheet flow or shallow concentrated flow from an impervious area or from a rood drain downspout with a total contributing area equal to or less than 1,000 square feet. The utilization of rain gardens is not practical at this site due to the size of the proposed buildings.

8. Green Roofs:

The owner does not accept green roofs on their buildings due to the long-term cost of operation and maintenance of the green roof. Green roofs are not an applicable practice at this site.

9. Stormwater Planters:

Stormwater planters are primarily intended to be used in urban redevelopment sites to treat rooftop runoff. Stormwater planters are not designed to treat runoff from roadways or parking lots.

10. Rain Barrels & Cisterns:

Rain barrels and cisterns are primarily utilized where a non-potable water source is desirable. The proposed development does not have a large amount of landscaped areas or other need for non-potable water. The rain barrels would go unused on this site. In addition, the rain barrels would need to be disconnected during winter months and re-connected during warm periods or the water within the barrel would freeze. Utilizing rain barrels or cisterns is not a practical form of treating stormwater runoff from this site.

11. Porous Pavement:

The utilization of porous pavement is not a viable practice at the project site due to the anticipated vehicle access and potential for sanding during winter months.

VI. Stormwater Treatment & Water Quality Controls

A. Minimum Runoff Reduction Volume:

In accordance with Section 4.3, “Runoff Reduction Volume (RRv)”, of the January 2015 edition of the New York State Stormwater Management Design Manual, the minimum runoff reduction volume required for the proposed development must be calculated. The minimum Runoff Reduction volume for the project site is as follows (copies of calculations included in Appendix H):

| <i>Area (acres)</i> | <i>S</i> | <i>Impervious Area (acres)</i> | <i>Minimum RRv (cu.ft.)</i> |
|---------------------|----------|--------------------------------|-----------------------------|
| 1.90 | 0.26 | 1.25 | 1,588 |



Analysis of the runoff reduction volume provide by the stormwater practices proposed on the site is included in Section VI.D, below.

B. Water Quality Volume:

In accordance with Section 4.2, “Water Quality Volume (WQv)”, of the January 2015 edition of the New York State Stormwater Management Design Manual, the Water Quality associated with the post-development site drainage area must be calculated. The required Water Quality volume for the project site is as follows (copies of calculations included in Appendix H):

| Table 5: Water Quality Volume (WQv) | | |
|--|--------------------------------|---------------------|
| <i>Area (acres)</i> | <i>Impervious Area (acres)</i> | <i>WQv (cu.ft.)</i> |
| 1.90 | 1.25 | 6,200 |

C. Water Quality Treatment:

In accordance with Section 4.2, “Water Quality Volume (WQv)”, of the January 2015 edition of the New York State Stormwater Management Design Manual, stormwater treatment facilities will be constructed to treat the Water Quality volume necessary for the contributing drainage area.

Based upon onsite soils testing the underlying soils in a portion of the development area have sufficient capacity for infiltration. To provide a conservative estimate of the post-construction drainage conditions the infiltration basin been designed with an infiltration rate of 2.0 inches per hour. Copies of the infiltration testing results are included in Appendix L.

To provide the required water quality treatment, one (1) infiltration basin has been designed. Specifications for the proposed stormwater treatment facilities are outlined below.

1. Infiltration Basin #1:

To treat the stormwater runoff from the proposed improvements, an Infiltration Basin (N.Y.S. Stormwater Practice I-2) has been designed. Infiltration Basin #1 receives runoff from post-development drainage area A’1. As per the NYSDEC Stormwater Worksheets, the minimum Water Quality volume to be provided for the tributary drainage area is 6,200 cubic feet.

Infiltration Basin #1 has been designed as an underground infiltration basin containing a total of six (6) rows of Cultec Recharger 330XLHD Stormwater Chamber units with a total system length of 1,050 linear feet. Pre-treatment will be provided by an isolation row located at the inlet end of the system. The system consists of five (5) rows at 875 linear feet. The isolation row consists of one (1) row of Recharger units at 175 linear feet wrapped with a permeable filter fabric to prevent sediment from entering the infiltration area. The chamber units for the isolation and infiltration rows shall be installed level within the basal area in a crushed stone bed with an assumed void space of 40% between the stones. The crushed stone bed shall extend a minimum of twelve (12) inches below the bottom of the chambers.



Runoff from smaller storm events will be detained and treated within the facility, while larger storms will overflow the internal weir wall located within the outlet catch basin. The underground infiltration basin will provide a total storage volume of 13,836 cubic feet at the elevation of the internal weir in the outlet catch basin (see Appendix G).

The infiltration basin has a maximum permitted Runoff Reduction volume (RRv) credit of 90% of the treated Water Quality volume (WQv), or a maximum RRv equal to the required WQv, whichever is less. As per the NYSDEC Stormwater Worksheets, the RRv provided by Infiltration Basin #1 is 6,200 cubic feet.

D. Runoff Reduction Volume:

Based on the NYSDEC Stormwater Worksheets included in Appendix H, the proposed stormwater practices for the project site provide a total Runoff Reduction volume (RRv) of 6,200 cubic feet. This exceeds the minimum Runoff Reduction volume of 1,588 cubic feet. The proposed stormwater practices reduce 100% of the Water Quality volume (WQv) from the tributary drainage area.

VII. Hydrological Analysis

The hydrological analysis for the proposed development was completed using two points of interest (study points). The associated drainage areas were analyzed using the methodology described in the United States Department of Agriculture Technical Release 55 (TR-55), *Urban Hydrology for Small Watersheds*, published in June 1986. Utilizing the rainfall data noted in Section II.K, the peak runoff for the 1-, 10-, and 100-year, 24-hour storm events was calculated for the pre- and post-development conditions. All calculations were completed using Hydrocad 10.00 software.

A. Pre-Development Drainage:

The pre-development site was analyzed using the two (2) points of interest identified in Section IV. Detailed information regarding cover types, hydrologic soils groups, and time of concentration calculations for the drainage area are included in Appendix I.

1. Drainage Area A:

Drainage Area A is 9.06 acres in size, consisting of 5.32 acres of woods, 1.65 acres of brush, 1.32 acres of grass, and 0.77 acres of existing impervious cover. Drainage Area A is the area tributary to Study Point A.

2. Drainage Area B:

Drainage Area B is 3.26 acres in size, consisting of 1.54 acres of woods, 0.52 acres of brush, 0.19 acres of grass, and 0.29 acres of existing impervious cover. Drainage Area B is the area tributary to Study Point B.

The following peak flows, in cubic feet per second (cfs), were calculated for the pre-development site. Copies of the Pre-development Runoff Calculations are included in Appendix I.



| Table 6: Pre-Development Peak Flows | | | | |
|--|---------------------|---------------|----------------|-----------------|
| <i>Study Point</i> | <i>Area (acres)</i> | <i>1-Year</i> | <i>10-Year</i> | <i>100-Year</i> |
| A | 9.06 | 9.09 | 24.02 | 49.64 |
| B | 2.54 | 2.03 | 5.27 | 10.91 |
| <i>Total</i> | <i>11.60</i> | <i>11.12</i> | <i>29.29</i> | <i>60.55</i> |

B. Post-Development Drainage:

The post-development site was analyzed using the same points of interest as the pre-development analysis. Two (2) sub-drainage areas were modelled for the post-development analysis for the drainage areas tributary to study point A. Detailed information regarding cover types, hydrologic soils groups, and time of concentration calculations for the drainage area are included in Appendix J.

1. Drainage Area A'1:

Drainage Area A'1 is 1.90 acres in size, consisting of 0.01 acres of grass, 0.64 acres of proposed grass, and 1.25 acres of proposed impervious cover.

2. Drainage Area A'2:

Drainage Area A'2 is 7.90 acres in size, consisting of 5.11 acres of woods, 0.40 acres of brush, 1.28 acres of grass, 0.70 acres of existing impervious cover, 0.45 acres of proposed grass, and 0.04 acres of proposed impervious cover.

3. Drainage Area B'1:

Drainage Area B'1 is 1.75 acres in size, consisting of 1.11 acres of woods, 0.25 acres of brush, 0.16 acres of grass, 0.10 acres of existing impervious cover, 0.10 acres of proposed grass, and 0.03 acres of proposed impervious cover.

The following peak flows, in cubic feet per second (cfs), were calculated for the post-development site. Copies of the Post-development Runoff Calculations are included in Appendix J.

| Table 7: Post-Development Peak Flows | | | | |
|---|---------------------|---------------|----------------|-----------------|
| <i>Study Point</i> | <i>Area (acres)</i> | <i>1-Year</i> | <i>10-Year</i> | <i>100-Year</i> |
| A' | 9.89 | 8.57 | 22.08 | 47.35 |
| B' | 1.75 | 1.57 | 4.06 | 8.35 |
| <i>Total:</i> | <i>11.64</i> | <i>10.14</i> | <i>6.14</i> | <i>55.70</i> |

VIII. Stormwater Detention & Water Quantity Controls

A. Channel Protection Volume (CPv) Requirement:

In accordance with the parameters of the January 2015 edition of the New York State Stormwater Management Design Manual, the 1-year storm event is required to be detained for twenty-four (24) hours. Following the methodology described in Chapter 8 of the Stormwater Management Design Manual, the required Channel Protection volume (CPv) for the project is computed to be 2,198 cubic feet, or 0.050 acre-feet. Copies of the Channel Protection Volume calculations are included in Appendix L.



B. Overbank & Extreme Flood Control Requirement:

The proposed improvements impact the existing stormwater runoff conditions and therefore require the construction of on-site water quantity controls to mitigate the peak discharge of the 10- and 100-year storm events to at or below pre-development levels.

C. Stormwater Controls:

Post-development peak runoff for the 10- and 100-year storm events is mitigated by the proposed stormwater facilities. No additional detention or retention measures are required.

To facilitate the proposed drainage improvements a new concrete catch basin is proposed at the inlet of the existing 36” CMP culvert located at Study Point A. Runoff from the onsite subsurface infiltration basin will discharge through the proposed 18” RCP culverts and connect to the proposed catch basin at the existing inlet location. A 36” CMP will be installed to convey runoff from the tributary drainage area to the new catch basin and through the existing culvert under US Route 9W.

D. Channel Protection Volume (CPv):

The required Channel Protection volume (CPv) for the development will be provided by the proposed stormwater facilities. The stormwater facilities provide a total volume of 13,836 cubic feet, or 0.318 acre-feet, of storage volume. The facilities also provide additional storage not included in this calculation. The Channel Protection volume provided by the proposed facilities exceeds the required Channel Protection volume for the development. Copies of the Channel Protection Volume calculations are included in Appendix L.

E. Pre-Development / Post-Development Analysis:

The overall impact of the proposed development, including the proposed stormwater treatment and detention facilities, is summarized in the following chart:

| Table 8: Resulting Peak Flow Comparison | | | |
|--|---------------|----------------|-----------------|
| <i>Study Point A</i> | <i>1-Year</i> | <i>10-Year</i> | <i>100-Year</i> |
| Pre- | 9.09 | 24.02 | 49.64 |
| Post- | 8.57 | 22.08 | 47.35 |
| Result | -0.52 | -1.94 | -2.29 |
| <i>Study Point B</i> | <i>1-Year</i> | <i>10-Year</i> | <i>100-Year</i> |
| Pre- | 2.03 | 5.27 | 10.91 |
| Post- | 1.57 | 4.06 | 8.35 |
| Result: | -0.46 | -1.21 | -2.56 |

IX. Erosion & Sediment Controls

The proposed erosion and sediment control measures intended to be utilized on the project site have been designed in accordance with specifications of the New York State *Standards and Specifications for Erosion and Sediment Control*, November 2016 edition and the requirements of the General Permit (GP 0-20-001). The Owner/Operator shall be responsible



for ensuring that the specified erosion and sediment control measures are installed, maintained, relocated, and amended as necessary during construction.

A. Control Practices:

Details and locations of the proposed erosion and sediment controls are provided on the site plan. Additional control measures may be necessary depending on site conditions. Descriptions of the practices are provided below.

1. Check Dams:

Stone check dams shall be installed to reduce the velocity of stormwater runoff. Check dams shall be installed to the crest of the downslope dam is at the same elevation as the top of the upslope dam. Check dams will consist of 2-inch to 9-inch diameter crushed stone on top of filter fabric. The center of the check dam shall be notched to allow overflow. Stone shall extend a minimum of 18-inches beyond the edge of the channel. Proper installation and implementation of the check dams is necessary to prevent runoff bypass.

2. Dust Control:

Water trucks shall be used as needed during summer months or times of dry weather to reduce dust generation.

3. Permanent & Temporary Seeding:

Soil stabilization measures shall be implemented as soon as practicable in portions of the site where construction areas have temporarily or permanently ceased. In no case shall bare soil areas remain un-vegetated or un-stabilized for more than fourteen (14) days after construction activity in that portion of the site has temporarily or permanently ceased.

4. Sediment Traps:

Sediment traps shall be installed to intercept sediment laden runoff from disturbed areas of the site to prevent transportation of sediment. All concentrated flows shall be directed to sediment traps, utilizing temporary diversion swales where necessary. Sediment traps shall be sized to contain 3,600 cubic feet of storage volume per tributary acre of land.

5. Silt Fence:

Silt fence shall be installed downslope of all disturbed areas. Silt fence shall be installed parallel to the existing slope and must be properly embedded. Additional or extended silt fencing may be required depending on the specific areas of disturbance. An overlap of six (6) inches minimum is required where two sections of fence adjoin.

6. Soil Stockpiling:

Topsoil and suitable subsoil from the site shall be stockpiled for use in final grading and stabilization. Silt fence shall be installed around the perimeter of the stockpile to prevent sediment washout. Stockpiles shall be temporarily stabilized once established.



7. Stabilized Construction Entrance:

A temporary stabilized construction entrance shall be installed at each proposed point of access in order to prevent transportation of mud, dirt, and dust onto the adjacent public right-of-way. The construction entrance shall consist of two (2) inch crushed stone or recycled concrete equivalent with a minimum depth of six (6) inches on top of filter fabric. Construction entrances shall extend a minimum of fifty (50) feet from the edge of the public road. The construction entrance shall have a minimum width of twelve (12) feet, unless there is only a single point of access, in which case a minimum width of twenty-four (24) feet is required.

8. Temporary Diversion Swales:

Temporary diversion swales shall be utilized as necessary to divert and direct stormwater runoff during construction. Temporary swales may be required to divert upslope runoff away from areas of active site work or to direct runoff from disturbed areas into sediment traps or other erosion and sediment control devices. Temporary diversion swales shall have a minimum depth of twelve (12) inches with 3 (horizontal):1 (vertical) sides slopes. Swales shall be stabilized immediately following installation to prevent sediment transportation downslope.

9. Temporary Stabilization:

Idles disturbed areas shall be stabilized in accordance with the temporary stabilization requirements in the New York State *Standards and Specifications for Erosion and Sediment Control*, November 2016 edition. Temporary stabilization specifications include:

- Annual or perennial ryegrass seeding with straw mulching at a rate of 30-lbs per acre;
- Coarse wood chips at a rate of 500-lbs per acre; or,
- Wood fiber hydromulch, as per manufacturers specifications.

B. Maintenance Requirements:

Descriptions of the maintenance requirements for the proposed practices are provided below.

1. Check Dams:

Stone check dams shall be maintained at all times once installed. If significant erosion has occurred between structures, a stone liner or other suitable material shall be installed along that portion of the channel. Additional intermediate check dams ma

2. Dust Control:

Water shall be utilized as necessary to prevent dust from impacting adjacent properties. If excess dust is generated, it may be necessary to implement additional stabilization measures, including, but not limited to: extending the stabilized construction entrance, installing crushed stone or gravel along main access routes, and/or supplementing temporarily stabilization with multiple techniques.



3. Permanent & Temporary Seeding:

Temporarily stabilized areas shall be monitored to ensure proper cover is maintained. Supplemental seeding or the incorporation of additional measures may be necessary if adequate stabilization cannot be maintained.

4. Sediment Traps:

Sediment shall be removed whenever it has accumulated to 50% of the design depth of the trap, and the trap shall be restored to its original dimensions. Sediment removed from the trap shall be deposited in an area protected by silt fencing and immediately stabilized to prevent erosion.

5. Silt Fence:

Silt fence shall be monitored for bulges, tears, or other degradation. Sediment shall be removed before any bulges in the fabric form. Damaged portions of the fabric shall be replaced. Broken posts shall be repaired or replaced.

6. Soil Stockpiling:

Stockpiles shall be inspected periodically to ensure no scouring or sediment transfer is occurring beyond the limits of the perimeter silt fencing. Temporary stabilization measure shall be performed on the remaining stockpile whenever a portion of the material is utilized during construction or whenever additional soil is added.

7. Stabilized Construction Entrance:

The stabilized construction entrance shall be maintained to prevent tracking or flowing of sediment onto the adjacent public right-of-way. Any sediment that has been tracked, washed, spilled, or dropped onto the public right-of-way shall be removed immediately. Daily sweeping or washing of the paved roadway may be required.

8. Temporary Diversion Swale:

The stabilized construction entrance shall be maintained to prevent tracking or flowing of sediment onto the adjacent public right-of-way.

9. Temporary Stabilization:

Temporarily stabilized areas shall be monitored to ensure proper cover is maintained. The incorporation of additional measures may be necessary if adequate stabilization cannot be maintained.

X. Water Quality & Quantity Controls

The proposed water quality and quantity control measures intended to be utilized on the project site have been designed in accordance with the specifications of the New York State *Stormwater Design Manual*, January 2015 edition and the requirements of the General Permit (GP 0-20-001). The Owner/Operator shall be responsible for ensuring that the specified water quality and quantity control measures are installed and maintained as necessary.



A. Control Practices:

Details and locations of the proposed water quality and quantity controls are provided on the site plan. Descriptions of the practices are provided below.

1. Diversion Swales:

Diversion swales have been proposed to direct stormwater runoff to the drainage facilities. Diversion swales shall have a minimum depth of twenty-four (24) inches with 3 (horizontal):1 (vertical) sides slopes. Swales shall be stabilized immediately following installation to prevent sediment transportation downslope.

2. Outlet Structures:

An outlet structure has been proposed to control discharge from the detention basin. The primary outlet of the outlet structure consists of a fifteen (15) inch HDPE culvert. A three (3) inch orifice has been designed to drain the detention basin, with a thirty (30) inch diameter horizontal orifice acting as an overflow outlet.

3. Rock Protection:

Rock outlet protection has been proposed to dissipate energy and reduce runoff velocity within portions of the diversion swales. Rock protection will consist of crushed stone with an average stone size of nine (9) inches and a minimum depth of twelve (12) inches. The rock pad shall extend a minimum of ten (10) feet from the swale outlet, unless otherwise specified.

4. Soil Restoration:

Soil restoration is a combination of deep ripping and de-compaction that shall be applied in all disturbed areas, excluding any infiltration basins and areas of impervious cover. Soil restoration shall be performed during the landscaping phase of the project to preserve infiltrative capacity and avoid unnecessary compaction of the soils. Restored soil will have a greater infiltration rate and a thicker vegetative cover, resulting in less stormwater runoff. Soil restoration shall be completed in accordance with Table 5.3 of the Stormwater Design Manual. Soils restoration shall include the following steps:

- Apply three (3) inches, minimum, of compost over subsoil. Compost shall be aged and consist of plant-derived materials, free of weeds, seeds, water, and dust. Compost should have a suitable pH for plant growth.
- Till compost into subsoil to a minimum depth of twelve (12) inches.
- Remove all stone and rock material greater than four (4) inches in size.
- Apply six (6) inches of topsoil over all disturbed areas.
- Stabilize with vegetative cover in accordance with the design plans.

5. Subsurface Infiltration Basins:

A subsurface infiltration basin has been proposed to treat stormwater runoff from a portion of the development. The facilities will provide the necessary water quality treatment of the runoff from the tributary drainage areas. The treatment will be completed by physical and biological processes, allowing runoff to infiltrate into the subsurface soils. A catch basin with internal weir wall is provided to retain the treatment volume and provide overflow discharge. Pretreatment is provided by an



isolation row at the inlet row of each facility. Water quantity controls will be provided by the proposed basin and routing of the post-construction runoff.

B. Maintenance Requirements:

Descriptions of the maintenance requirements for the proposed practices are provided below.

1. Diversion Swales:

Diversion swales shall be inspected regularly to ensure proper function. Particular attention shall be given to evidence of scouring along the bottom of the swale and the accumulation of sediment. Any and all debris shall be removed during mowing operations. The swale and embankment shall be mowed on a semi-annual basis. Any scouring or erosion of previously stabilized areas shall be repaired and immediately stabilized on an annual basis.

2. Outlet Structures:

Outlet structures shall be inspected regularly to ensure the devices are properly functioning. Any and all debris located within the basins shall be removed during inspection. Special attention should be given to the outlet pipe to ensure proper discharge.

3. Rock Protection:

Rock protection areas shall be inspected regularly for evidence of erosion or sediment transfer. Any and all debris shall be removed during the course of the inspection. The rock pad shall be cleaned and repaired or replaced whenever more than one (1) inch of sediment has accumulated on the surface of the stone. Accumulated sediment at the outlet is indicative of scouring or erosion occurring upslope. If sediment accumulation is evident at the rock protection area, a thorough inspection of the upslope drainage system should be completed to determine the cause.

4. Soil Restoration:

Vegetated areas shall be inspected regularly for evidence of erosion or scouring. Bare or eroded areas shall be repaired and reseeded to establish a stabilized vegetative cover. Vegetated areas shall be mowed on a semi-annual basis and shall be kept clear of vehicular and foot traffic.

5. Subsurface Infiltration Basins:

Infiltration basins shall be inspected regularly to ensure the devices are properly functioning. Particular attention shall be given to clogging of devices, evidence of erosion, accumulation of sediment. Any and all debris located within the inlet catch basins shall be removed during inspection. Special attention should be given to the outlet structure to ensure proper function. The areas around the basin shall be mowed, at a minimum, on a semi-annual basis. Any scouring or erosion of previously stabilized areas shall be repaired on an annual basis.

XI. Construction Sequence

The disturbance associated with the proposed project is approximately 2.51 acres.



The proposed development shall be constructed in accordance with the following sequence. During the course of construction, it may become necessary to amend, alter, or otherwise change the order of work to accommodate existing site conditions or specific issues that develop. Any alteration to the sequence of construction shall be reviewed and approved by the SWPPP preparer or design engineer and appropriate changes to the SWPPP shall be made and implemented in the field. The sequence of construction is as follows:

1. Hold a pre-construction meeting with the site contractors, design engineer, and, as necessary, permitting authorities to review the proposed site work and construction sequence. Identify the Trained Contractor(s) and Qualified Inspector responsible for the SWPPP inspections.
2. Install the temporary erosion and sediment control devices associated with the proposed disturbance (stabilized construction entrance, check dams, silt fence)
3. Complete site clearing and rough grading associated with the proposed disturbance. Stockpile topsoil and subsoil for final grading and stabilization. Install silt fencing around stockpiles and temporarily stabilize. *Do not complete final installation of stormwater facilities at this time.*
4. Excavate the temporary sediment traps associated with the current phase of disturbance and immediately stabilize. Direct all runoff from disturbed areas to the sediment trap during construction, utilizing temporary diversion swales with check dams where necessary.
5. Install gravel subbase along access drive and parking areas.
6. Perform soil restoration in the area of disturbance. All non-impervious disturbed areas shall be adequately stabilized with sod; topsoil, seed, & hay; or landscaping mulch.
7. Begin construction of proposed building and associated utilities.
8. Install base course pavement along access drive and parking areas.
9. After all disturbed areas are stabilized, all temporary erosion and sediment control devices (silt fence, check dams) shall be removed.
10. Once all tributary areas have been stabilized construct the proposed stormwater facilities in accordance with plan specifications.
11. Install top course pavement along access drive and parking areas.
12. When all disturbed areas reach final stabilization (as defined in GP 0-20-001), the Notice of Termination (NOT) may be filed in accordance with permit specifications.



XII. Inspections, Reporting, & Maintenance

The Owner/Operator shall be responsible for ensuring that the specified control measures identified in Sections X and X of this report are installed, inspected, and maintained during construction. The Owner/Operator shall ensure a Trained Contractor responsible for implementing and maintaining the SWPPP is identified and available on-site any time soil disturbance activities are occurring. Additionally, the Owner/Operator shall have a Qualified Inspector perform inspections of the ongoing construction activities.

A. Inspection Requirements:

Prior to the start of construction, the Qualified Inspector shall complete an initial site assessment to document pre-development conditions and identify any potential areas of concern. The inspection shall also verify all necessary erosion and sediment control devices have been installed and properly implemented prior to land disturbance activities occurring on the site. Following the commencement of construction, site inspections shall be conducted by the Qualified Inspector at least once every seven (7) calendar days.

Inspections shall include all areas of the site disturbed by construction activity and exposed to precipitation. The inspector must look for evidence of, or potential for, pollutants entering the stormwater system, specifically the transportation of sediment through scouring, erosion, or tracking. The post-construction water quality and quantity controls being constructed shall also be inspected for compliance with the design plans.

The Qualified Inspector shall perform a final site inspection to certify that all temporary erosion and sediment control measures have been removed, all post-construction water quality and quantity controls have been constructed in accordance with the design plans, and all disturbed areas have reached final stabilization in accordance with the permit specifications.

B. Reporting Requirements:

For each inspection, the Qualified Inspector shall prepare a written report in accordance with Part IV.C.4 of the General Permit. The report shall include a summary of the existing site conditions, identification of any required repairs or maintenance, and summary of completed or on-going corrective actions. Reports shall include color photographs with an identifying date and shall be signed by the individual completing the inspection. Inspection reports shall be made available to the Owner/Operator and appropriate contractor(s) or subcontractor(s) within one (1) business day of the completion of the inspection.

C. Maintenance Requirements:

If deficiencies are identified during the course of inspection by the Trained Contractor or Qualified Inspector, the contractor shall begin implementing corrective measures within one (1) business day of being notified of the issue(s) and shall complete the corrective actions within a reasonable amount of time as determined by the scope of the issue.

D. Post-Construction Records:

Following the completion of construction, the Owner/Operator shall be responsible for maintaining a copy of the NOI, MS4 Acceptance Form, NOI Acknowledgement, SWPPP,



inspection reports, and other associated documentation pertaining to the authorization of coverage under the General Permit for a period of five (5) years from the date a completed Notice of Termination (NOT) is submitted to NYSDEC for the termination of permit coverage.

XIII. Spill Prevention & Prohibited Discharges

All construction personnel shall be instructed regarding spill prevention practices and procedures. The site superintendent shall inspect any storage areas daily to ensure proper use and disposal of materials on the project site. In the event of a spill or emergence, contact the NYSDEC Emergency Response Hotline at 1-800-457-7362.

A. Practices & Procedures:

Specific prevention and control measures on the site will be employed as follows:

1. Concrete Trucks:

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water within 100-feet of a wetland or into previously installed catch basins or stormwater basins. All concrete washout facilities shall be inspected daily. Damaged or leaking facilities shall be deactivated and repaired or replaced immediately. Accumulated material shall be removed when 75% of the storage capacity of the structure is filled. Plastic liners shall be replaced with each cleaning. Hardened material shall be disposed of off-site or buried on-site and covered with a minimum of two (2) feet of clean, compacted earth fill. Concrete discharge shall only be permitted in designated areas.

2. Debris & Litter Control:

The contractor shall provide covered dumpsters onsite. Debris and litter shall be removed from the site and placed in the on-site dumpsters at least once every seven (7) calendar days. Dumpsters shall be emptied regularly by a licensed contractor to prevent overflowing and unsightly conditions and disposed of in accordance with federal, state, and local environmental regulations. All construction waste shall be placed in dumpsters following the completion of construction. No trash or construction waster will be buried onsite. No construction materials shall be stored on-site, except for those to be used for construction taking place within seven (7) calendar days.

3. Fertilizers:

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, the fertilizer will be worked into the soil to limits exposure to stormwater. Storage will be in a covered shed, and the contents of any partially used bags will be transferred into a sealable, plastic bin to avoid spills. No fertilizer storage will occur within 100-feet of a wetland, pond, stream, or other watercourse.



4. Petroleum Products:

All on-site vehicles will be monitored for leaks and will receive preventive maintenance to reduce the chance of leakage. No vehicle maintenance, handling, or storage of petroleum products will occur within 100 feet of a wetland or waterway. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Any asphalt substances used on-site will be applied according to manufacturer's recommendations.

5. Solvents, Paints, and Other Hazardous Substances:

All containers will be tightly sealed and stored when not required for use. Excess materials will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and local regulations. No storage will occur within 100-feet of a wetland, pond, stream, or other watercourse.

B. Prohibited Discharges:

In accordance with Part I.B.1.e of the SPDES General Permit, the following discharges are prohibited:

- Wastewater from washout of concrete;
- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
- Soaps or solvents used in vehicle and equipment washing; and,
- Toxic or hazardous substances from a spill or other release.

XIV. Termination of Permit Coverage

In accordance with Part V.A.2.a of the General Permit, the Owner/Operator shall be eligible to terminate permit coverage only when the following conditions have been met:

- All of the construction activity identified in the SWPPP has been completed;
- All disturbed areas have achieved final stabilization;
- All temporary erosion and sediment control measures have been removed; and,
- All post-construction stormwater management practices have been constructed in accordance with the SWPPP.

Coverage may also be terminated if the site has reached partial project completion or a new Owner/Operator obtains permit coverage in accordance with Part A of the General Permit. When the project site has met the requirements listed above a Notice of Termination (NOT) may be prepared for submittal to the NYSDEC Bureau of Water Permits.

The NOT shall include certification from the Qualified Inspector that all temporary erosion and sediment control measures have been removed, all post-construction stormwater management practice have been constructed, and all disturbed areas have achieved final stabilization. A certification by the principal executive officer from the MS4, or by a duly authorized representative of that person, that it is acceptable to submit the NOT is also required.



In accordance with the current General Permit, *final stabilization* is defined as a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious area. Other equivalent stabilization measures include permanent landscape mulches, rock rip-rap or washed/crushed stone, permanent structures, and concrete, pavement, or other impervious cover.

A copy of the Notice of Termination (NOT) is included in Appendix B.



Appendix A:
SPDES General Permit
(GP 0-20-001)



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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

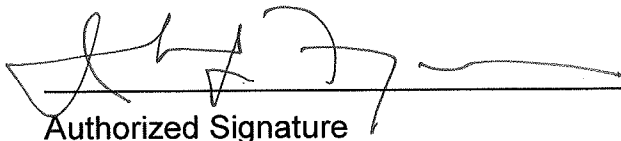
Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator



Authorized Signature

1-23-20

Date

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

PREFACE

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

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

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

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

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

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

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;
2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants to surface waters of the State*.
3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

Discharges 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 discharges*;
 - (ii) Control stormwater *discharges*, 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 *discharges* from the site;
 - (vi) Provide and maintain *natural buffers* around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharges*, 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.** *Discharges* from *dewatering* activities, including *discharges* 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 *discharges* 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 *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.

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 *discharges* 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 *discharges* 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 *discharges* 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 *discharges* 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 *discharges*; 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 *discharges* 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. *Discharges* after *construction activities* have been completed and the site has undergone *final stabilization*;
2. *Discharges* 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 *discharges* 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 *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
 - b. Which are undertaken on land with no existing *impervious cover*; and
 - c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase “D” (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase “E” or “F” (regardless of the map unit name), or a combination of the three designations.

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:
- a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.
 - 1-5 acres of disturbance - 20 feet
 - 5-20 acres of disturbance - 50 feet
 - 20+ acres of disturbance - 100 feet, or
 - b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
 - (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
 - (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
 - (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
 - (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or
 - c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

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

d. Documentation that:

- (i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.
9. *Discharges from construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.
2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the “MS4 SWPPP Acceptance” form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.
3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of Owner or Operator) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

B. Notice of Intent (NOI) Submittal

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

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

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.
3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.
4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.
2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:
 - a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (<http://www.dec.ny.gov/>) for more information,
 - b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators of construction activities* that are required to obtain *UPA* permits

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

- c. the final SWPPP has been prepared, and
 - d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.
3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:
- a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:
 - (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or
 - (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;
 - (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

- b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:
 - (i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed “MS4 SWPPP Acceptance” form, or
 - (ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed “MS4 SWPPP Acceptance” form.
4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination (“NOT”) has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.
2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor’s or subcontractor’s certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.
3. The *owner or operator of a construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

- use control MS4, the regulated, traditional land use control MS4 (provided the regulated, traditional land use control MS4 is not the owner or operator of the construction activity). At a minimum, the owner or operator must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:*
- a. The *owner or operator* shall have a *qualified inspector* conduct **at least two** (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
 - b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.
 - c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
 - d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.
 - e. The *owner or operator* shall include the requirements above in their SWPPP.
4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..
 5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.
 6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

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

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

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

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

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4*, the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.
2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.
3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

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

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.
2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.
3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.
4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:
 - a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

- b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;
 - c. to address issues or deficiencies identified during an inspection by the *qualified inspector*, the Department or other regulatory authority; and
 - d. to document the final construction conditions.
5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.
6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

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

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

the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *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"

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

- I. 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 sources*. 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 sources*, 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

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| <p>The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:</p> <ul style="list-style-type: none">• Single family home <u>not</u> located in one of the watersheds listed in Appendix C or <u>not directly discharging</u> 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 <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E• Construction of a barn or other <i>agricultural building</i>, silo, stock yard or pen. |
| <p>The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:</p> <p>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.</p> |
| <p>The following construction activities that involve soil disturbances of one (1) or more acres of land:</p> <ul style="list-style-type: none">• 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

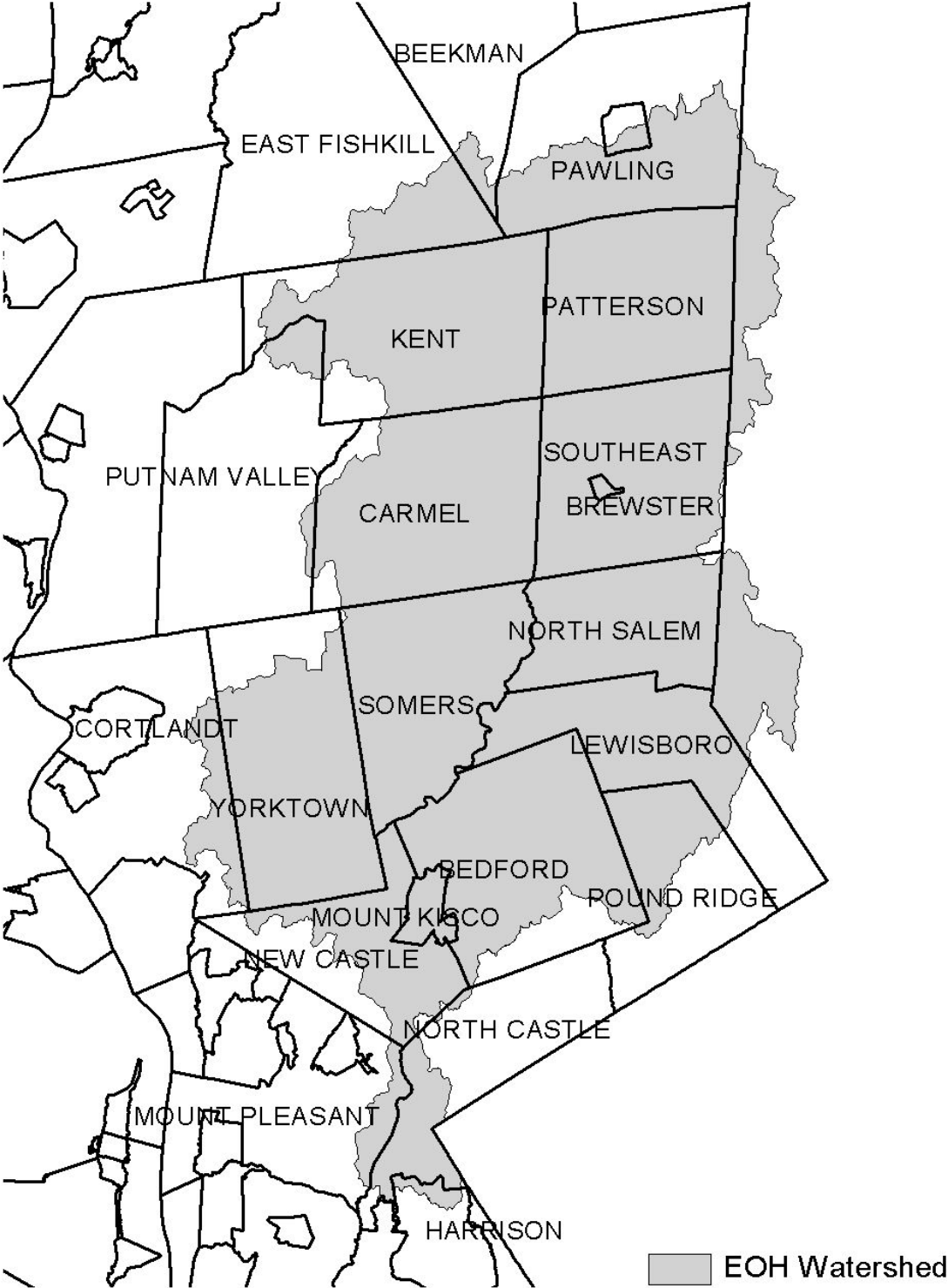


Figure 2 - Onondaga Lake Watershed



Figure 3 - Greenwood Lake Watershed



Figure 4 - Oscawana Lake Watershed

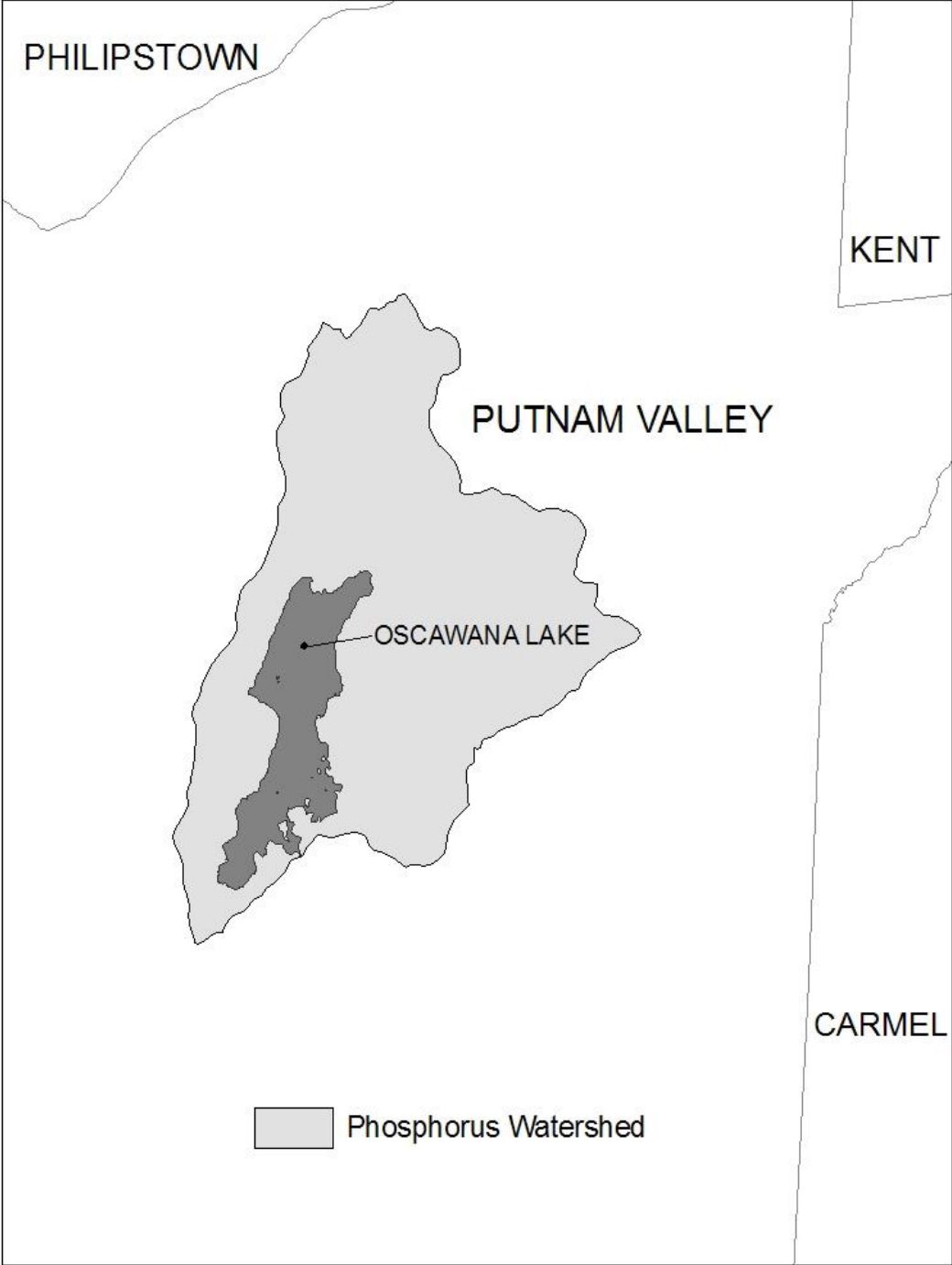
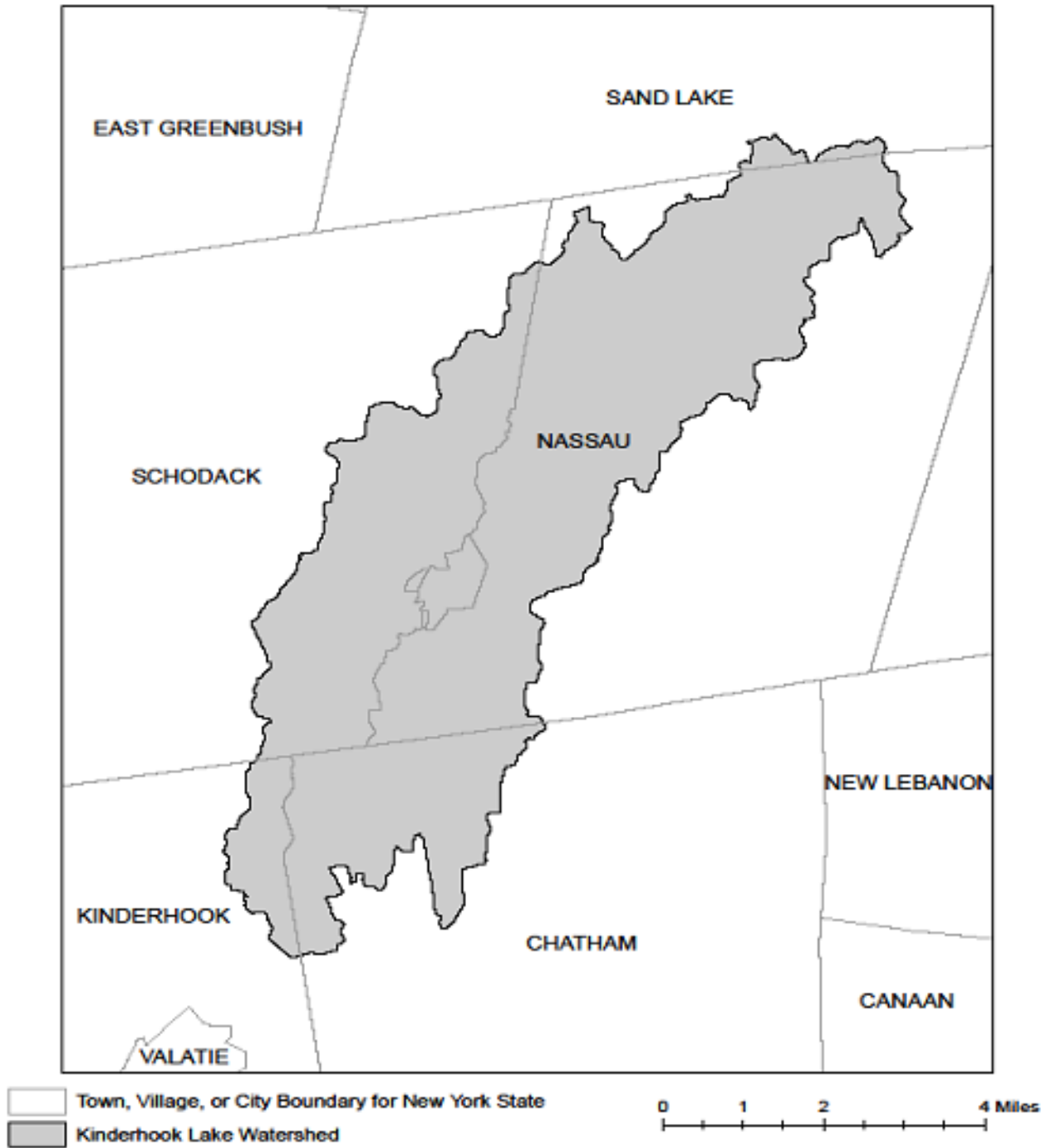


Figure 5 - Kinderhook Lake Watershed



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 |

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

| | | |
|------------|---|---------------|
| 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

| <u>Region</u> | <u>COVERING THE FOLLOWING COUNTIES:</u> | <u>DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS</u> | <u>DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM</u> |
|---------------|--|--|--|
| 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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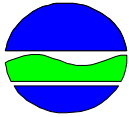
Appendix B:
Permit Authorization Forms



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NOTICE OF INTENT



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

NYR
(For DEC use only)

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

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

Owner/Operator Contact Person First Name

Owner/Operator Mailing Address

City

State Zip -

Phone (Owner/Operator) - - Fax (Owner/Operator) - -

Email (Owner/Operator)

FED TAX ID - (not required for individuals)

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

| | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
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|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

**Post-Development
Future Land Use**

- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- 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

Number of Lots

| | | |
|--|--|--|
| | | |
|--|--|--|

| | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
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|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

***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 | | | | | | | | | | | | | | | | | | | | |
|--|----------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
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| | | | | | | | | | | | | | | | | | | | | | | | |

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.

| | | | | | | | | | | | | | | | |
|---|--|--|--|---|--|--|--|---|--|--|--|---|--|--|--|
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7. Is this a phased project? Yes No

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

| | | | |
|-------------------|---|-----------------|---|
| Start Date | | End Date | |
| | / | | / |
| | / | | / |
| | | - | |
| | / | | / |
| | / | | / |

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

Name [Grid]

[Grid]

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)

[Grid]

[Grid]

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? [Grid]

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?

Two rows of empty grid boxes for text entry.

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

[Empty grid box for other details]

SWPPP Preparer

[Empty grid box for SWPPP Preparer name]

Contact Name (Last, Space, First)

[Empty grid box for Contact Name]

Mailing Address

[Empty grid box for Mailing Address]

City

[Empty grid box for City]

State Zip

[Empty grid boxes for State and Zip]

Phone

[Empty grid boxes for Phone number]

Fax

[Empty grid boxes for Fax number]

Email

[Empty grid boxes for Email address]

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

[Empty grid box for First Name]

MI

[Empty grid box for MI]

Last Name

[Empty grid box for Last Name]

Signature

[Empty box for Signature]

Date

[Empty grid boxes for Date]

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

. 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)

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

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

| <u>Alternative SMP</u> | <u>Total Contributing Impervious Area(acres)</u> | | | |
|--|--|--|--|--|
| <input type="radio"/> Hydrodynamic | | | | |
| <input type="radio"/> Wet Vault | | | | |
| <input type="radio"/> Media Filter | | | | |
| <input type="radio"/> Other <input style="width: 150px; height: 15px;" type="text"/> | | | | |

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

. 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

. 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

| | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|---|--|--|--|--|---|--|--|--|--|-----------|
| | | | | | | . | | | | | . | | | | | 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).

| | | | | | | | | |
|--|--|--|--|---|--|--|--|--|
| | | | | . | | | | |
|--|--|--|--|---|--|--|--|--|

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 | CPv Provided | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | . | | | | | | 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 | Post-development | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | . | | | | | | CFS | | | | | | | | | | | | | | |
| | | | | | . | | | | | | CFS | | | | | | | | | | | | | | |

Total Extreme Flood Control Criteria (Qf)

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------------|--|--|--|---|---|--|--|--|--|-----|-----|---|--|--|--|--|--|---|--|--|--|--|--|-----|
| Pre-Development | Post-development | | | | | | | | | | | | | | | | | | | | | | | | |
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SWPPP Preparer Certification Form

*SPDES General Permit for Stormwater
Discharges From Construction Activity
(GP-0-20-001)*

Project Site Information Project/Site Name

Owner/Operator Information Owner/Operator (Company Name/Private Owner/Municipality Name)

Certification Statement – SWPPP Preparer

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

MI

Last Name

Signature

Date

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Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: _____

eNOI Submission Number: _____

eNOI Submitted by: Owner/Operator SWPPP Preparer Other

Certification Statement - Owner/Operator

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.

Owner/Operator First Name

M.I. Last Name

Signature

Date

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Department of
Environmental
Conservation

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

**MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance
Form**

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information

1. Owner/Operator Name:

2. Contact Person:

3. Street Address:

4. City/State/Zip:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/State/Zip:

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information

8. SWPPP Reviewed by:

9. Title/Position:

10. Date Final SWPPP Reviewed and Accepted:

IV. Regulated MS4 Information

11. Name of MS4:

12. MS4 SPDES Permit Identification Number: NYR20A

13. Contact Person:

14. Street Address:

15. City/State/Zip:

16. Telephone Number:

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

**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:

2. Street Address:

3. City/State/Zip:

4. Contact Person:

4a. Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

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:

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Appendix C:
Contractor Certification Statement



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Contractor Certification Statement

The following certification shall be signed by each contractor and subcontractor responsible for installing, repairing, replacing, inspecting, and maintaining the erosion and sediment control practices included in this SWPPP, and the contractors and subcontractors that will be responsible for constructing the post-construction stormwater management practices included in this SWPPP.

Project: UHaul – Middle Hope
Location US Route 9W
Municipality: Town of Newburgh, Orange County

“I hereby certify under the 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/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.”

Name: _____
Title: _____
Company: _____
Address: _____

Signature: _____

Name: _____
Title: _____
Company: _____
Address: _____

Signature: _____

Name: _____
Title: _____
Company: _____
Address: _____

Signature: _____

Name: _____
Title: _____
Company: _____
Address: _____

Signature: _____

Name: _____
Title: _____
Company: _____
Address: _____

Signature: _____

Name: _____
Title: _____
Company: _____
Address: _____

Signature: _____



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Appendix D:
Project Figures



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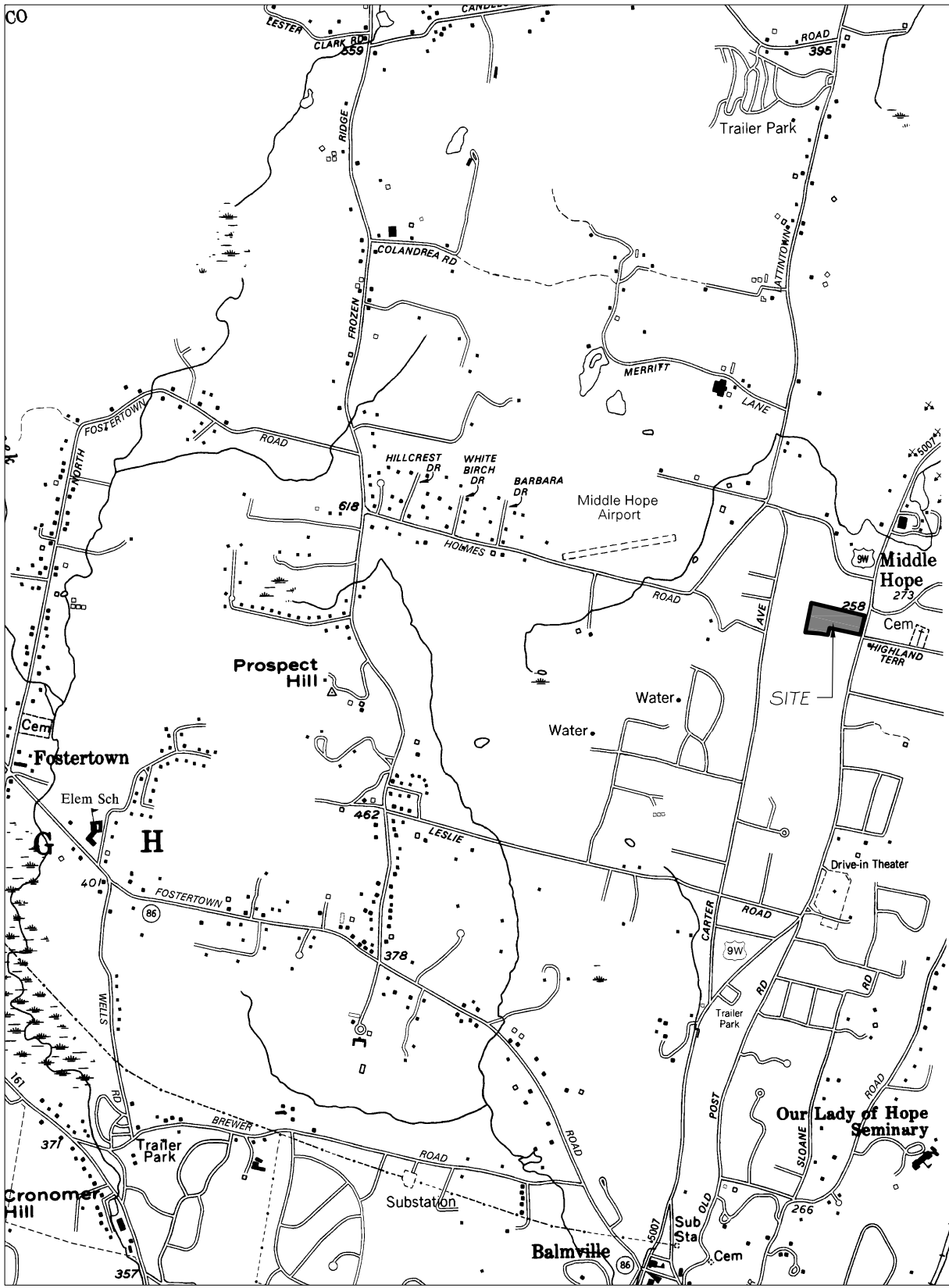
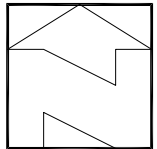


Figure 1: Site Location Map



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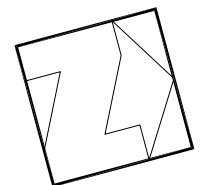




Highland Terrace

US Route 9W

Figure 2: Site Aerial Map



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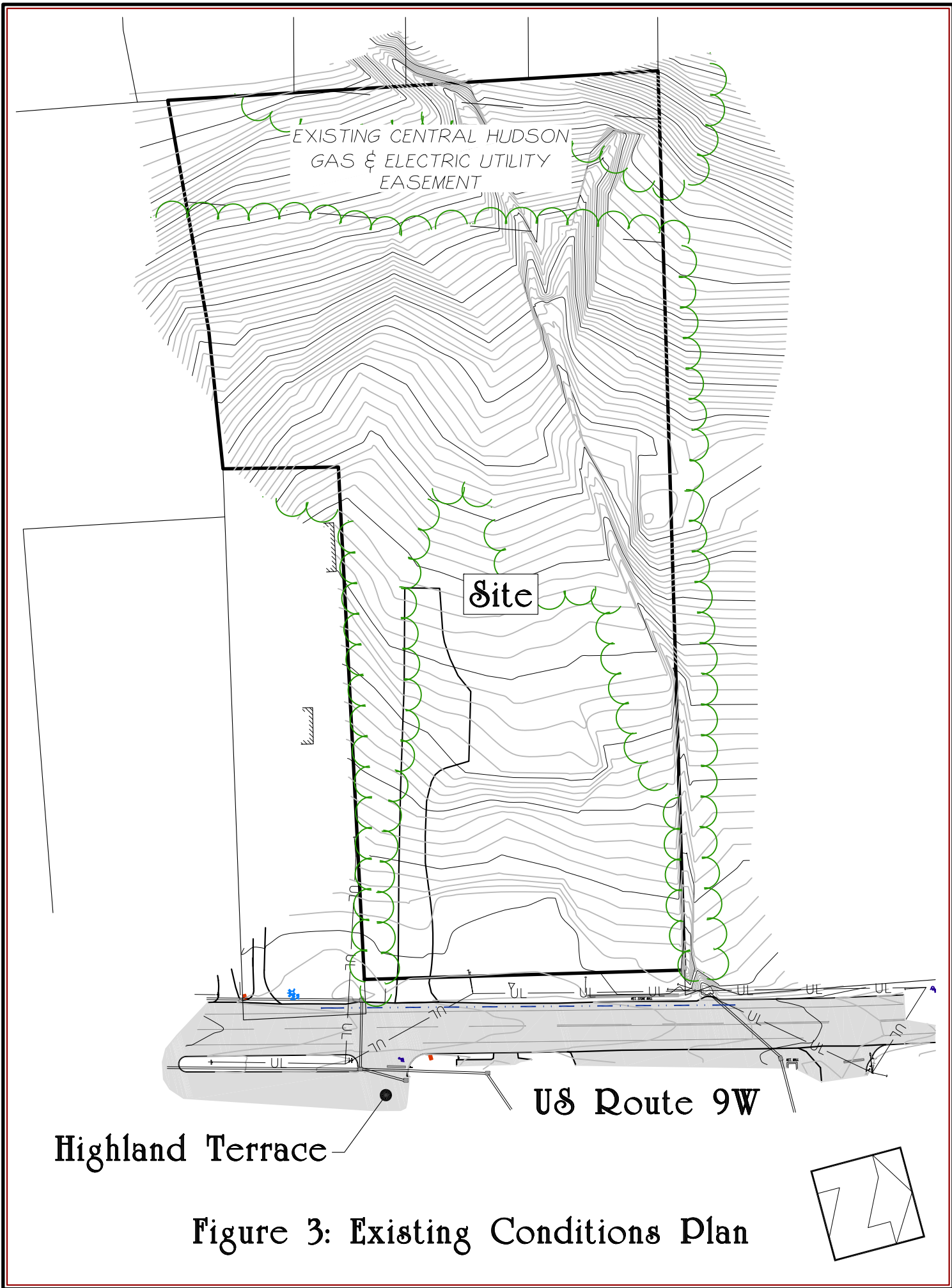
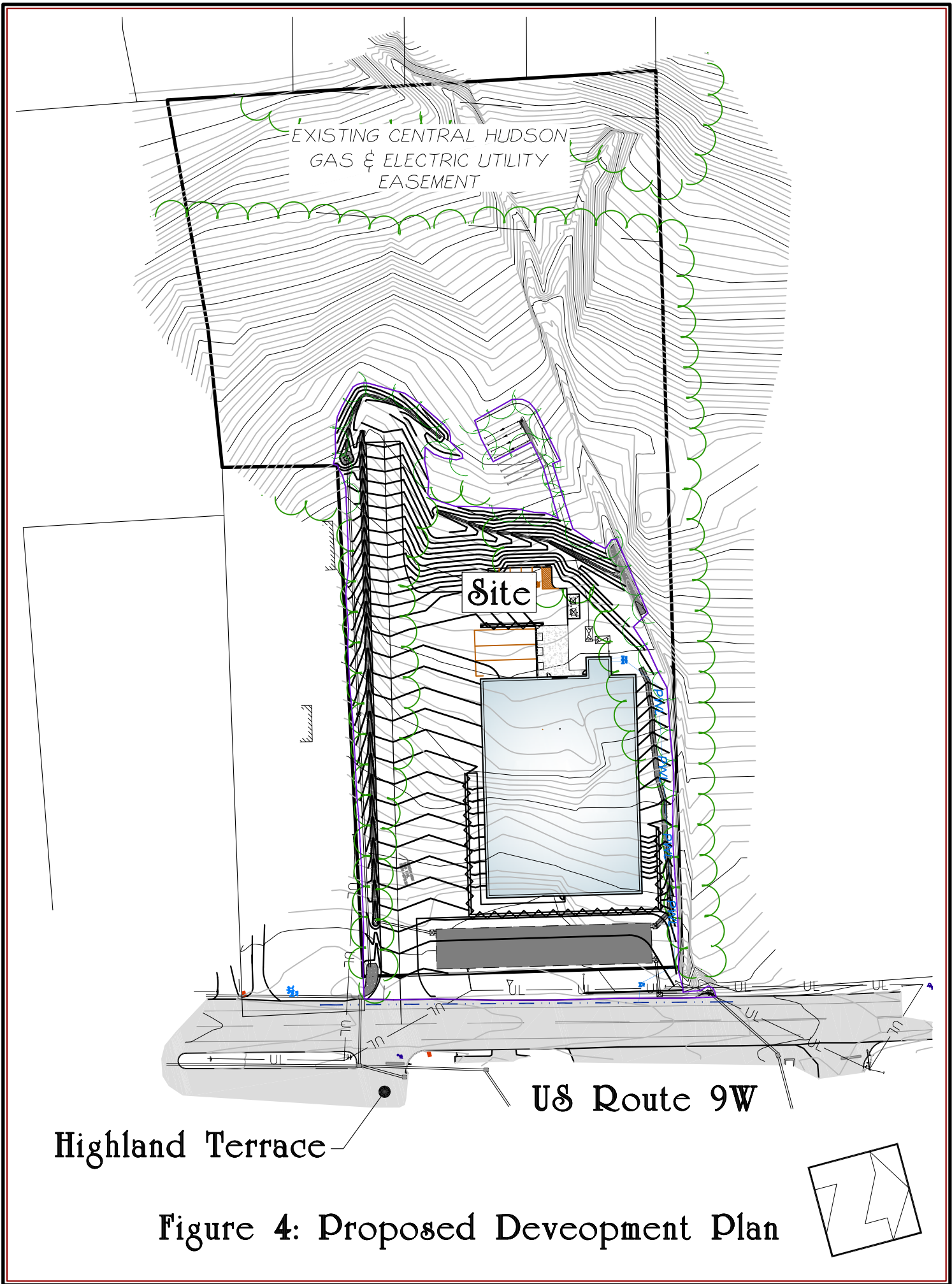


Figure 3: Existing Conditions Plan

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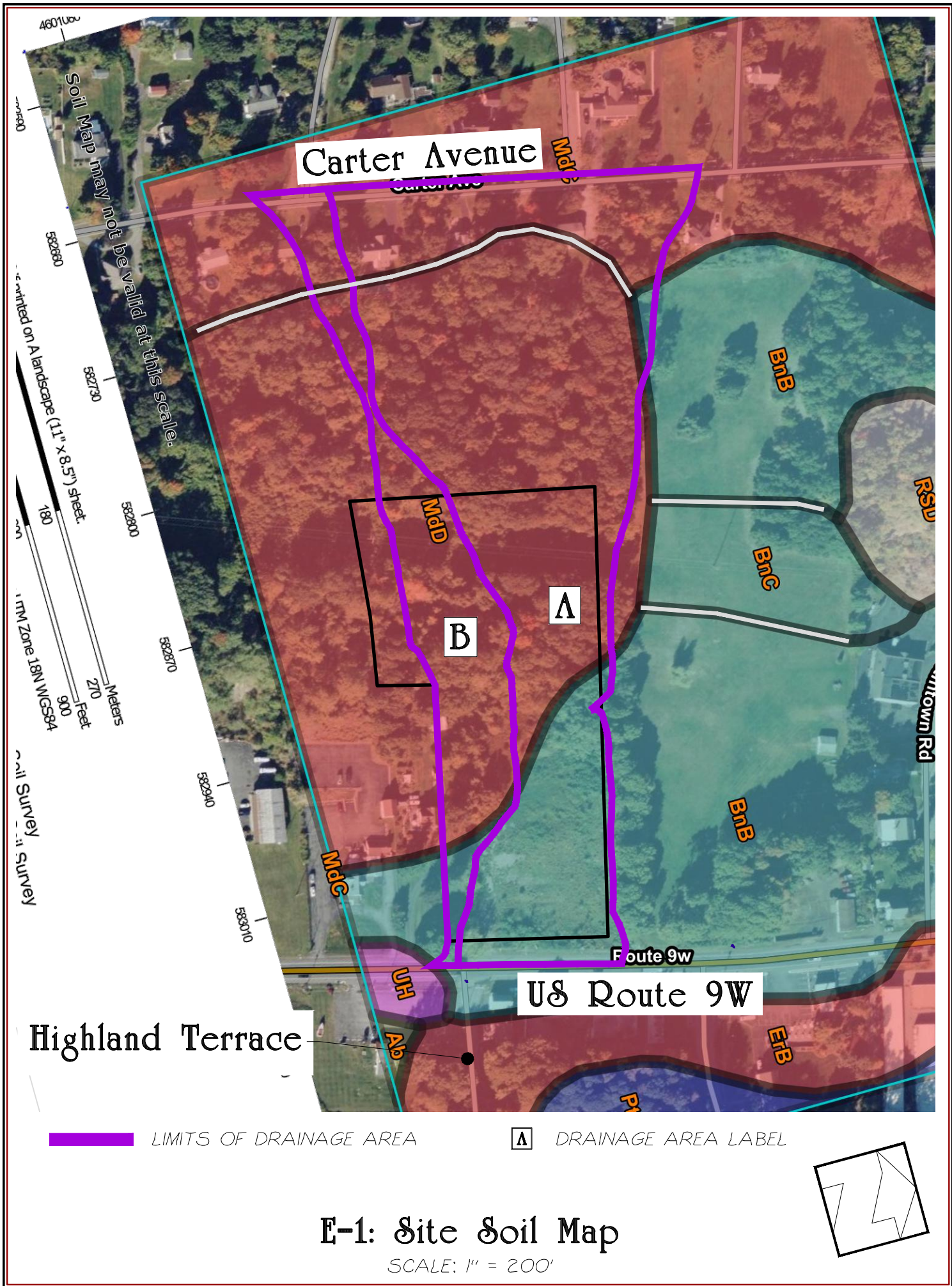


Appendix E:
Soil Survey Maps



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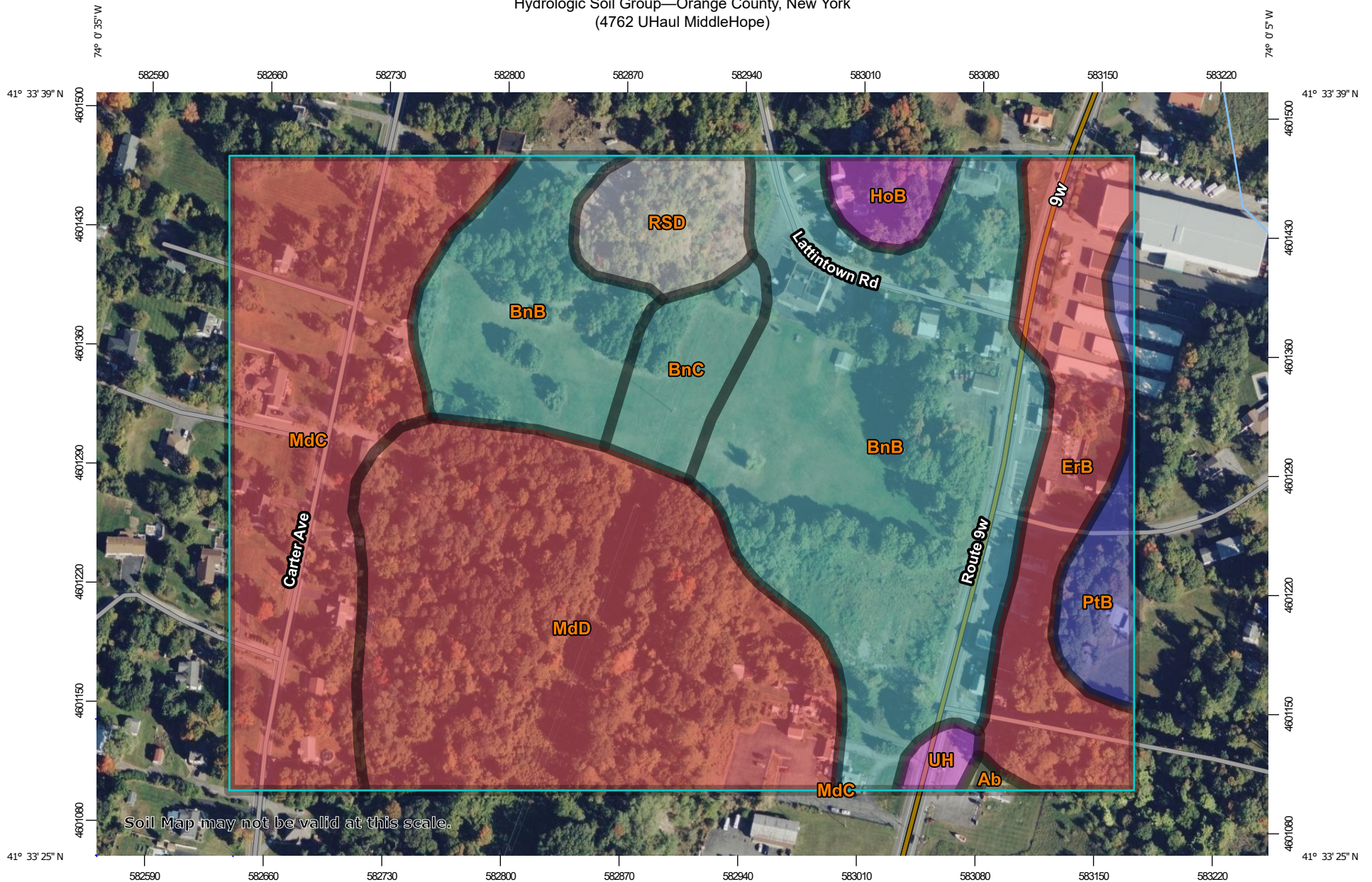




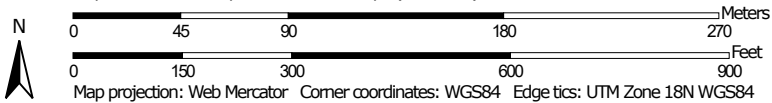
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Hydrologic Soil Group—Orange County, New York
(4762 UHaul MiddleHope)




Map Scale: 1:3,160 if printed on A landscape (11" x 8.5") sheet.



MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points






 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Orange County, New York
 Survey Area Data: Version 22, Aug 29, 2021

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

Date(s) aerial images were photographed: Oct 8, 2020—Oct 14, 2020

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

Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|---|--------|--------------|----------------|
| Ab | Alden silt loam | C/D | 0.1 | 0.2% |
| BnB | Bath-Nassau channery silt loams, 3 to 8 percent slopes | C | 16.4 | 33.2% |
| BnC | Bath-Nassau channery silt loams, 8 to 15 percent slopes | C | 1.7 | 3.4% |
| ErB | Erie gravelly silt loam, 3 to 8 percent slopes | D | 4.9 | 9.9% |
| HoB | Hoosic gravelly sandy loam, 3 to 8 percent slopes | A | 0.8 | 1.7% |
| MdC | Mardin gravelly silt loam, 8 to 15 percent slopes | D | 9.1 | 18.4% |
| MdD | Mardin gravelly silt loam, 15 to 25 percent slopes | D | 12.7 | 25.7% |
| PtB | Pittsfield gravelly loam, 3 to 8 percent slopes | B | 1.5 | 3.0% |
| RSD | Rock outcrop-Nassau complex, hilly | | 1.8 | 3.7% |
| UH | Udorthents, smoothed | A | 0.4 | 0.7% |
| Totals for Area of Interest | | | 49.4 | 100.0% |

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

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

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

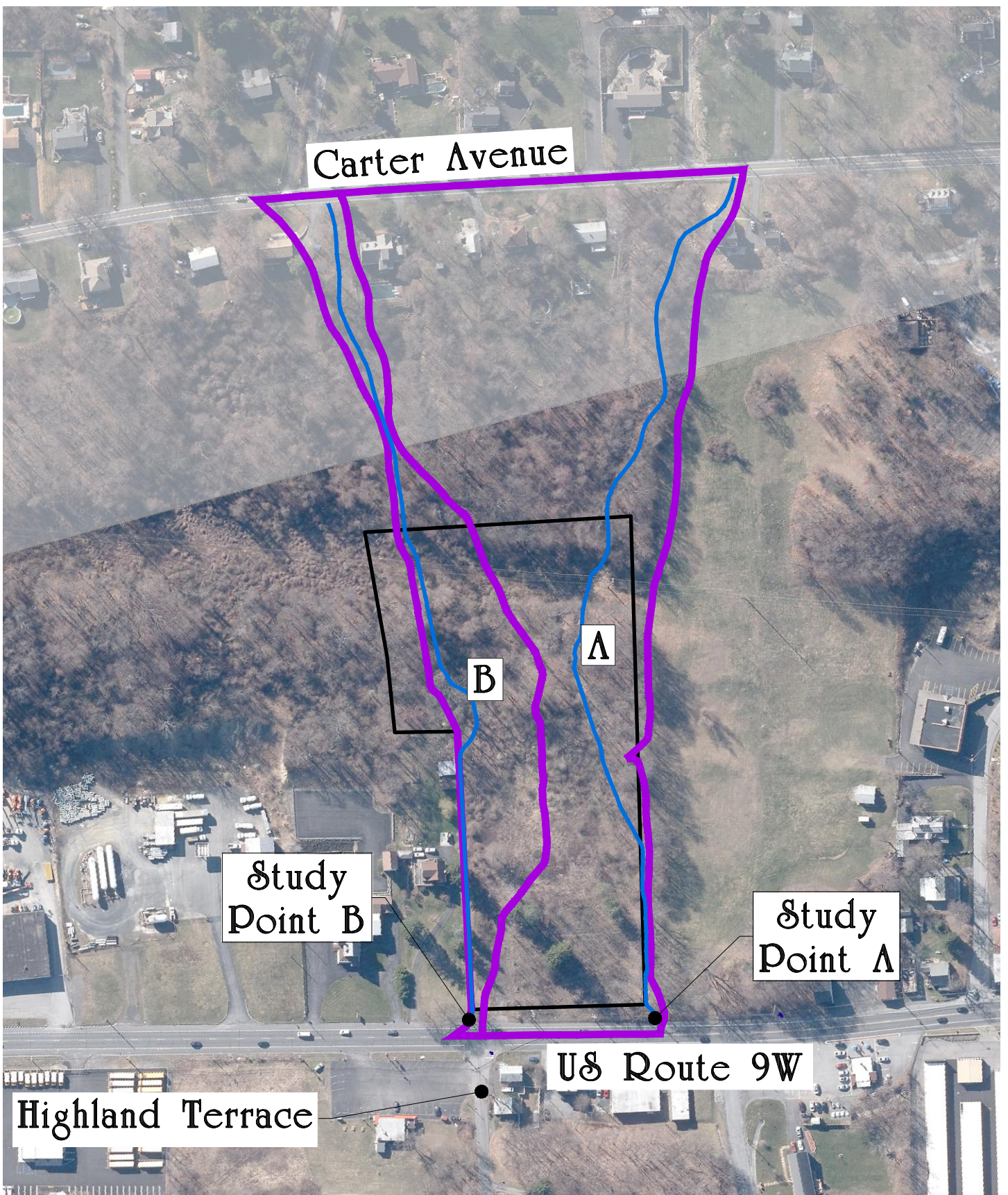
Tie-break Rule: Higher

Appendix F:
Pre-Development
Drainage Area Maps



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Carter Avenue

B

A

Study Point B

Study Point A

US Route 9W

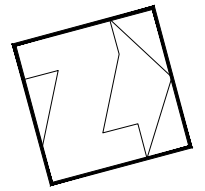
Highland Terrace

█ LIMITS OF DRAINAGE AREA
█ TIME OF CONCENTRATION

A DRAINAGE AREA LABEL

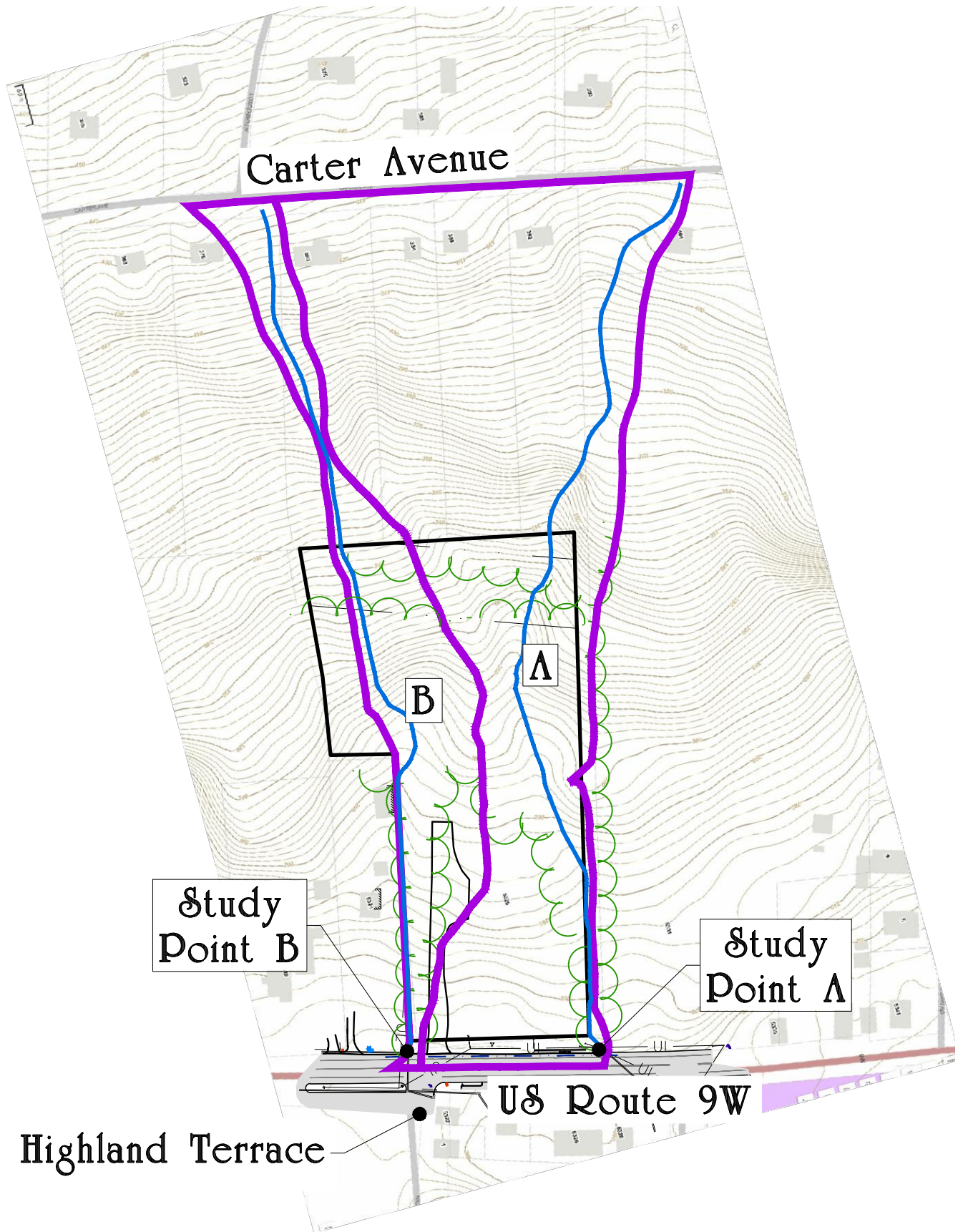
F-1: Pre-Development Aerial Map

SCALE: 1" = 200'



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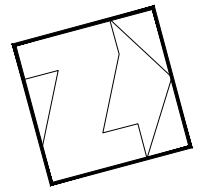


LIMITS OF DRAINAGE AREA
 TIME OF CONCENTRATION

DRAINAGE AREA LABEL

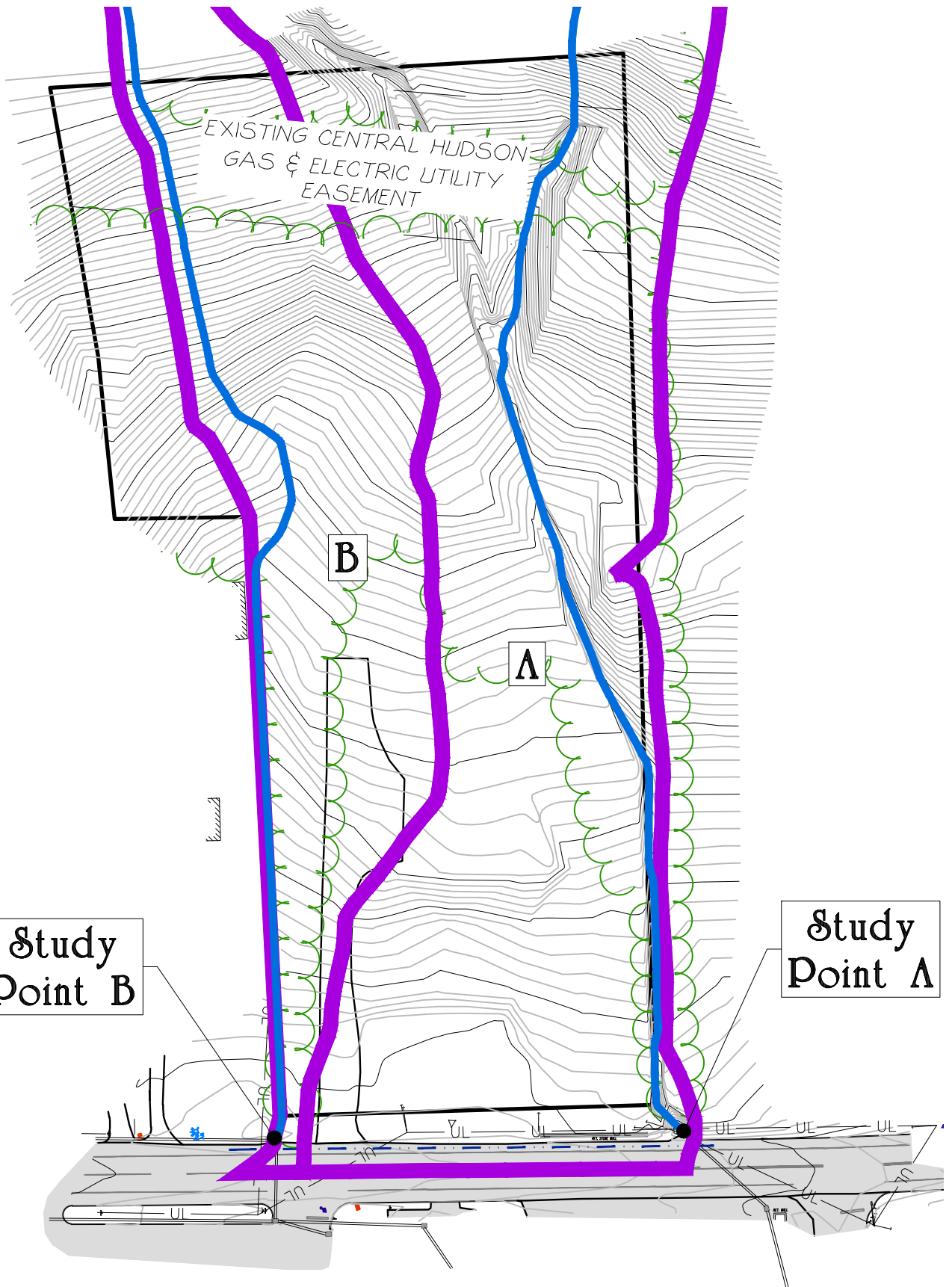
F-2: Pre-Development Topographic Map

SCALE: 1" = 200'



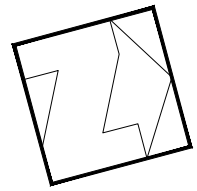
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LIMITS OF DRAINAGE AREA
 TIME OF CONCENTRATION

A DRAINAGE AREA LABEL



F-3: Pre-Development Detail Map

SCALE: 1" = 100'

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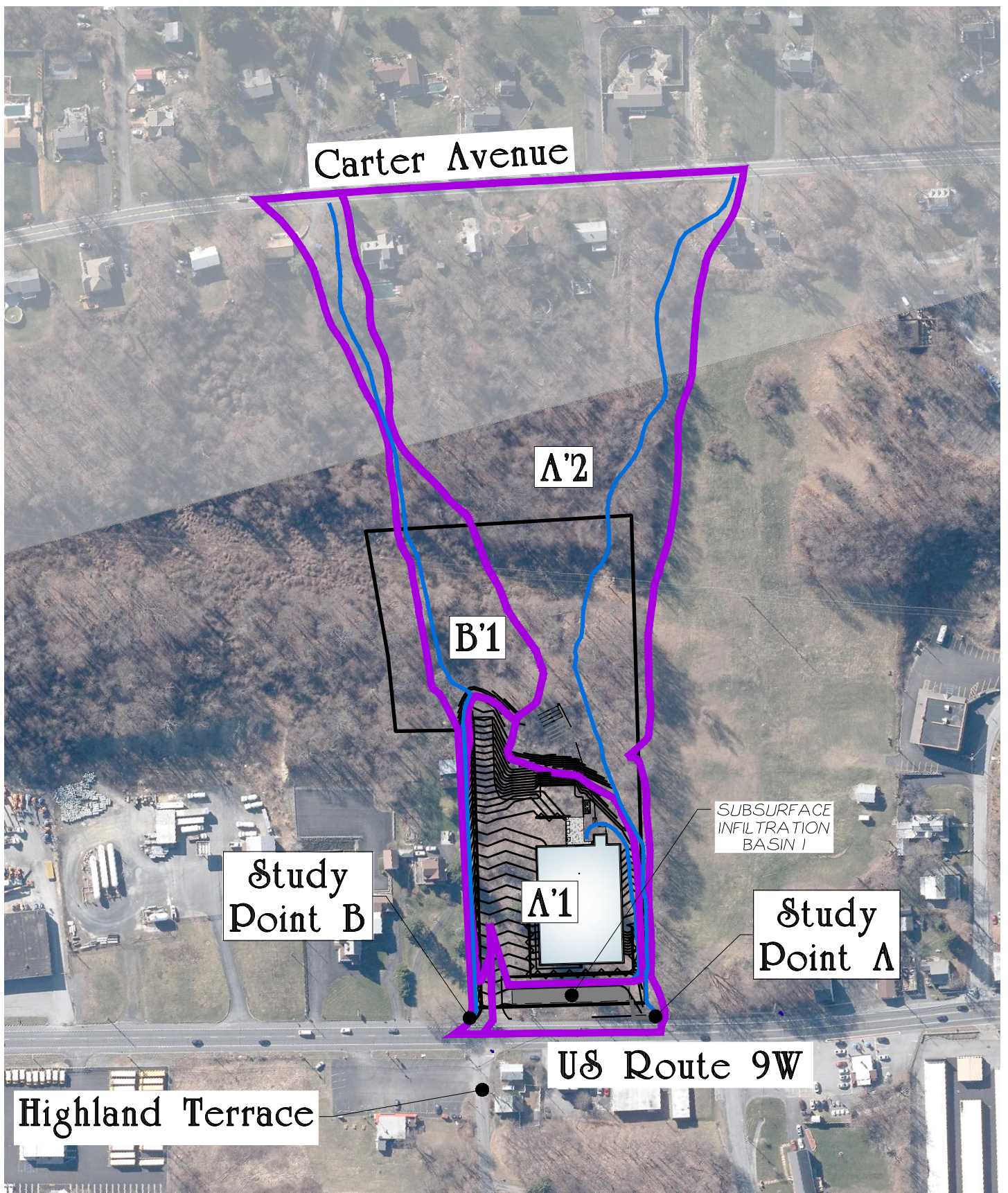


Appendix G:
**Post-Development
Drainage Area Maps**



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LIMITS OF DRAINAGE AREA
 TIME OF CONCENTRATION

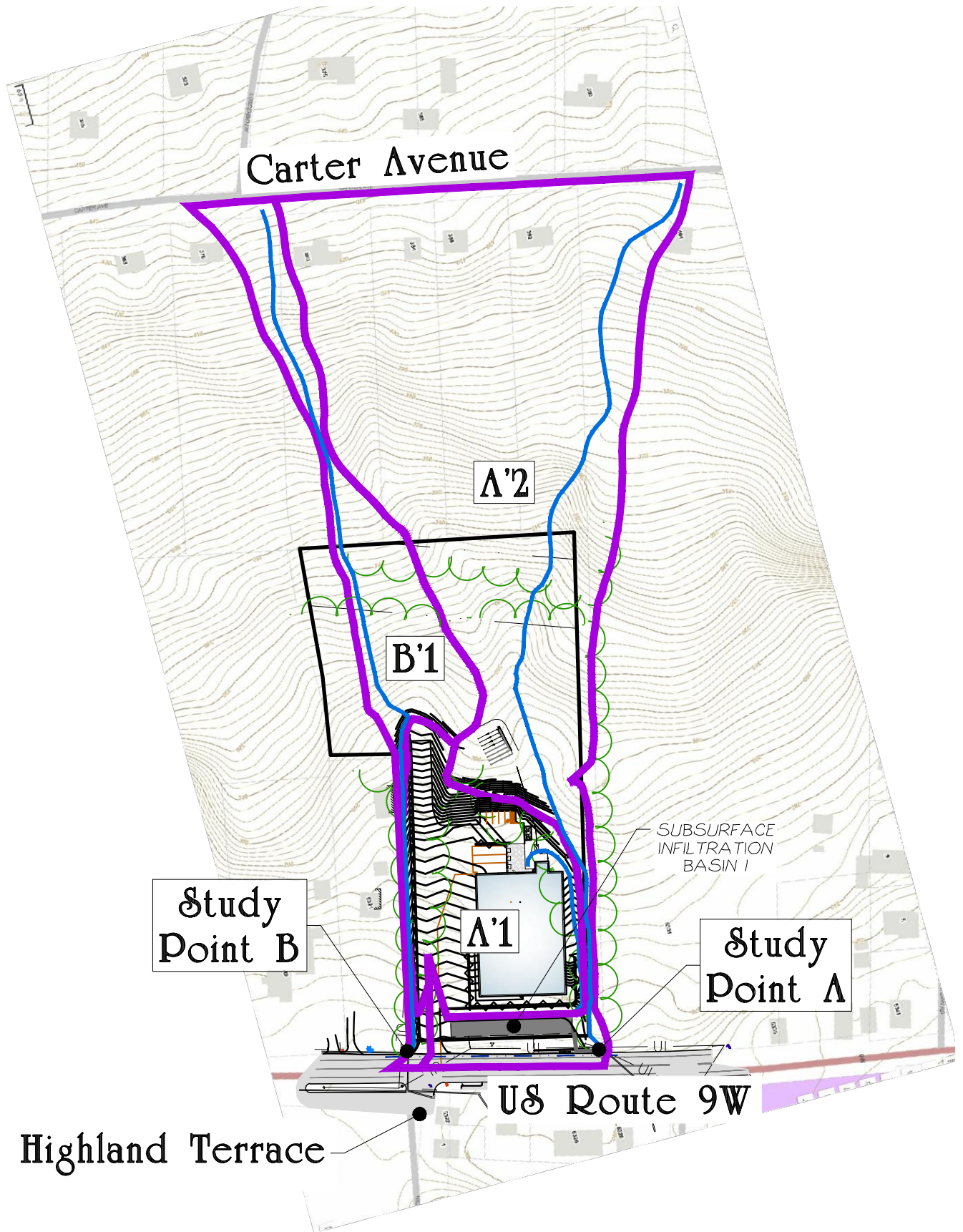
DRAINAGE AREA LABEL

G-1: Post-Development Aerial Map

SCALE: 1" = 200'

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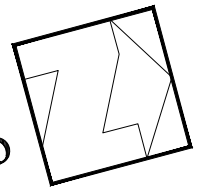




- LIMITS OF DRAINAGE AREA
- TIME OF CONCENTRATION
- DRAINAGE AREA LABEL
- REACH

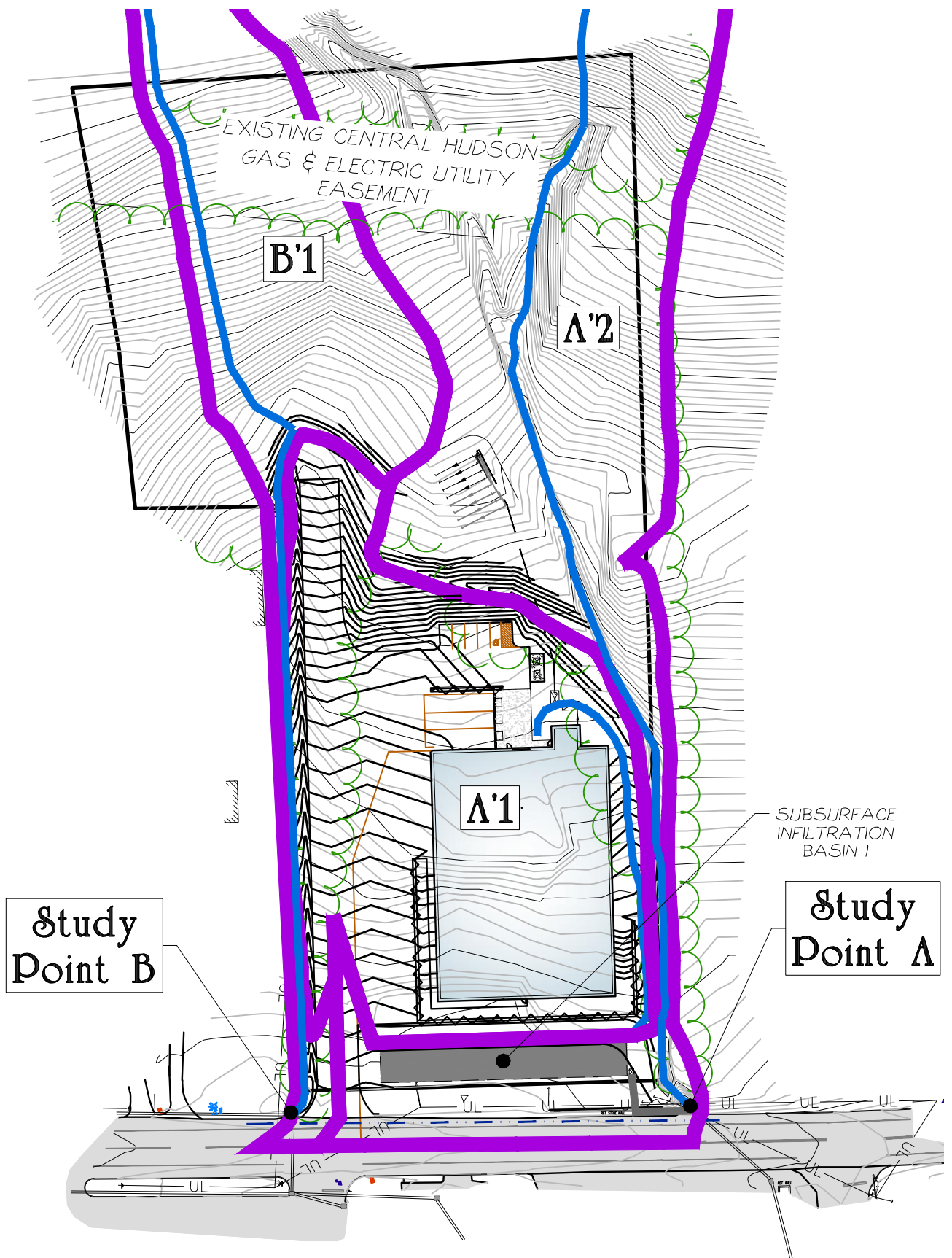
G-2: Post-Development Topographic Map

SCALE: 1" = 200'



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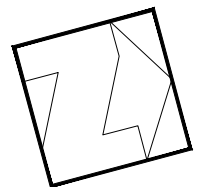




- LIMITS OF DRAINAGE AREA
- TIME OF CONCENTRATION
- DRAINAGE AREA LABEL
- REACH

G-3: Post-Development Detail Map

SCALE: 1" = 100'



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Appendix H:
NYSDEC Stormwater Worksheets



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Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....

| | | |
|---------------|------|------|
| Design Point: | Site | |
| P= | 1.40 | inch |

| Breakdown of Subcatchments | | | | | | |
|----------------------------|--------------------|-------------------------|----------------------|------|------------------------|--------------------|
| Catchment Number | Total Area (Acres) | Impervious Area (Acres) | Percent Impervious % | Rv | WQv (ft ³) | Description |
| 1 | 1.90 | 1.25 | 66% | 0.64 | 6,200 | Infiltration Basin |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| Subtotal (1-30) | 1.90 | 1.25 | 66% | 0.64 | 6,200 | Subtotal 1 |
| Total | 1.90 | 1.25 | 66% | 0.64 | 6,200 | Initial WQv |

| Identify Runoff Reduction Techniques By Area | | | |
|--|-------------------------|------------------------------|--|
| Technique | Total Contributing Area | Contributing Impervious Area | Notes |
| | (Acre) | (Acre) | |
| Conservation of Natural Areas | 0.00 | 0.00 | minimum 10,000 sf |
| Riparian Buffers | 0.00 | 0.00 | maximum contributing length 75 feet to 150 feet |
| Filter Strips | 0.00 | 0.00 | |
| Tree Planting | 0.00 | 0.00 | Up to 100 sf directly connected impervious area may be subtracted per tree |
| Total | 0.00 | 0.00 | |

| Recalculate WQv after application of Area Reduction Techniques | | | | | |
|--|--------------------|-------------------------|----------------------|-----------------------|------------------------|
| | Total Area (Acres) | Impervious Area (Acres) | Percent Impervious % | Runoff Coefficient Rv | WQv (ft ³) |
| "<<Initial WQv" | 1.90 | 1.25 | 66% | 0.64 | 6,200 |
| Subtract Area | 0.00 | 0.00 | | | |
| WQv adjusted after Area Reductions | 1.90 | 1.25 | 66% | 0.64 | 6,200 |
| Disconnection of Rooftops | | 0.00 | | | |
| Adjusted WQv after Area Reduction and Rooftop Disconnect | 1.90 | 1.25 | 66% | 0.64 | 6,200 |
| WQv reduced by Area Reduction techniques | | | | | 0 |

| Runoff Reduction Volume and Treated volumes | | | | | | |
|---|---|-------|-------------------------|------------------------------------|-------------------|-------------|
| | Runoff Reduction Techniques/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 | | |
| | 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 Basin | I-2 | 1.90 | 1.25 | 6200 | 0 |
| | Dry Well | I-3 | 0.00 | 0.00 | 0 | 0 |
| | Underground Infiltration System | I-4 | | | | |
| | Bioretention & Infiltration 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 | | | | |
| | Wet Pond (P-2) | P-2 | | | | |
| | Wet Extended Detention (P-3) | P-3 | | | | |
| | Multiple Pond system (P-4) | P-4 | | | | |
| | Pocket Pond (p-5) | P-5 | | | | |
| | Surface Sand filter (F-1) | F-1 | | | | |
| | Underground Sand filter (F-2) | F-2 | | | | |
| | Perimeter Sand Filter (F-3) | F-3 | | | | |
| | Organic Filter (F-4) | F-4 | | | | |
| | Shallow Wetland (W-1) | W-1 | | | | |
| | Extended Detention Wetland (W-2) | W-2 | | | | |
| | Pond/Wetland System (W-3) | W-3 | | | | |
| | Pocket Wetland (W-4) | W-4 | | | | |
| Wet Swale (O-2) | O-2 | | | | | |
| Totals by Area Reduction | | → | 0.00 | 0.00 | 0 | |
| Totals by Volume Reduction | | → | 0.00 | 0.00 | 0 | |
| Totals by Standard SMP w/RRV | | → | 1.90 | 1.25 | 6200 | 0 |
| Totals by Standard SMP | | → | 0.00 | 0.00 | | 0 |
| Totals (Area + Volume + all SMPs) | | → | 1.90 | 1.25 | 6,200 | 0 |
| Impervious Cover v | | okay | | | | |

Minimum RRv

Enter the Soils Data for the site

| Soil Group | Acres | S |
|------------|-------------|-----|
| A | | 55% |
| B | | 40% |
| C | 1.20 | 30% |
| D | 0.70 | 20% |
| Total Area | 1.9 | |

Calculate the Minimum RRv

| | | |
|--------------------|--------------|-------------------|
| S = | 0.26 | |
| Impervious = | 1.25 | <i>acre</i> |
| Precipitation | 1.4 | <i>in</i> |
| Rv | 0.95 | |
| Minimum RRv | 1,588 | <i>ft3</i> |
| | 0.04 | <i>af</i> |

NOI QUESTIONS

| # | NOI Question | Reported Value | |
|-----|---|----------------|-------|
| | | cf | af |
| 28 | Total Water Quality Volume (WQv) Required | 6200 | 0.142 |
| 30 | Total RRV Provided | 6200 | 0.142 |
| 31 | Is RRV Provided \geq WQv Required? | Yes | |
| 32 | Minimum RRV | 1588 | 0.036 |
| 32a | Is RRV Provided \geq Minimum RRV Required? | Yes | |
| 33a | Total WQv Treated | 0 | 0.000 |
| 34 | Sum of Volume Reduced & Treated | 6200 | 0.142 |
| 34 | Sum of Volume Reduced and Treated | 6200 | 0.142 |
| 35 | Is Sum RRV Provided and WQv Provided \geq WQv Required? | Yes | |

| Apply Peak Flow Attenuation | | | |
|-----------------------------|--|------------|--|
| 36 | Channel Protection | <i>Cpv</i> | |
| 37 | Overbank | <i>Qp</i> | |
| 37 | Extreme Flood Control | <i>Qf</i> | |
| | Are Quantity Control requirements met? | | |

Infiltration Basin Worksheet

| Design Point: | Site | 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 |
| 1 | 1.90 | 1.25 | 0.66 | 0.64 | 6200.04 | 1.40 | Infiltration Basin |
| Enter Impervious Area Reduced by Disconnection of Roofs etc. | | | 66% | 0.64 | 6,200 | <<WQv after adjusting for Disconnected Rooftops | |
| Enter the portion of the WQv that is not reduced for all practices routed to this practice. | | | | | | ft ³ | |
| Pretreatment Techniques to Prevent Clogging | | | | | | | |
| Infiltration Rate | | | 2.00 | <i>in/hour</i> | <i>Okay</i> | | |
| Pretreatment Sizing | | | 25 | <i>% WQv</i> | <i>25% minimum; 50% if >2 in/hr 100% if >5in/hour</i> | | |
| Pretreatment Required Volume | | | 1,550 | <i>ft³</i> | | | |
| Pretreatment Provided | | | 1,555 | <i>ft³</i> | | | |
| Pretreatment Techniques utilized | | | <i>Other</i> | | | | |
| Size An Infiltration Basin | | | | | | | |
| Design Volume | 6,200 | <i>ft³</i> | WQv | | | | |
| Basal Area Required | 6,200 | <i>ft²</i> | <i>Infiltration practices shall be designed to exfiltrate the entire WQv through the floor of each practice.</i> | | | | |
| Basal Area Provided | 13,836 | <i>ft²</i> | | | | | |
| Design Depth | 1.00 | <i>ft</i> | | | | | |
| Volume Provided | 13,836 | <i>ft³</i> | <i>Storage Volume provided in infiltration basin area (not including pretreatment.</i> | | | | |
| Determine Runoff Reduction | | | | | | | |
| RRV | 6,200 | <i>ft³</i> | <i>90% of the storage provided in the basin or WQv whichever is smaller</i> | | | | |
| Volume Treated | 0 | <i>ft³</i> | <i>This is the portion of the WQv that is not reduced/infiltrated</i> | | | | |
| Sizing v | OK | | <i>The infiltration basin must provide storage equal to or greater than the WQv of the contributing area.</i> | | | | |

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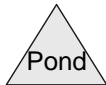
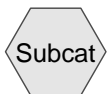
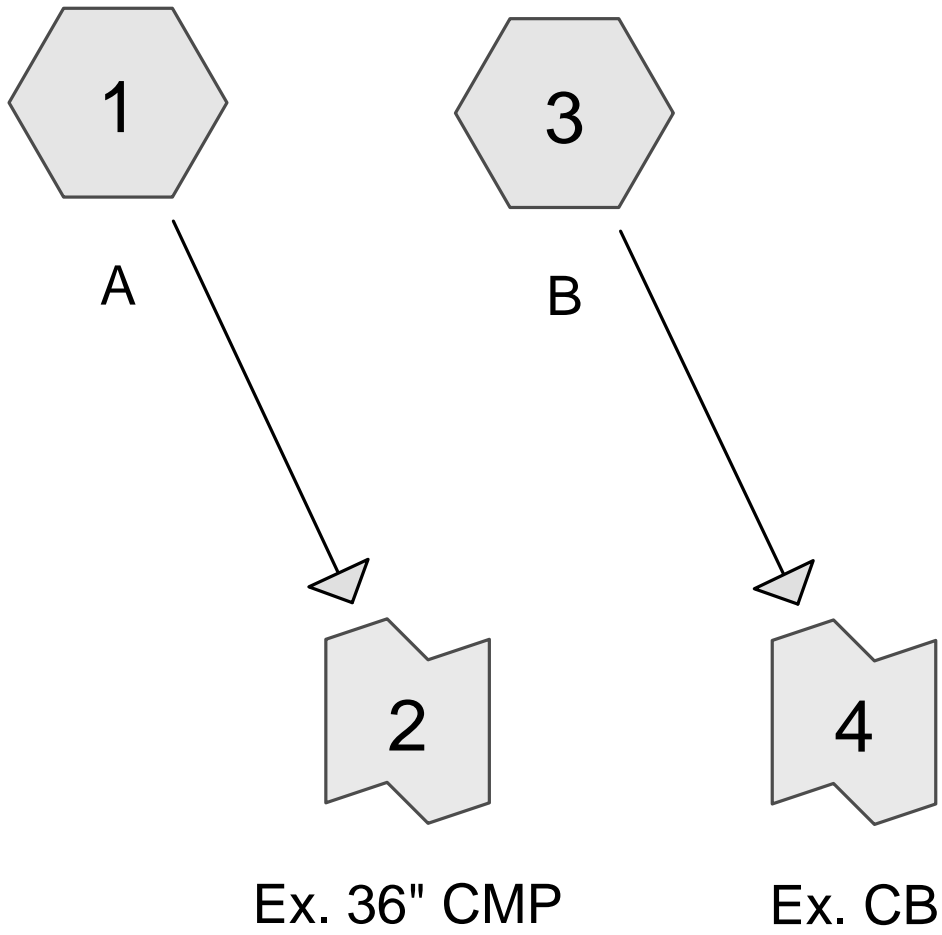
Appendix I:
Pre-Development
Runoff Calculations



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Pre-Development



Routing Diagram for 4762 UHaul MiddleHope
Prepared by MNTM, Printed 2/3/2022
HydroCAD® 10.00 s/n 03983 © 2013 HydroCAD Software Solutions LLC

Summary for Subcatchment 1: A

Runoff = 9.09 cfs @ 12.10 hrs, Volume= 0.729 af, Depth= 0.97"

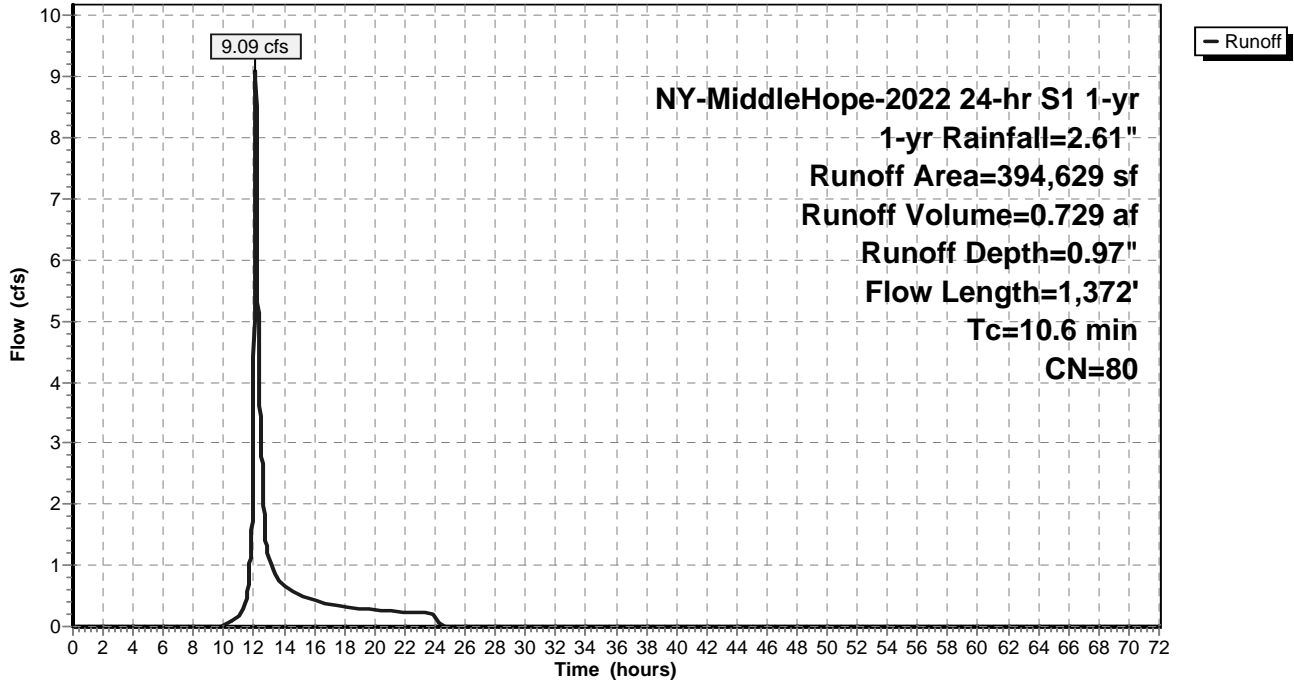
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 1-yr 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 30,615 | 98 | Ex. Impervious (Offsite) |
| * 3,040 | 98 | Ex. Impervious (Onsite) |
| 53,872 | 84 | 50-75% Grass cover, Fair, HSG D |
| 211,154 | 79 | Woods, Fair, HSG D |
| * 1,601 | 77 | Brush, Fair, HSG D (Dev. Area) |
| 15,916 | 77 | Brush, Fair, HSG D |
| 3,482 | 79 | 50-75% Grass cover, Fair, HSG C |
| 20,687 | 73 | Woods, Fair, HSG C |
| * 54,262 | 70 | Brush, Fair, HSG C (Dev. Area) |
| 394,629 | 80 | Weighted Average |
| 360,974 | | 91.47% Pervious Area |
| 33,655 | | 8.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.5 | 100 | 0.0850 | 0.30 | | Sheet Flow, Sheet1 Grass: Short n= 0.150 P2= 3.15" |
| 4.4 | 532 | 0.1650 | 2.03 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.3 | 352 | 0.0966 | 17.03 | 408.69 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 0.4 | 388 | 0.0773 | 15.23 | 365.59 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 10.6 | 1,372 | Total | | | |

Subcatchment 1: A

Hydrograph



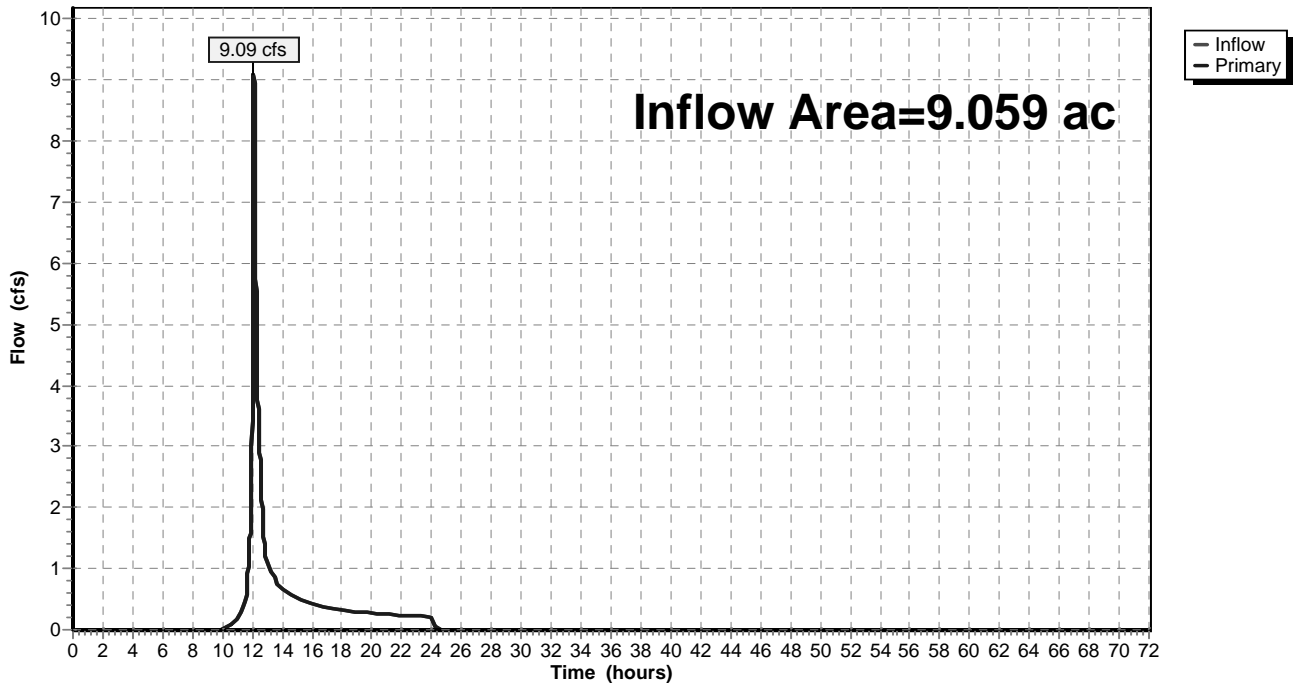
Summary for Link 2: Ex. 36" CMP

Inflow Area = 9.059 ac, 8.53% Impervious, Inflow Depth = 0.97" for 1-yr event
Inflow = 9.09 cfs @ 12.10 hrs, Volume= 0.729 af
Primary = 9.09 cfs @ 12.10 hrs, Volume= 0.729 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 2: Ex. 36" CMP

Hydrograph



Summary for Subcatchment 3: B

Runoff = 2.03 cfs @ 12.23 hrs, Volume= 0.216 af, Depth= 1.02"

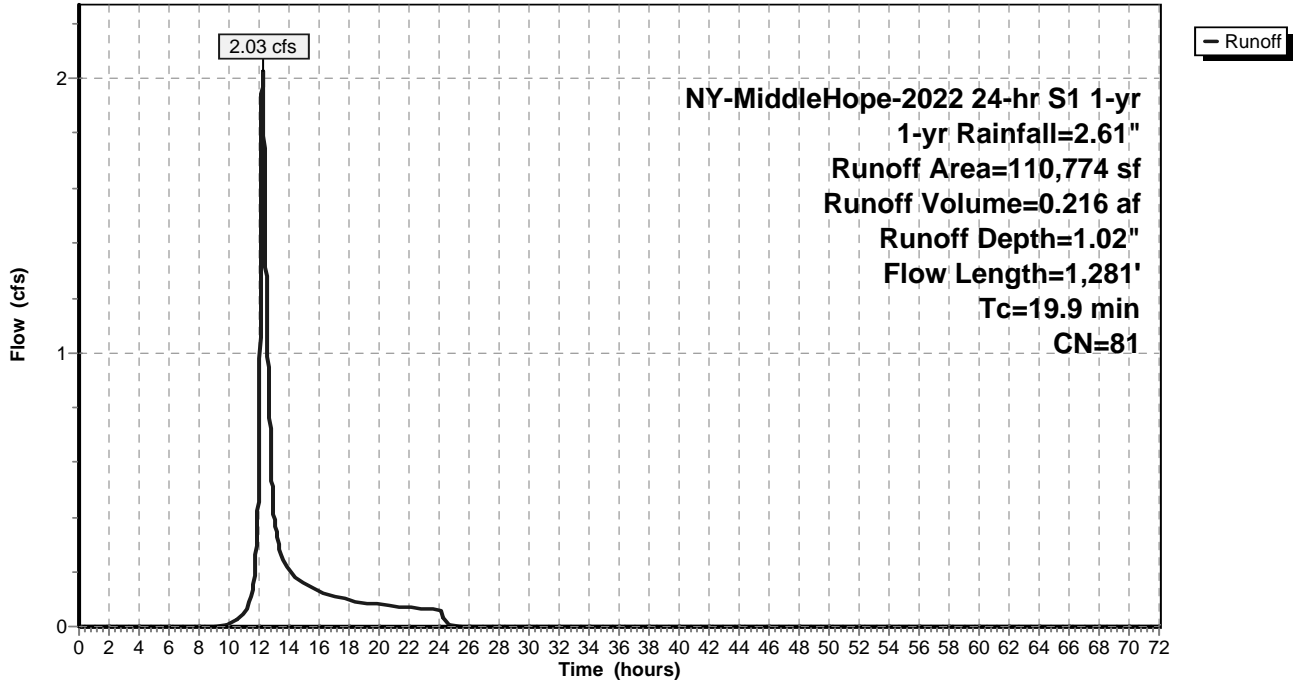
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 1-yr 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 4,655 | 98 | Ex. Impervious (Offsite) |
| * 8,088 | 98 | Ex. Impervious (Onsite) |
| 6,682 | 84 | 50-75% Grass cover, Fair, HSG D |
| 65,710 | 79 | Woods, Fair, HSG D |
| * 9,181 | 77 | Brush, Fair, HSG D (Dev. Area) |
| * 10,713 | 77 | Brush, Fair, HSG D |
| 1,438 | 79 | 50-75% Grass cover, Fair, HSG C |
| 1,640 | 73 | Woods, Fair, HSG C |
| * 2,667 | 70 | Brush, Fair, HSG C (Dev. Area) |
| 110,774 | 81 | Weighted Average |
| 98,031 | | 88.50% Pervious Area |
| 12,743 | | 11.50% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 9.9 | 100 | 0.1400 | 0.17 | | Sheet Flow, Sheet1 Woods: Light underbrush n= 0.400 P2= 3.15" |
| 3.2 | 410 | 0.1850 | 2.15 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.6 | 103 | 0.1550 | 2.76 | | Shallow Concentrated Flow, Shallow2 Short Grass Pasture Kv= 7.0 fps |
| 1.2 | 158 | 0.2030 | 2.25 | | Shallow Concentrated Flow, Shallow3 Woodland Kv= 5.0 fps |
| 1.3 | 115 | 0.0870 | 1.47 | | Shallow Concentrated Flow, Shallow4 Woodland Kv= 5.0 fps |
| 3.7 | 395 | 0.0633 | 1.76 | | Shallow Concentrated Flow, Shallow5 Short Grass Pasture Kv= 7.0 fps |
| 19.9 | 1,281 | Total | | | |

Subcatchment 3: B

Hydrograph



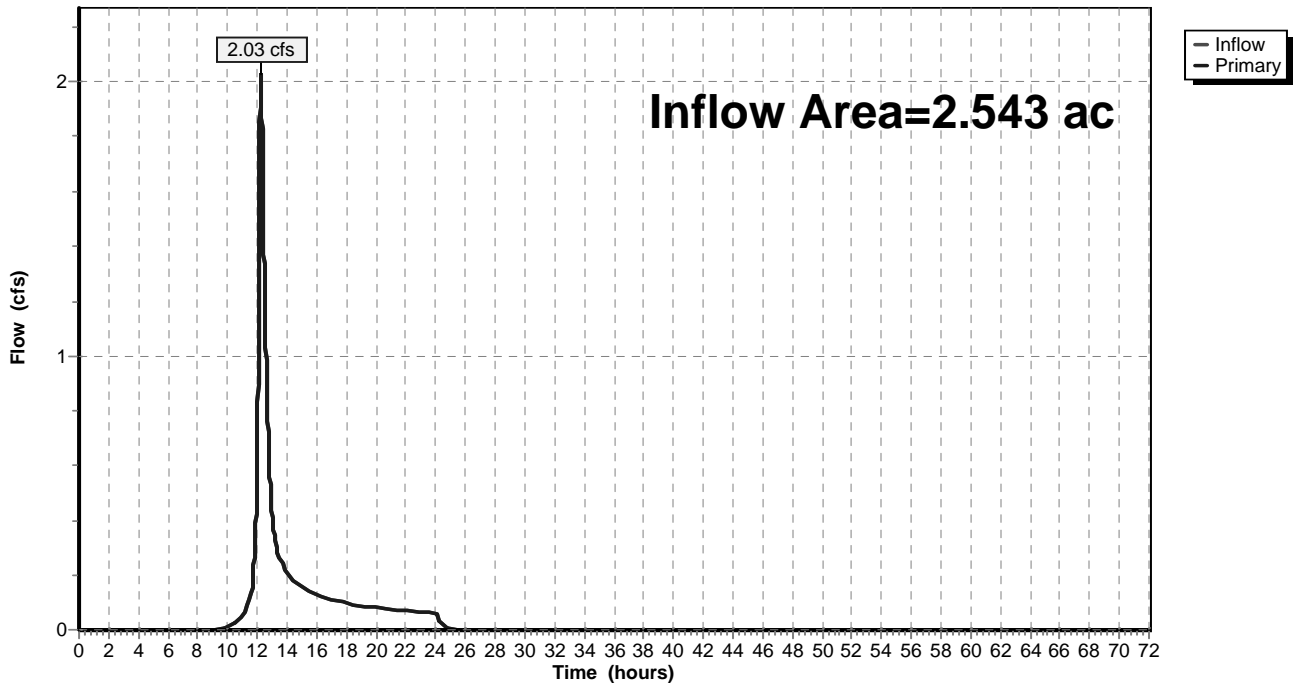
Summary for Link 4: Ex. CB

Inflow Area = 2.543 ac, 11.50% Impervious, Inflow Depth = 1.02" for 1-yr event
Inflow = 2.03 cfs @ 12.23 hrs, Volume= 0.216 af
Primary = 2.03 cfs @ 12.23 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 4: Ex. CB

Hydrograph



Summary for Subcatchment 1: A

Runoff = 24.02 cfs @ 12.10 hrs, Volume= 1.962 af, Depth= 2.60"

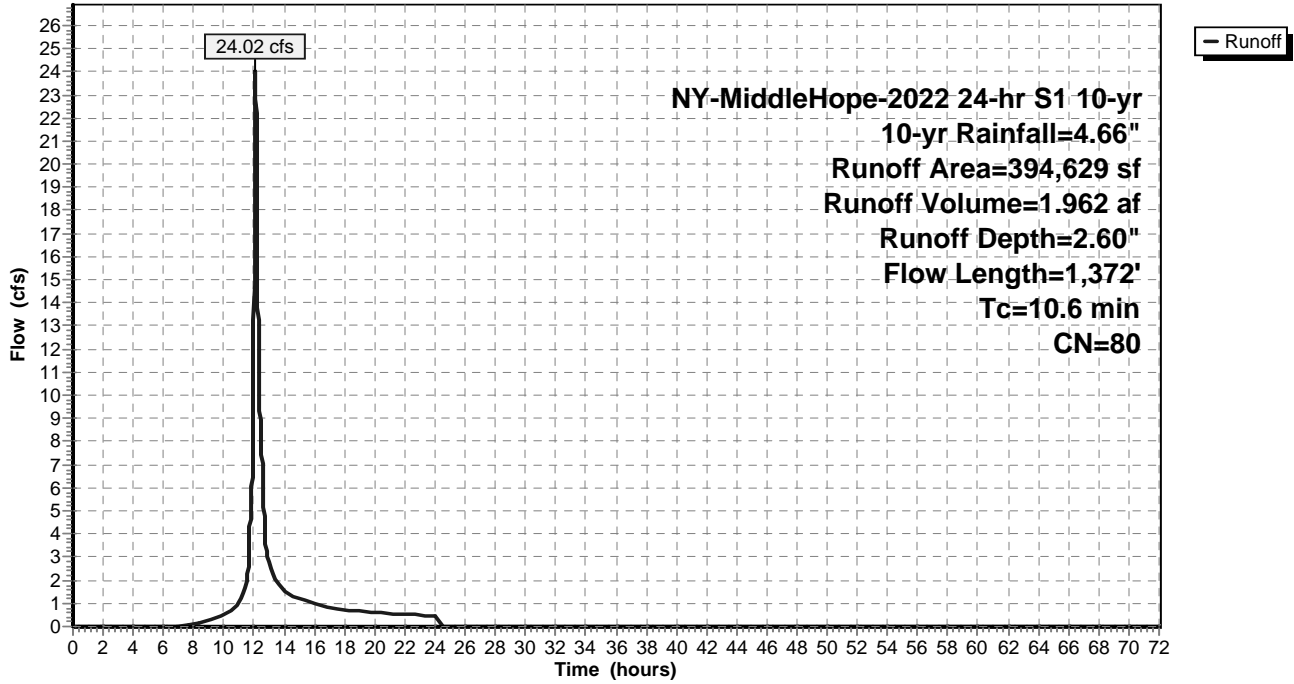
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 10-yr 10-yr Rainfall=4.66"

| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 30,615 | 98 | Ex. Impervious (Offsite) |
| * 3,040 | 98 | Ex. Impervious (Onsite) |
| 53,872 | 84 | 50-75% Grass cover, Fair, HSG D |
| 211,154 | 79 | Woods, Fair, HSG D |
| * 1,601 | 77 | Brush, Fair, HSG D (Dev. Area) |
| 15,916 | 77 | Brush, Fair, HSG D |
| 3,482 | 79 | 50-75% Grass cover, Fair, HSG C |
| 20,687 | 73 | Woods, Fair, HSG C |
| * 54,262 | 70 | Brush, Fair, HSG C (Dev. Area) |
| 394,629 | 80 | Weighted Average |
| 360,974 | | 91.47% Pervious Area |
| 33,655 | | 8.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.5 | 100 | 0.0850 | 0.30 | | Sheet Flow, Sheet1 Grass: Short n= 0.150 P2= 3.15" |
| 4.4 | 532 | 0.1650 | 2.03 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.3 | 352 | 0.0966 | 17.03 | 408.69 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 0.4 | 388 | 0.0773 | 15.23 | 365.59 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 10.6 | 1,372 | Total | | | |

Subcatchment 1: A

Hydrograph



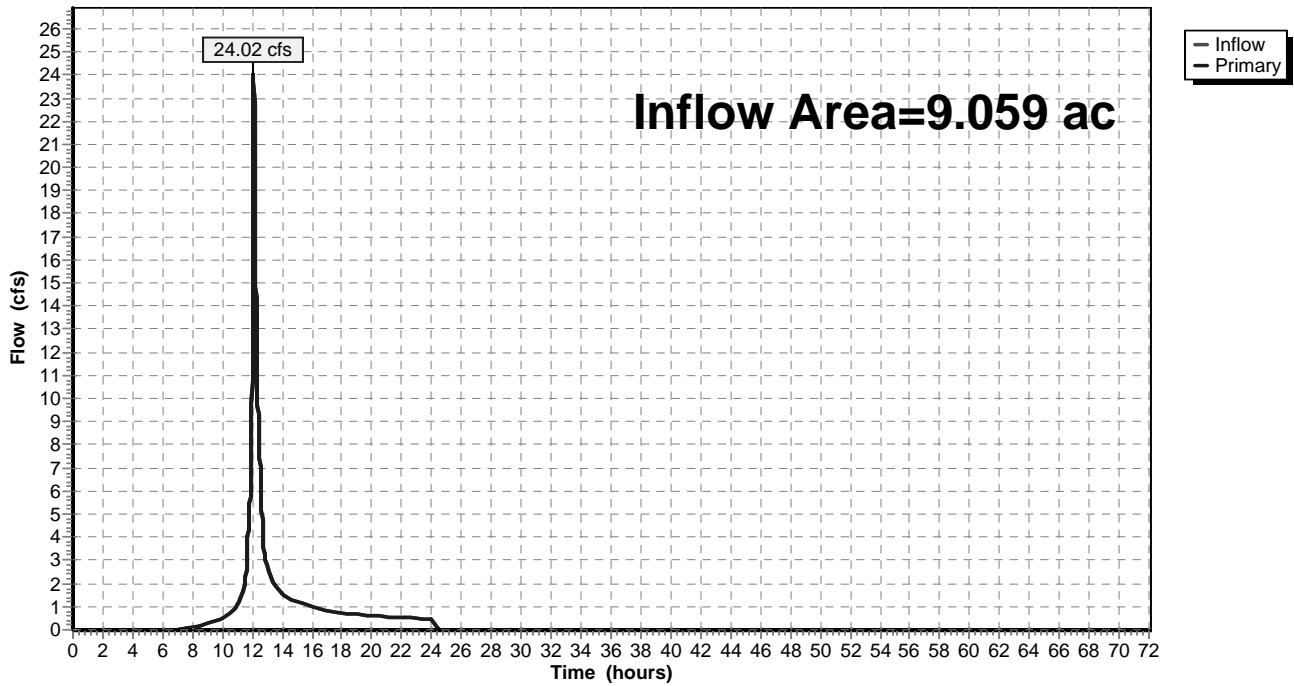
Summary for Link 2: Ex. 36" CMP

Inflow Area = 9.059 ac, 8.53% Impervious, Inflow Depth = 2.60" for 10-yr event
Inflow = 24.02 cfs @ 12.10 hrs, Volume= 1.962 af
Primary = 24.02 cfs @ 12.10 hrs, Volume= 1.962 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 2: Ex. 36" CMP

Hydrograph



Summary for Subcatchment 3: B

Runoff = 5.27 cfs @ 12.23 hrs, Volume= 0.569 af, Depth= 2.69"

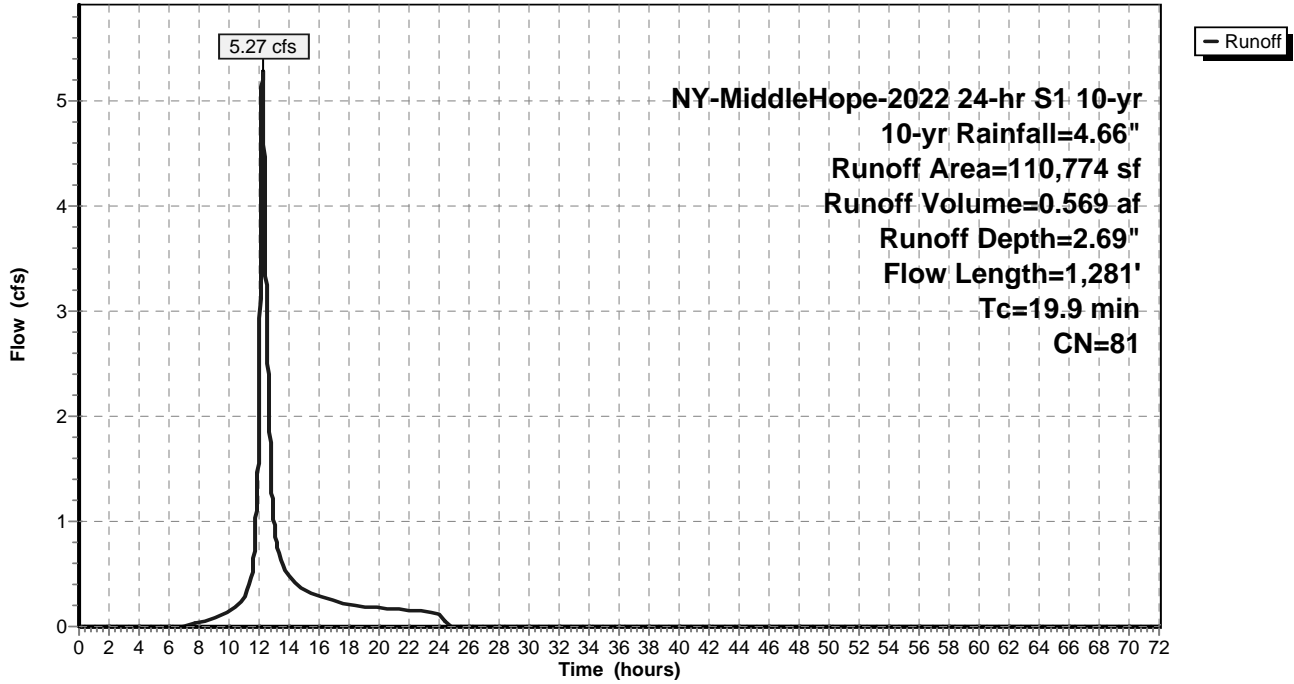
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 10-yr 10-yr Rainfall=4.66"

| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 4,655 | 98 | Ex. Impervious (Offsite) |
| * 8,088 | 98 | Ex. Impervious (Onsite) |
| 6,682 | 84 | 50-75% Grass cover, Fair, HSG D |
| 65,710 | 79 | Woods, Fair, HSG D |
| * 9,181 | 77 | Brush, Fair, HSG D (Dev. Area) |
| * 10,713 | 77 | Brush, Fair, HSG D |
| 1,438 | 79 | 50-75% Grass cover, Fair, HSG C |
| 1,640 | 73 | Woods, Fair, HSG C |
| * 2,667 | 70 | Brush, Fair, HSG C (Dev. Area) |
| 110,774 | 81 | Weighted Average |
| 98,031 | | 88.50% Pervious Area |
| 12,743 | | 11.50% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 9.9 | 100 | 0.1400 | 0.17 | | Sheet Flow, Sheet1 Woods: Light underbrush n= 0.400 P2= 3.15" |
| 3.2 | 410 | 0.1850 | 2.15 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.6 | 103 | 0.1550 | 2.76 | | Shallow Concentrated Flow, Shallow2 Short Grass Pasture Kv= 7.0 fps |
| 1.2 | 158 | 0.2030 | 2.25 | | Shallow Concentrated Flow, Shallow3 Woodland Kv= 5.0 fps |
| 1.3 | 115 | 0.0870 | 1.47 | | Shallow Concentrated Flow, Shallow4 Woodland Kv= 5.0 fps |
| 3.7 | 395 | 0.0633 | 1.76 | | Shallow Concentrated Flow, Shallow5 Short Grass Pasture Kv= 7.0 fps |
| 19.9 | 1,281 | Total | | | |

Subcatchment 3: B

Hydrograph



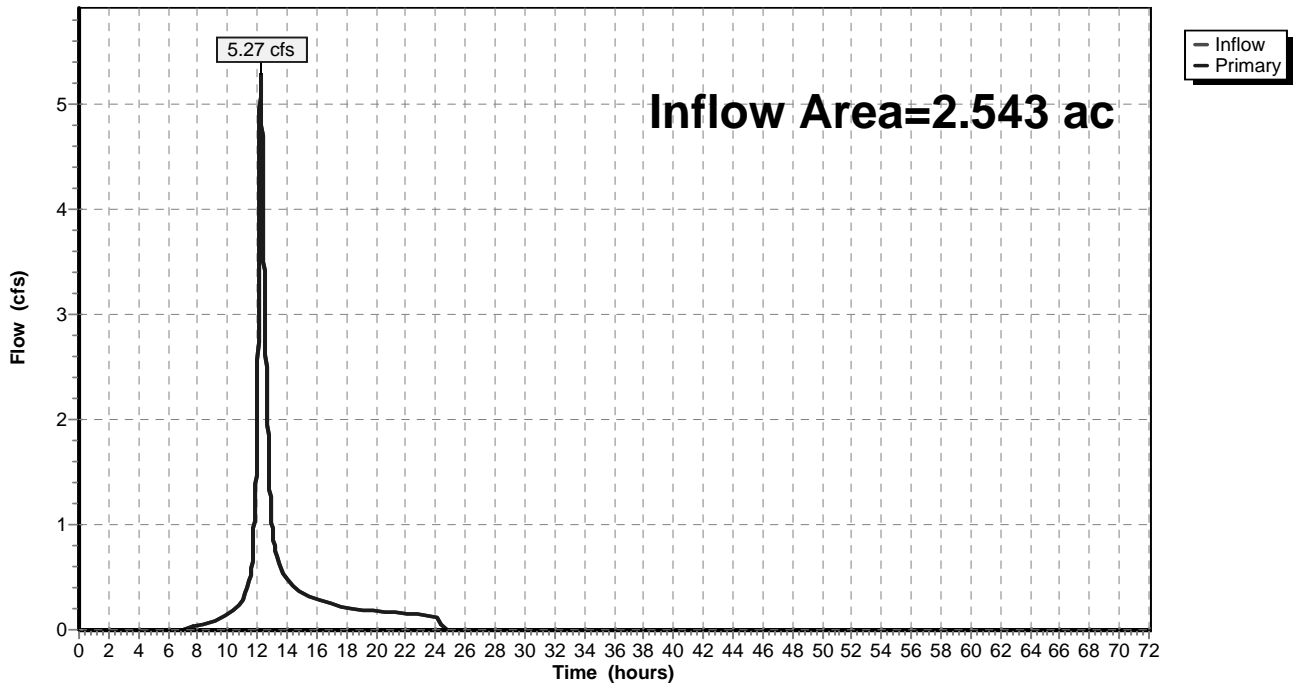
Summary for Link 4: Ex. CB

Inflow Area = 2.543 ac, 11.50% Impervious, Inflow Depth = 2.69" for 10-yr event
Inflow = 5.27 cfs @ 12.23 hrs, Volume= 0.569 af
Primary = 5.27 cfs @ 12.23 hrs, Volume= 0.569 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 4: Ex. CB

Hydrograph



Summary for Subcatchment 1: A

Runoff = 49.64 cfs @ 12.10 hrs, Volume= 4.388 af, Depth= 5.81"

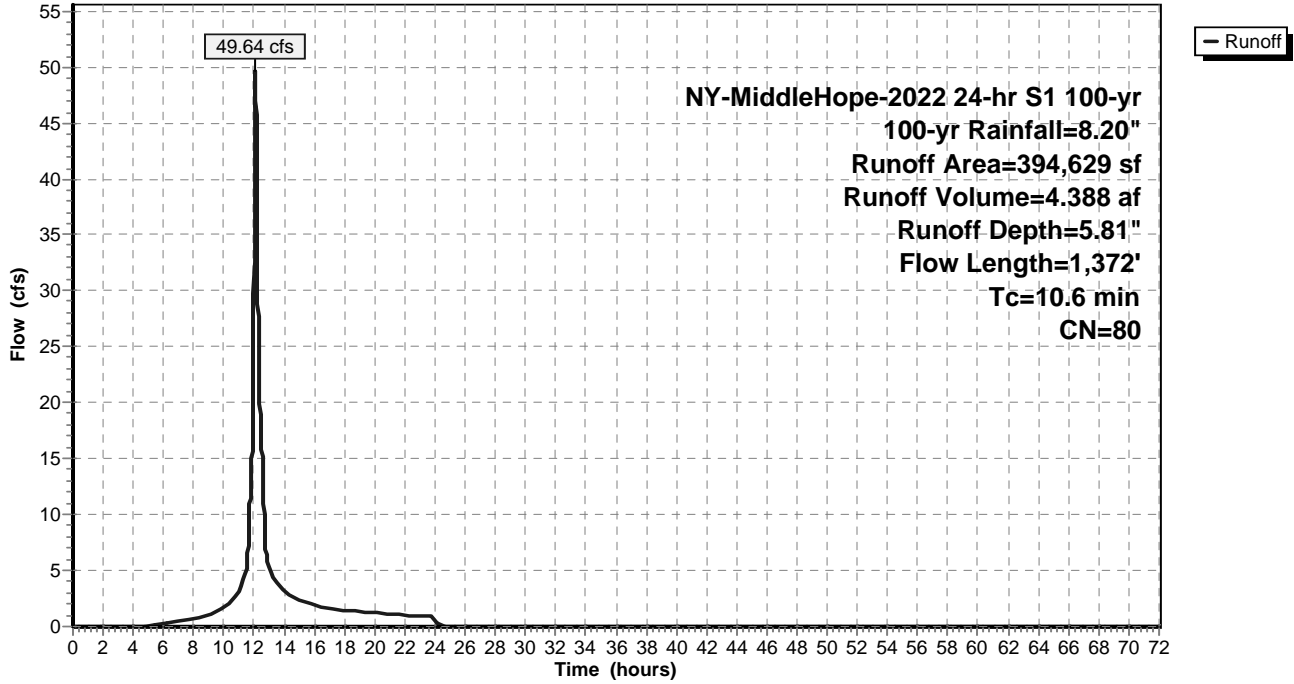
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 100-yr 100-yr Rainfall=8.20"

| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 30,615 | 98 | Ex. Impervious (Offsite) |
| * 3,040 | 98 | Ex. Impervious (Onsite) |
| 53,872 | 84 | 50-75% Grass cover, Fair, HSG D |
| 211,154 | 79 | Woods, Fair, HSG D |
| * 1,601 | 77 | Brush, Fair, HSG D (Dev. Area) |
| 15,916 | 77 | Brush, Fair, HSG D |
| 3,482 | 79 | 50-75% Grass cover, Fair, HSG C |
| 20,687 | 73 | Woods, Fair, HSG C |
| * 54,262 | 70 | Brush, Fair, HSG C (Dev. Area) |
| 394,629 | 80 | Weighted Average |
| 360,974 | | 91.47% Pervious Area |
| 33,655 | | 8.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.5 | 100 | 0.0850 | 0.30 | | Sheet Flow, Sheet1 Grass: Short n= 0.150 P2= 3.15" |
| 4.4 | 532 | 0.1650 | 2.03 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.3 | 352 | 0.0966 | 17.03 | 408.69 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 0.4 | 388 | 0.0773 | 15.23 | 365.59 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 10.6 | 1,372 | Total | | | |

Subcatchment 1: A

Hydrograph



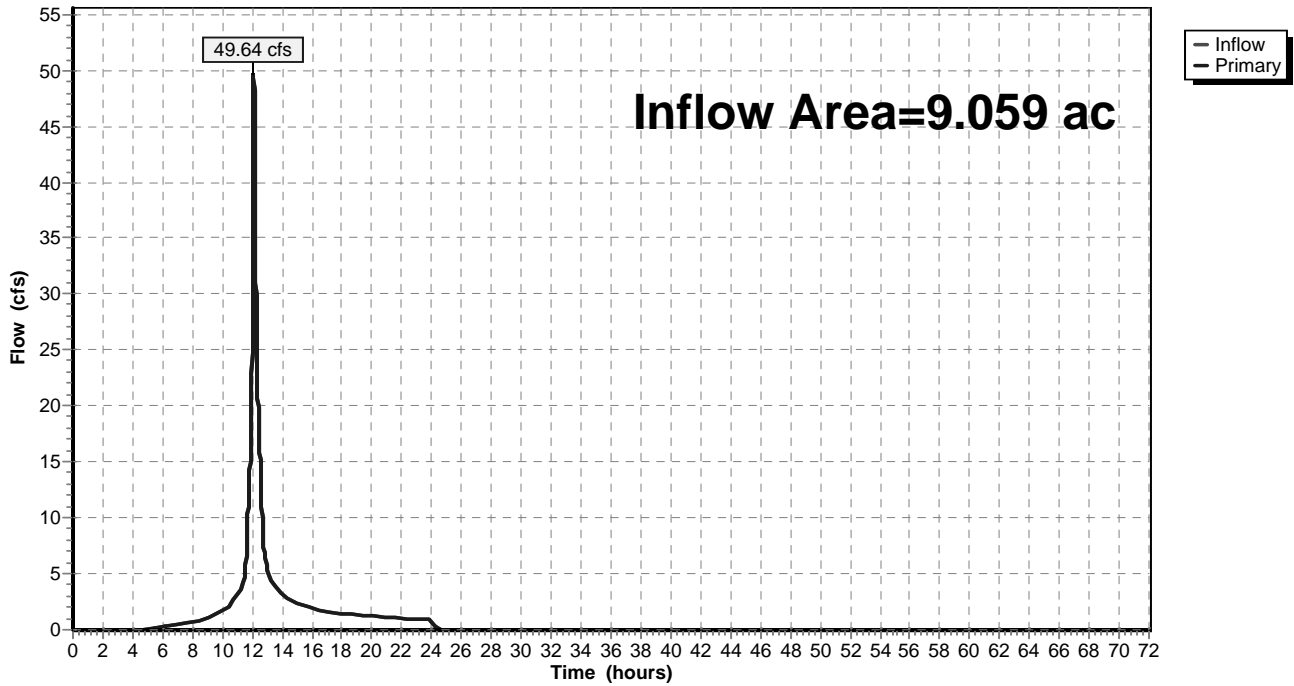
Summary for Link 2: Ex. 36" CMP

Inflow Area = 9.059 ac, 8.53% Impervious, Inflow Depth = 5.81" for 100-yr event
Inflow = 49.64 cfs @ 12.10 hrs, Volume= 4.388 af
Primary = 49.64 cfs @ 12.10 hrs, Volume= 4.388 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 2: Ex. 36" CMP

Hydrograph



Summary for Subcatchment 3: B

Runoff = 10.91 cfs @ 12.23 hrs, Volume= 1.257 af, Depth= 5.93"

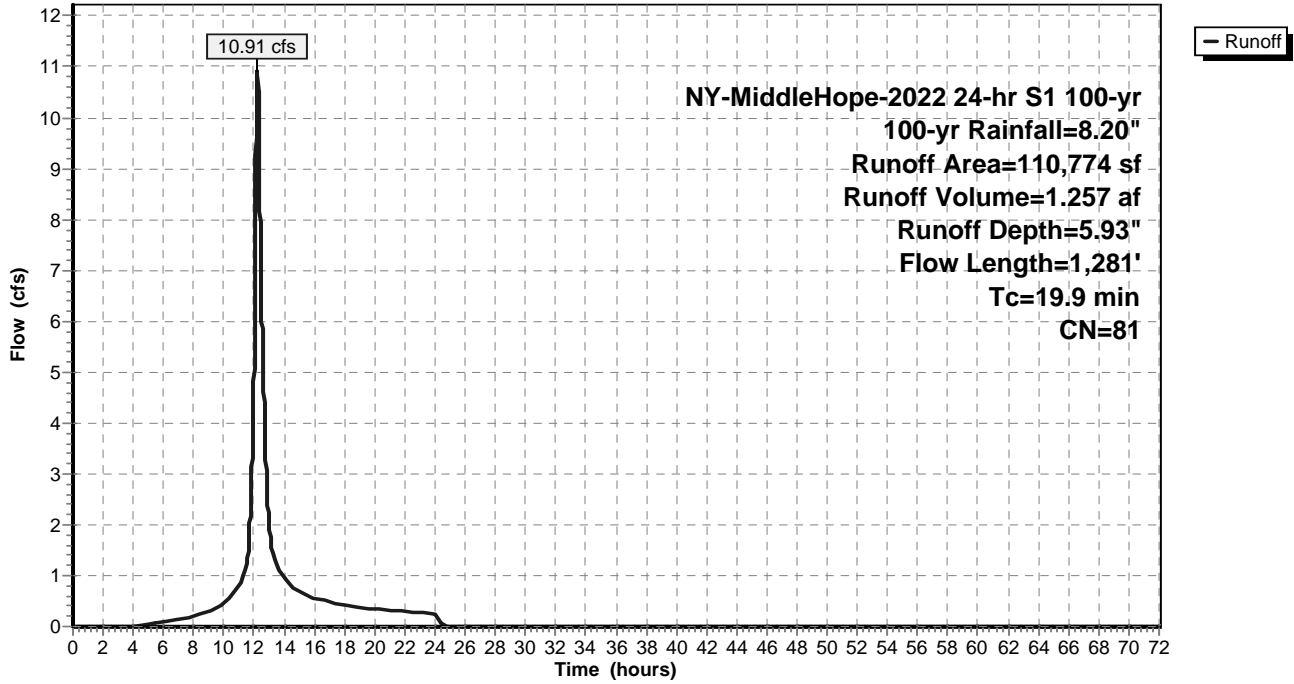
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 100-yr 100-yr Rainfall=8.20"

| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 4,655 | 98 | Ex. Impervious (Offsite) |
| * 8,088 | 98 | Ex. Impervious (Onsite) |
| 6,682 | 84 | 50-75% Grass cover, Fair, HSG D |
| 65,710 | 79 | Woods, Fair, HSG D |
| * 9,181 | 77 | Brush, Fair, HSG D (Dev. Area) |
| * 10,713 | 77 | Brush, Fair, HSG D |
| 1,438 | 79 | 50-75% Grass cover, Fair, HSG C |
| 1,640 | 73 | Woods, Fair, HSG C |
| * 2,667 | 70 | Brush, Fair, HSG C (Dev. Area) |
| 110,774 | 81 | Weighted Average |
| 98,031 | | 88.50% Pervious Area |
| 12,743 | | 11.50% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 9.9 | 100 | 0.1400 | 0.17 | | Sheet Flow, Sheet1 Woods: Light underbrush n= 0.400 P2= 3.15" |
| 3.2 | 410 | 0.1850 | 2.15 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.6 | 103 | 0.1550 | 2.76 | | Shallow Concentrated Flow, Shallow2 Short Grass Pasture Kv= 7.0 fps |
| 1.2 | 158 | 0.2030 | 2.25 | | Shallow Concentrated Flow, Shallow3 Woodland Kv= 5.0 fps |
| 1.3 | 115 | 0.0870 | 1.47 | | Shallow Concentrated Flow, Shallow4 Woodland Kv= 5.0 fps |
| 3.7 | 395 | 0.0633 | 1.76 | | Shallow Concentrated Flow, Shallow5 Short Grass Pasture Kv= 7.0 fps |
| 19.9 | 1,281 | Total | | | |

Subcatchment 3: B

Hydrograph



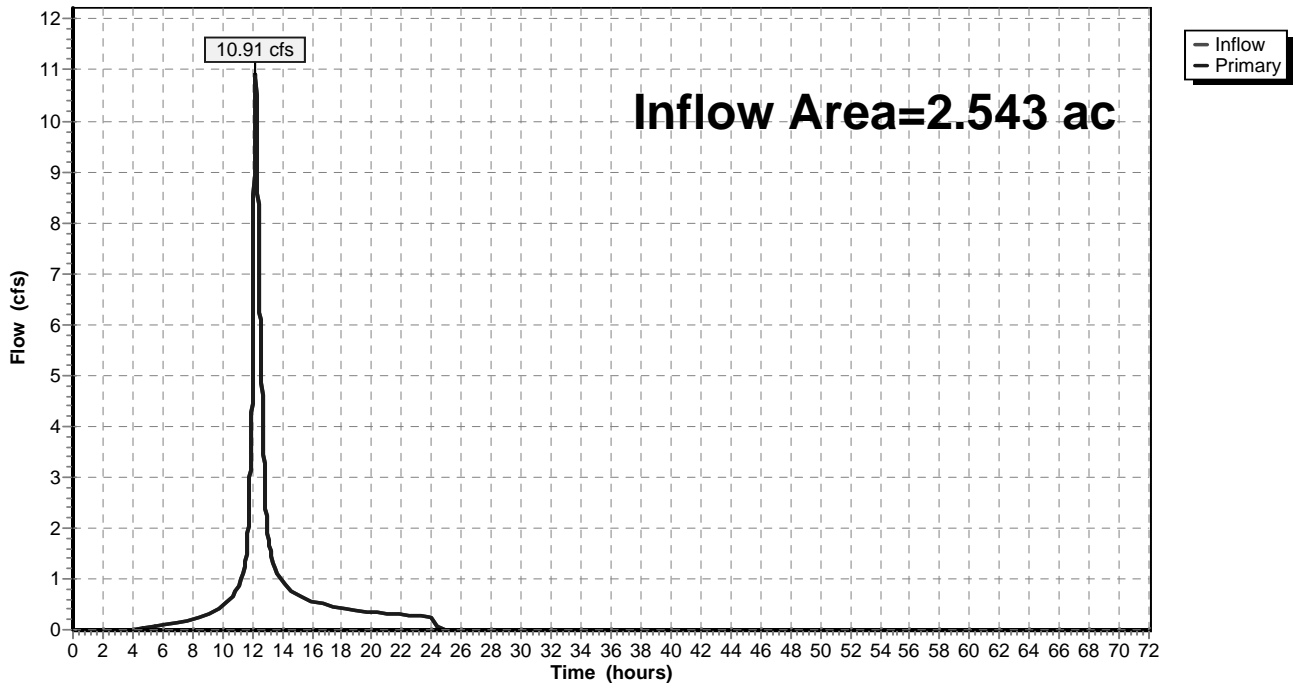
Summary for Link 4: Ex. CB

Inflow Area = 2.543 ac, 11.50% Impervious, Inflow Depth = 5.93" for 100-yr event
Inflow = 10.91 cfs @ 12.23 hrs, Volume= 1.257 af
Primary = 10.91 cfs @ 12.23 hrs, Volume= 1.257 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 4: Ex. CB

Hydrograph



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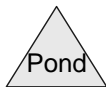
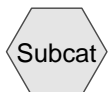
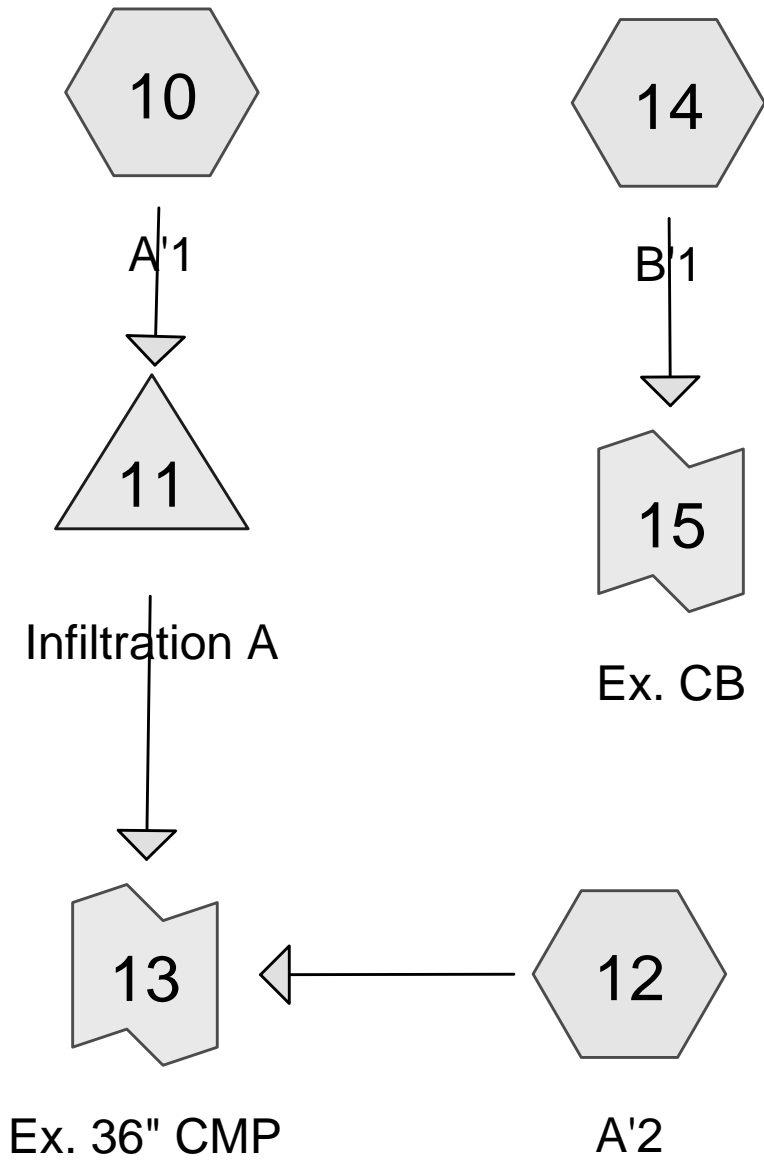
Appendix J:
Post-Development
Runoff Calculations



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Post-Development



Routing Diagram for 4762 UHaul MiddleHope
Prepared by MNTM, Printed 2/7/2022
HydroCAD® 10.00 s/n 03983 © 2013 HydroCAD Software Solutions LLC

Summary for Subcatchment 10: A'1

Runoff = 3.43 cfs @ 12.10 hrs, Volume= 0.271 af, Depth= 1.71"

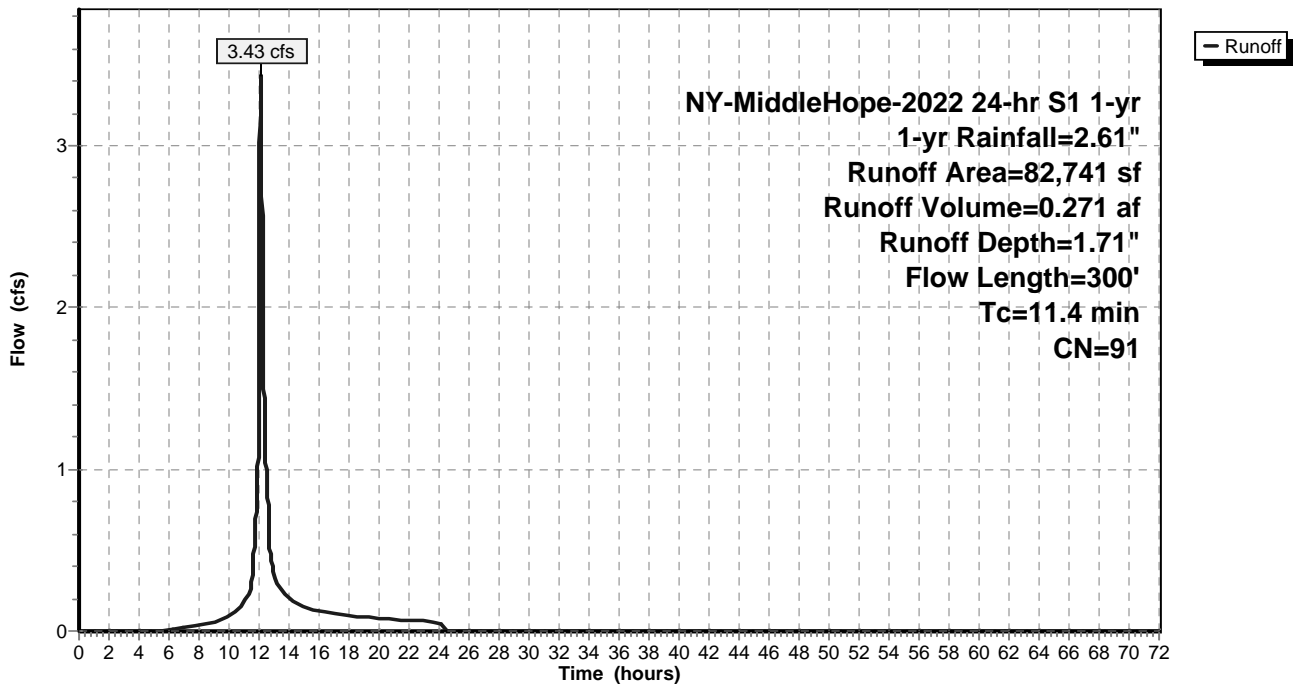
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 1-yr 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| * 54,746 | 98 | Proposed Impervious |
| 15,822 | 74 | >75% Grass cover, Good, HSG C |
| 11,649 | 80 | >75% Grass cover, Good, HSG D |
| 312 | 79 | Woods, Fair, HSG D |
| 212 | 73 | Woods, Fair, HSG C |
| 82,741 | 91 | Weighted Average |
| 27,995 | | 33.83% Pervious Area |
| 54,746 | | 66.17% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.9 | 80 | 0.0100 | 0.12 | | Sheet Flow, Sheet1 Grass: Short n= 0.150 P2= 3.15" |
| 0.5 | 220 | 0.0770 | 7.54 | 22.61 | Channel Flow, Channel1 Area= 3.0 sf Perim= 4.8' r= 0.63' n= 0.040 Earth, cobble bottom, clean sides |
| 11.4 | 300 | Total | | | |

Subcatchment 10: A'1

Hydrograph



Summary for Pond 11: Infiltration A

Inflow Area = 1.899 ac, 66.17% Impervious, Inflow Depth = 1.71" for 1-yr event
 Inflow = 3.43 cfs @ 12.10 hrs, Volume= 0.271 af
 Outflow = 0.40 cfs @ 12.87 hrs, Volume= 0.271 af, Atten= 88%, Lag= 46.1 min
 Discarded = 0.26 cfs @ 11.58 hrs, Volume= 0.242 af
 Primary = 0.13 cfs @ 12.87 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 260.16' @ 12.87 hrs Surf.Area= 5,714 sf Storage= 4,399 cf
 Flood Elev= 266.00' Surf.Area= 5,714 sf Storage= 13,928 cf

Plug-Flow detention time= 106.6 min calculated for 0.271 af (100% of inflow)
 Center-of-Mass det. time= 106.6 min (932.6 - 826.1)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|---|
| #1 | 258.71' | 4,929 cf | 5.33'W x 7.00'L x 4.04'H Prismaoid x 125 18,842 cf Overall - 6,520 cf Embedded = 12,322 cf x 40.0% Voids |
| #2 | 259.71' | 6,520 cf | Cultec R-330XL x 125 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap |
| #3 | 258.71' | 1,175 cf | 6.00'W x 7.00'L x 4.04'H Prismaoid - IR x 25 4,242 cf Overall - 1,304 cf Embedded = 2,938 cf x 40.0% Voids |
| #4 | 259.71' | 1,304 cf | Cultec R-330XL-IR x 25 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap |
| | | 13,928 cf | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|--|
| #1 | Discarded | 258.71' | 2.000 in/hr Exfiltration over Horizontal area |
| #2 | Device 4 | 259.71' | 3.0" Vert. Orifice/Grate C= 0.600 |
| #3 | Device 4 | 261.71' | 3.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32 |
| #4 | Primary | 259.71' | 18.0" Round Culvert L= 65.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 259.71' / 258.88' S= 0.0128 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.77 sf |

Discarded OutFlow Max=0.26 cfs @ 11.58 hrs HW=258.78' (Free Discharge)

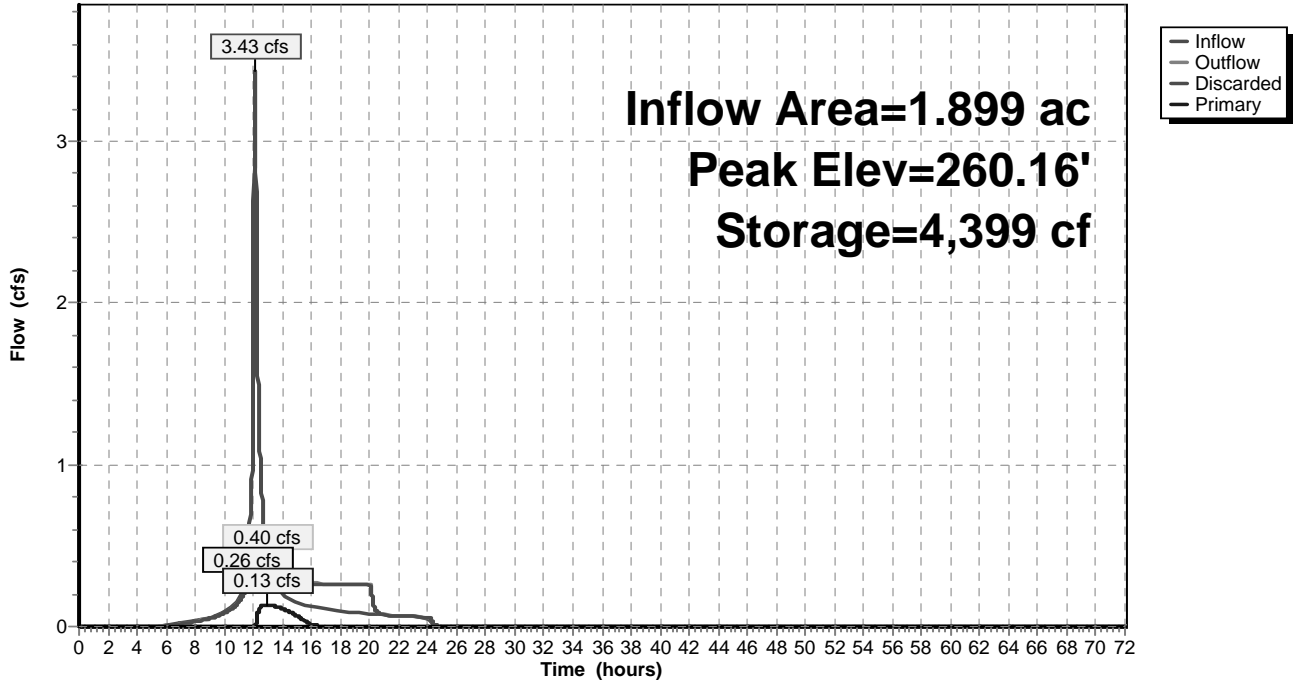
↑ **1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=0.13 cfs @ 12.87 hrs HW=260.16' (Free Discharge)

↑ **4=Culvert** (Passes 0.13 cfs of 1.00 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.13 cfs @ 2.72 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 11: Infiltration A

Hydrograph



Summary for Subcatchment 12: A'2

Runoff = 8.57 cfs @ 12.10 hrs, Volume= 0.680 af, Depth= 1.02"

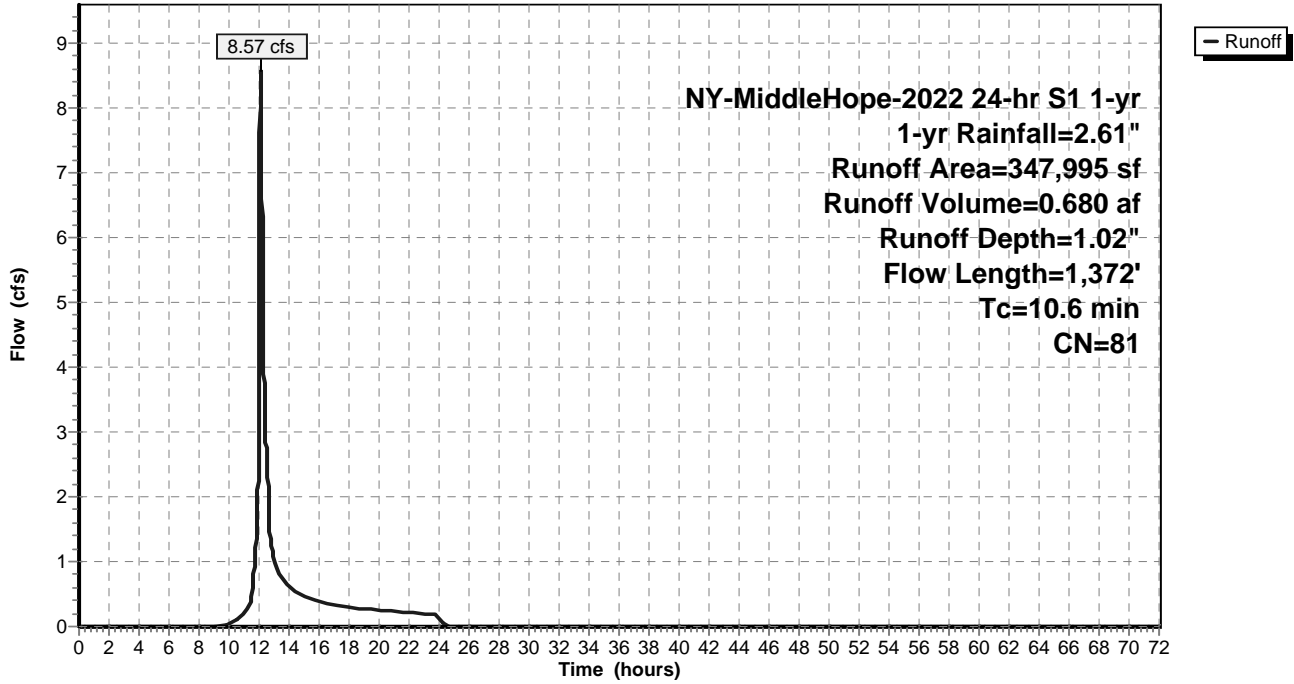
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 1-yr 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 30,476 | 98 | Ex. Impervious (Offsite) |
| 52,080 | 84 | 50-75% Grass cover, Fair, HSG D |
| 209,643 | 79 | Woods, Fair, HSG D |
| * 638 | 77 | Brush, Fair, HSG D (Dev. Area) |
| 15,916 | 77 | Brush, Fair, HSG D |
| 3,482 | 79 | 50-75% Grass cover, Fair, HSG C |
| 13,103 | 73 | Woods, Fair, HSG C |
| * 1,127 | 70 | Brush, Fair, HSG C (Dev. Area) |
| * 1,934 | 98 | Prop. Impervious |
| 5,176 | 80 | >75% Grass cover, Good, HSG D |
| 14,420 | 74 | >75% Grass cover, Good, HSG C |
| 347,995 | 81 | Weighted Average |
| 315,585 | | 90.69% Pervious Area |
| 32,410 | | 9.31% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.5 | 100 | 0.0850 | 0.30 | | Sheet Flow, Sheet1 Grass: Short n= 0.150 P2= 3.15" |
| 4.4 | 532 | 0.1650 | 2.03 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.3 | 352 | 0.0966 | 17.03 | 408.69 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 0.4 | 388 | 0.0773 | 15.23 | 365.59 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 10.6 | 1,372 | Total | | | |

Subcatchment 12: A'2

Hydrograph



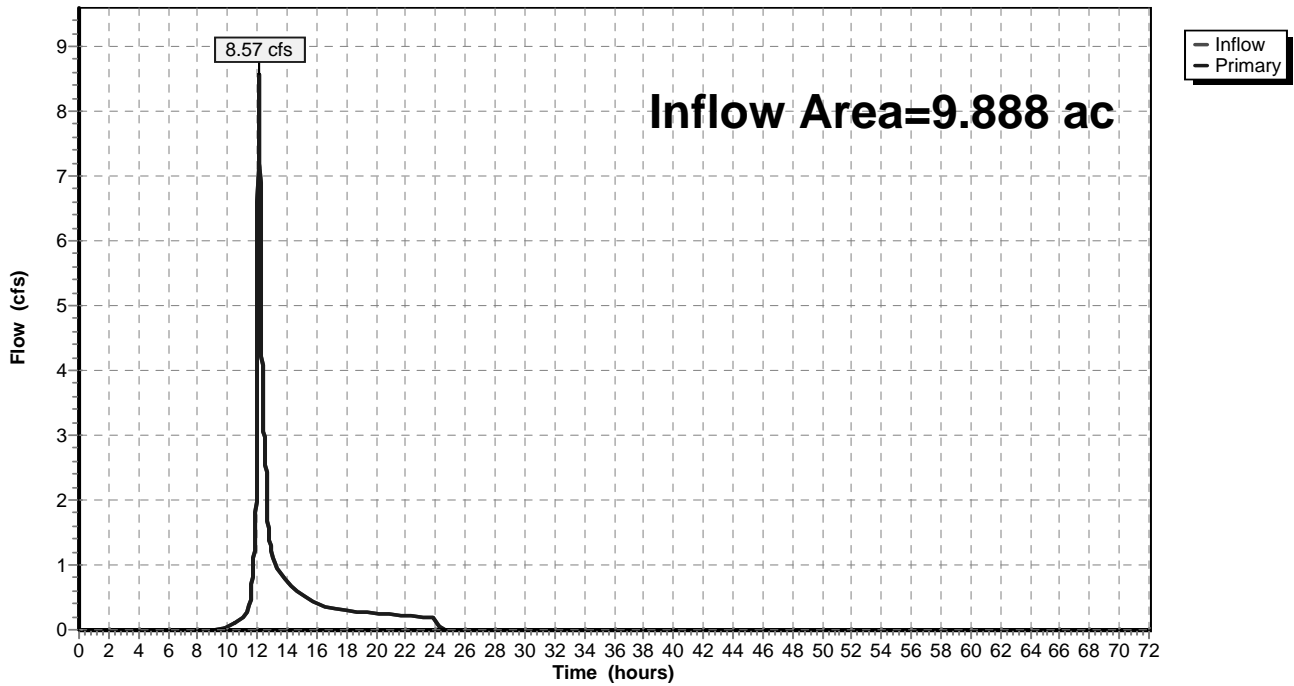
Summary for Link 13: Ex. 36" CMP

Inflow Area = 9.888 ac, 20.23% Impervious, Inflow Depth = 0.86" for 1-yr event
Inflow = 8.57 cfs @ 12.10 hrs, Volume= 0.709 af
Primary = 8.57 cfs @ 12.10 hrs, Volume= 0.709 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 13: Ex. 36" CMP

Hydrograph



Summary for Subcatchment 14: B'1

Runoff = 1.57 cfs @ 12.18 hrs, Volume= 0.149 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 1-yr 1-yr Rainfall=2.61"

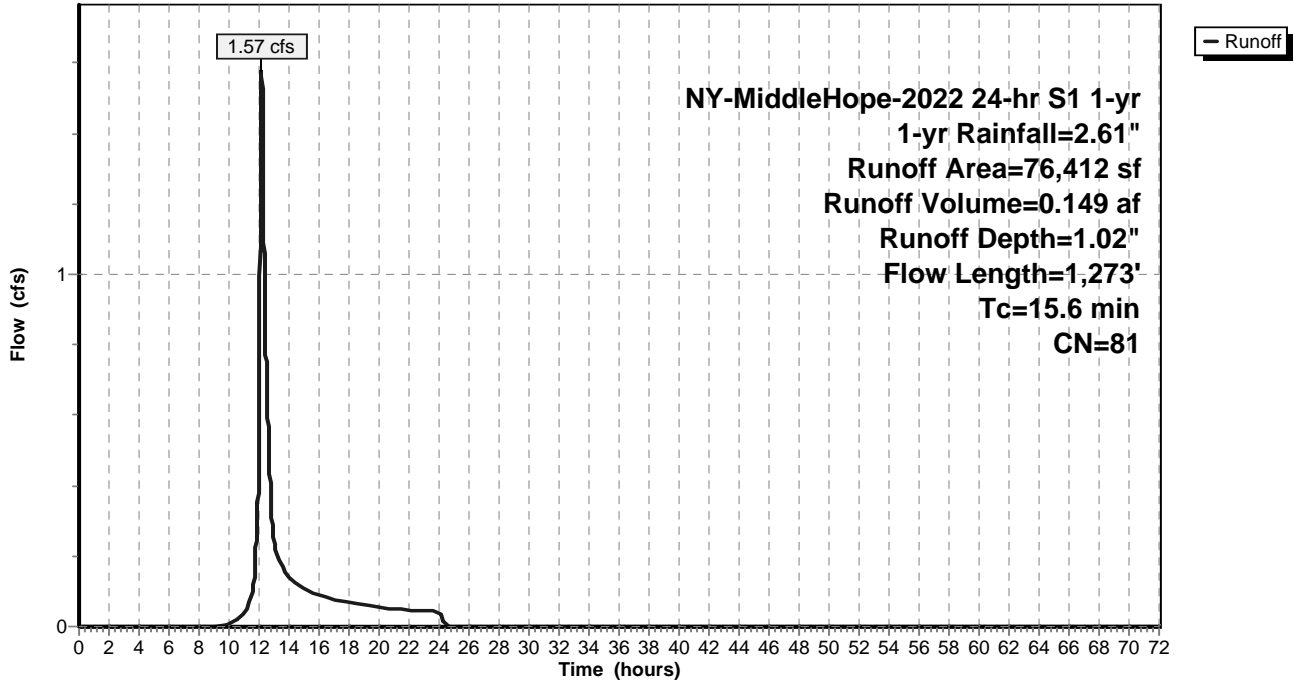
| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 4,655 | 98 | Ex. Impervious (Offsite) |
| 6,682 | 84 | 50-75% Grass cover, Fair, HSG D |
| 48,305 | 79 | Woods, Fair, HSG D |
| * 10,713 | 77 | Brush, Fair, HSG D |
| 402 | 79 | 50-75% Grass cover, Fair, HSG C |
| * 1,287 | 98 | Prop. Impervious |
| 3,109 | 80 | >75% Grass cover, Good, HSG D |
| 1,259 | 74 | >75% Grass cover, Good, HSG C |
| 76,412 | 81 | Weighted Average |
| 70,470 | | 92.22% Pervious Area |
| 5,942 | | 7.78% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 9.9 | 100 | 0.1400 | 0.17 | | Sheet Flow, Sheet1 Woods: Light underbrush n= 0.400 P2= 3.15" |
| 3.2 | 410 | 0.1850 | 2.15 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.6 | 103 | 0.1550 | 2.76 | | Shallow Concentrated Flow, Shallow2 Short Grass Pasture Kv= 7.0 fps |
| 1.2 | 158 | 0.2030 | 2.25 | | Shallow Concentrated Flow, Shallow3 Woodland Kv= 5.0 fps |
| 0.1 | 12 | 0.2083 | 3.19 | | Shallow Concentrated Flow, Shallow4 Short Grass Pasture Kv= 7.0 fps |
| 0.1 | 52 | 0.0577 | 6.52 | 19.57 | Channel Flow, Channel1 Area= 3.0 sf Perim= 4.8' r= 0.63' n= 0.040 Earth, cobble bottom, clean sides |
| 0.2 | 206 | 0.0770 | 16.49 | 29.15 | Pipe Channel, Pipe1 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior |
| 0.2 | 206 | 0.0553 | 13.98 | 24.70 | Pipe Channel, Pipe2 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior |
| 0.1 | 26 | 0.0384 | 5.32 | 15.96 | Channel Flow, Channel2 Area= 3.0 sf Perim= 4.8' r= 0.63' n= 0.040 Earth, cobble bottom, clean sides |

15.6 1,273 Total

Subcatchment 14: B'1

Hydrograph



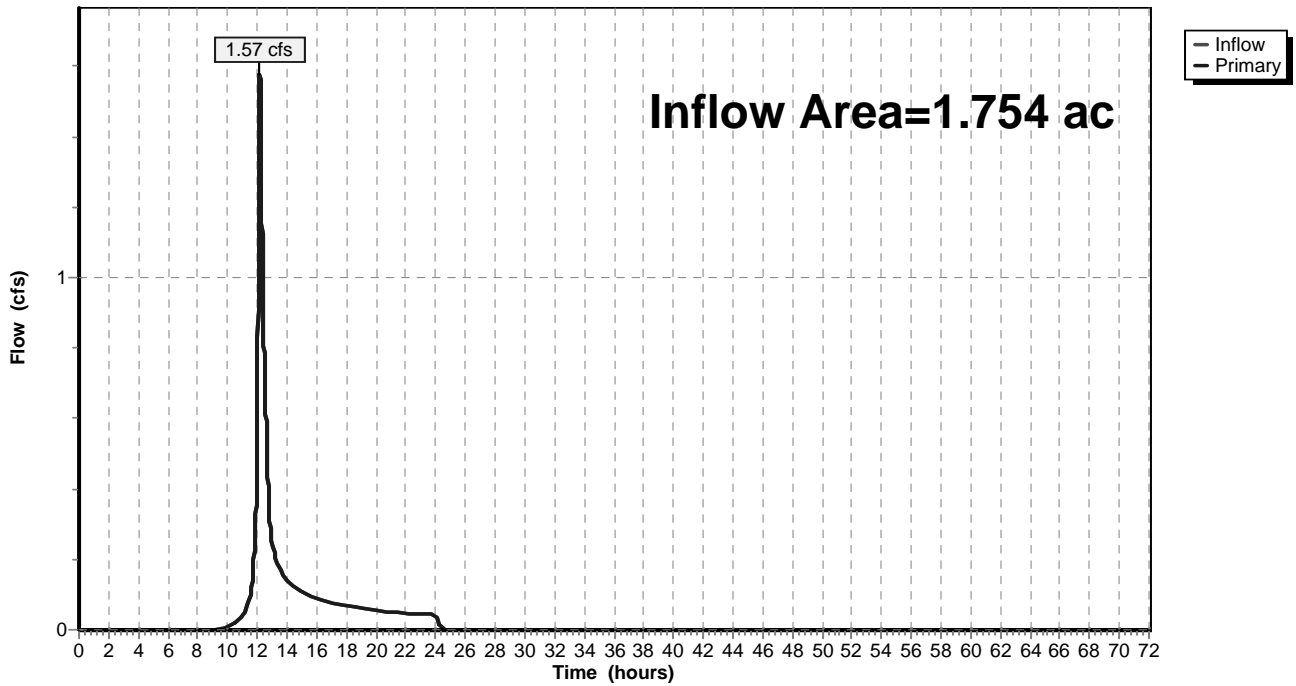
Summary for Link 15: Ex. CB

Inflow Area = 1.754 ac, 7.78% Impervious, Inflow Depth = 1.02" for 1-yr event
Inflow = 1.57 cfs @ 12.18 hrs, Volume= 0.149 af
Primary = 1.57 cfs @ 12.18 hrs, Volume= 0.149 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 15: Ex. CB

Hydrograph



Summary for Subcatchment 10: A'1

Runoff = 6.69 cfs @ 12.10 hrs, Volume= 0.578 af, Depth= 3.65"

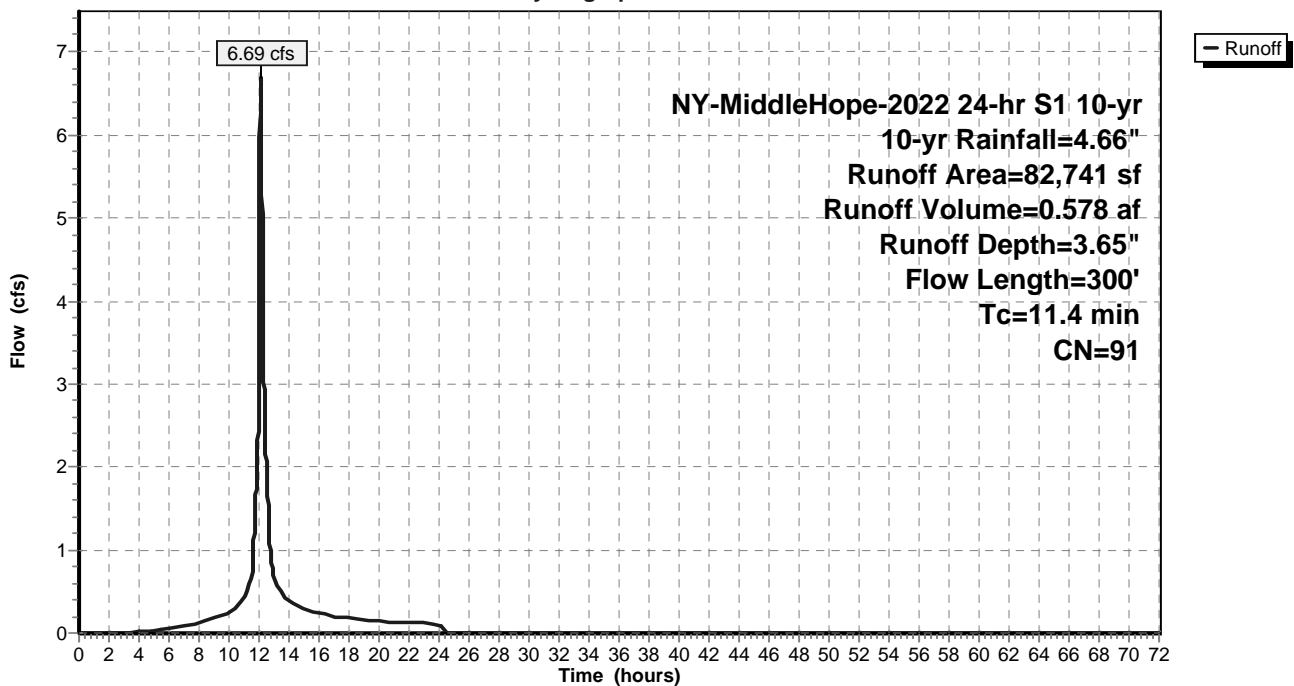
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 10-yr 10-yr Rainfall=4.66"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| * 54,746 | 98 | Proposed Impervious |
| 15,822 | 74 | >75% Grass cover, Good, HSG C |
| 11,649 | 80 | >75% Grass cover, Good, HSG D |
| 312 | 79 | Woods, Fair, HSG D |
| 212 | 73 | Woods, Fair, HSG C |
| 82,741 | 91 | Weighted Average |
| 27,995 | | 33.83% Pervious Area |
| 54,746 | | 66.17% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.9 | 80 | 0.0100 | 0.12 | | Sheet Flow, Sheet1 Grass: Short n= 0.150 P2= 3.15" |
| 0.5 | 220 | 0.0770 | 7.54 | 22.61 | Channel Flow, Channel1 Area= 3.0 sf Perim= 4.8' r= 0.63' n= 0.040 Earth, cobble bottom, clean sides |
| 11.4 | 300 | Total | | | |

Subcatchment 10: A'1

Hydrograph



Summary for Pond 11: Infiltration A

Inflow Area = 1.899 ac, 66.17% Impervious, Inflow Depth = 3.65" for 10-yr event
 Inflow = 6.69 cfs @ 12.10 hrs, Volume= 0.578 af
 Outflow = 0.58 cfs @ 13.21 hrs, Volume= 0.578 af, Atten= 91%, Lag= 66.2 min
 Discarded = 0.26 cfs @ 10.29 hrs, Volume= 0.396 af
 Primary = 0.32 cfs @ 13.21 hrs, Volume= 0.182 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 261.64' @ 13.21 hrs Surf.Area= 5,714 sf Storage= 10,900 cf
 Flood Elev= 266.00' Surf.Area= 5,714 sf Storage= 13,928 cf

Plug-Flow detention time= 194.2 min calculated for 0.578 af (100% of inflow)
 Center-of-Mass det. time= 194.2 min (995.6 - 801.4)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|---|
| #1 | 258.71' | 4,929 cf | 5.33'W x 7.00'L x 4.04'H Prismaoid x 125 18,842 cf Overall - 6,520 cf Embedded = 12,322 cf x 40.0% Voids |
| #2 | 259.71' | 6,520 cf | Cultec R-330XL x 125 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap |
| #3 | 258.71' | 1,175 cf | 6.00'W x 7.00'L x 4.04'H Prismaoid - IR x 25 4,242 cf Overall - 1,304 cf Embedded = 2,938 cf x 40.0% Voids |
| #4 | 259.71' | 1,304 cf | Cultec R-330XL-IR x 25 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap |
| | | 13,928 cf | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|--|
| #1 | Discarded | 258.71' | 2.000 in/hr Exfiltration over Horizontal area |
| #2 | Device 4 | 259.71' | 3.0" Vert. Orifice/Grate C= 0.600 |
| #3 | Device 4 | 261.71' | 3.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32 |
| #4 | Primary | 259.71' | 18.0" Round Culvert L= 65.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 259.71' / 258.88' S= 0.0128 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.77 sf |

Discarded OutFlow Max=0.26 cfs @ 10.29 hrs HW=258.78' (Free Discharge)

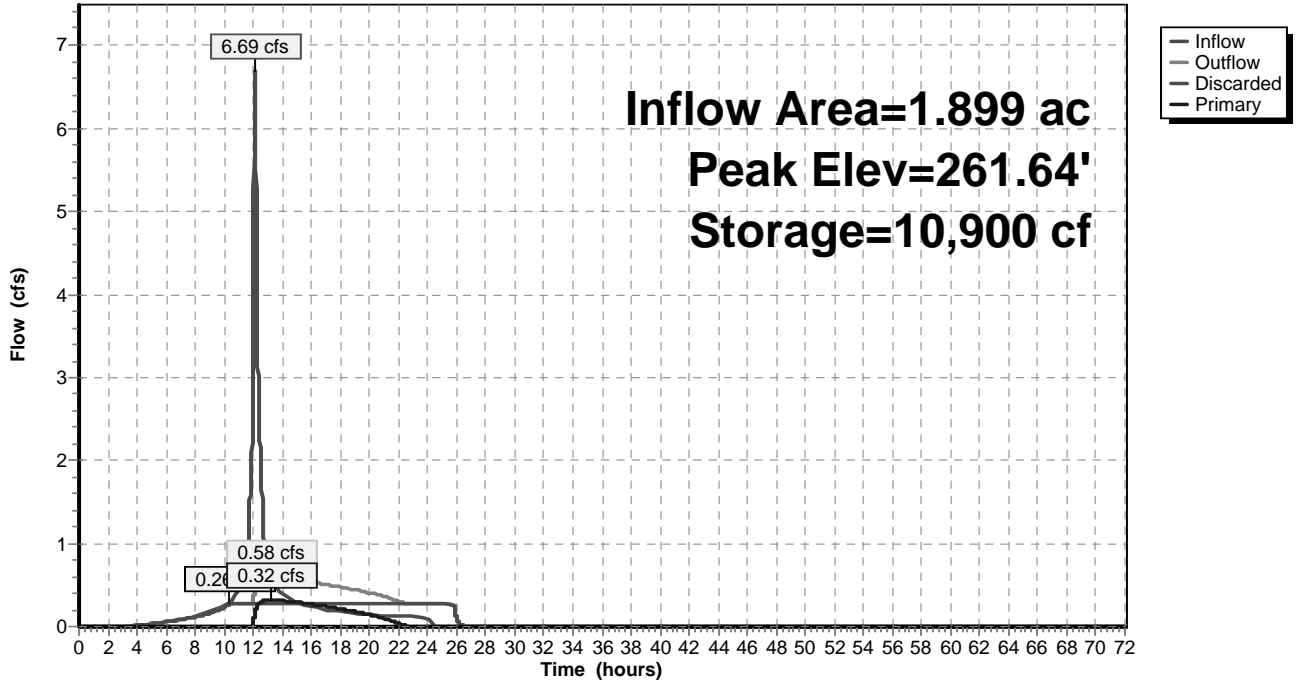
↑ **1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=0.32 cfs @ 13.21 hrs HW=261.64' (Free Discharge)

↑ **4=Culvert** (Passes 0.32 cfs of 9.23 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.32 cfs @ 6.46 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 11: Infiltration A

Hydrograph



Summary for Subcatchment 12: A'2

Runoff = 21.93 cfs @ 12.10 hrs, Volume= 1.789 af, Depth= 2.69"

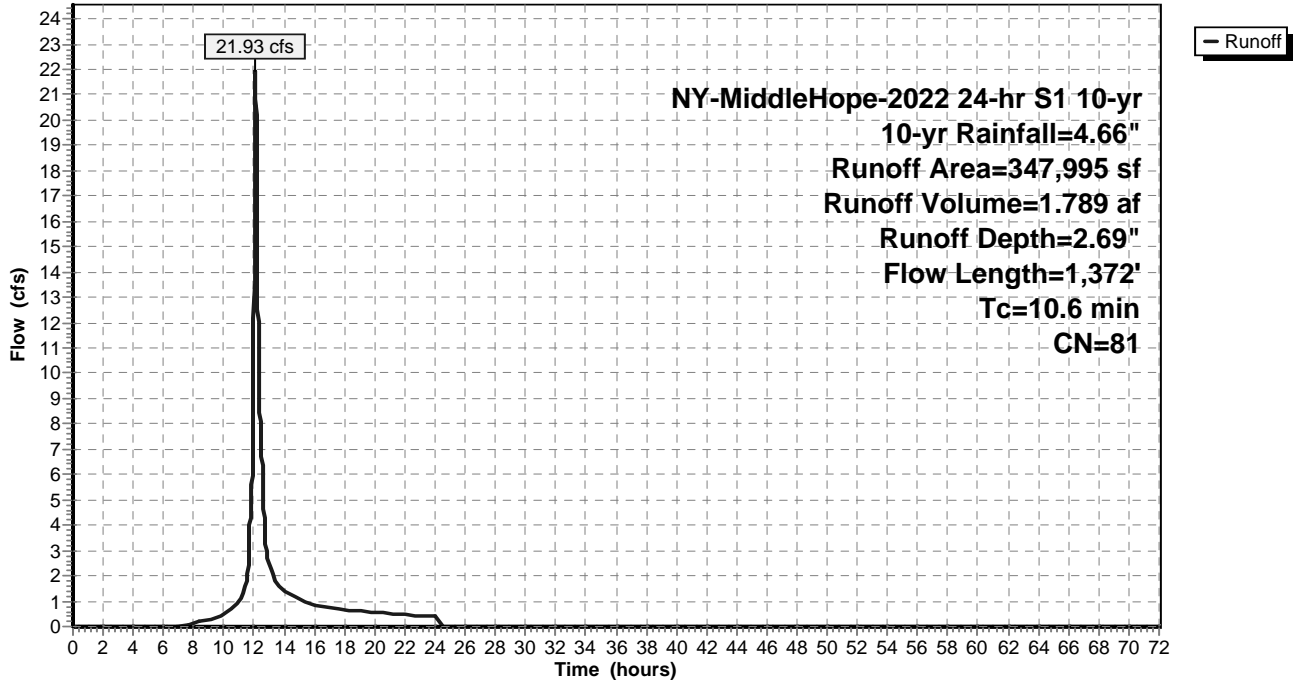
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 10-yr 10-yr Rainfall=4.66"

| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 30,476 | 98 | Ex. Impervious (Offsite) |
| 52,080 | 84 | 50-75% Grass cover, Fair, HSG D |
| 209,643 | 79 | Woods, Fair, HSG D |
| * 638 | 77 | Brush, Fair, HSG D (Dev. Area) |
| 15,916 | 77 | Brush, Fair, HSG D |
| 3,482 | 79 | 50-75% Grass cover, Fair, HSG C |
| 13,103 | 73 | Woods, Fair, HSG C |
| * 1,127 | 70 | Brush, Fair, HSG C (Dev. Area) |
| * 1,934 | 98 | Prop. Impervious |
| 5,176 | 80 | >75% Grass cover, Good, HSG D |
| 14,420 | 74 | >75% Grass cover, Good, HSG C |
| 347,995 | 81 | Weighted Average |
| 315,585 | | 90.69% Pervious Area |
| 32,410 | | 9.31% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.5 | 100 | 0.0850 | 0.30 | | Sheet Flow, Sheet1 Grass: Short n= 0.150 P2= 3.15" |
| 4.4 | 532 | 0.1650 | 2.03 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.3 | 352 | 0.0966 | 17.03 | 408.69 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 0.4 | 388 | 0.0773 | 15.23 | 365.59 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 10.6 | 1,372 | Total | | | |

Subcatchment 12: A'2

Hydrograph



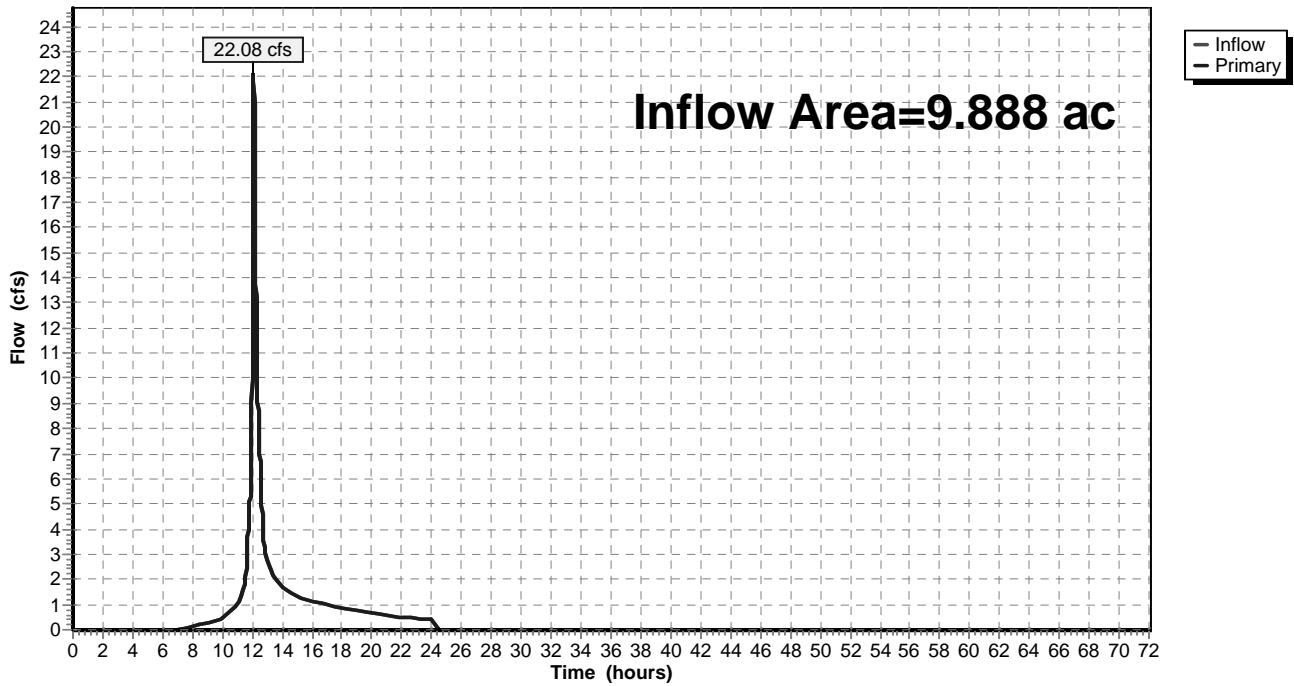
Summary for Link 13: Ex. 36" CMP

Inflow Area = 9.888 ac, 20.23% Impervious, Inflow Depth = 2.39" for 10-yr event
Inflow = 22.08 cfs @ 12.10 hrs, Volume= 1.971 af
Primary = 22.08 cfs @ 12.10 hrs, Volume= 1.971 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 13: Ex. 36" CMP

Hydrograph



Summary for Subcatchment 14: B'1

Runoff = 4.06 cfs @ 12.17 hrs, Volume= 0.393 af, Depth= 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 10-yr 10-yr Rainfall=4.66"

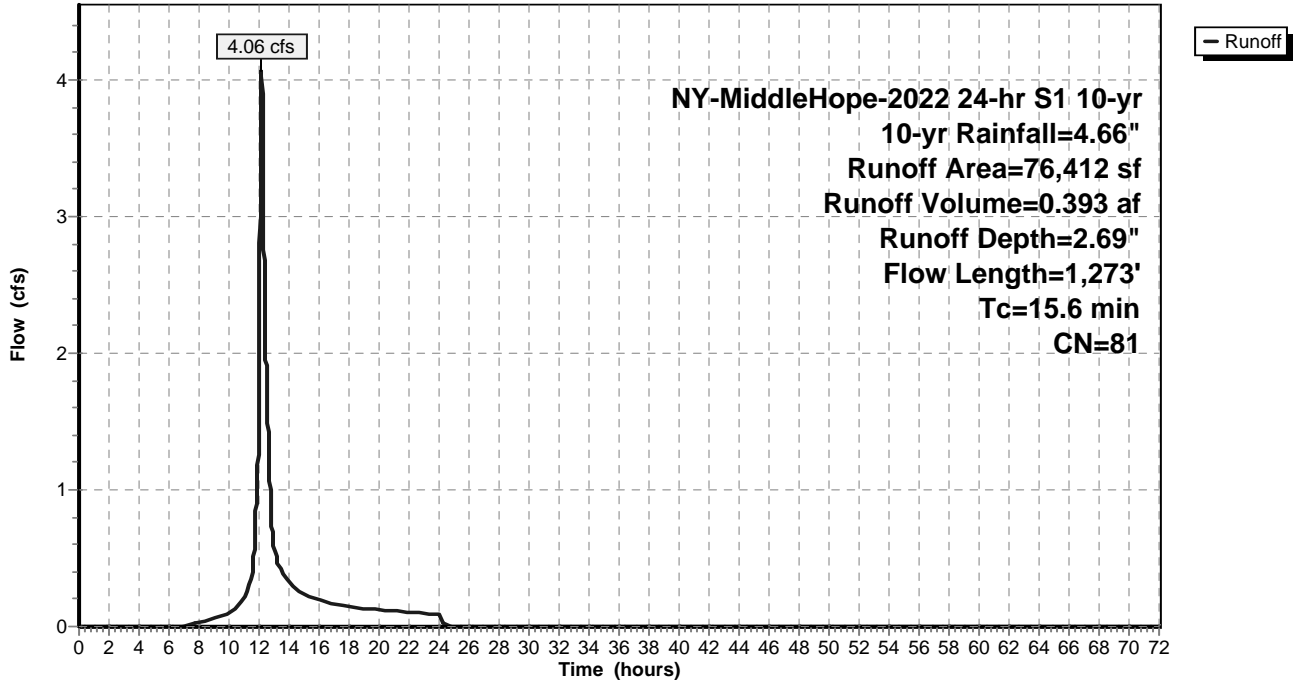
| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 4,655 | 98 | Ex. Impervious (Offsite) |
| 6,682 | 84 | 50-75% Grass cover, Fair, HSG D |
| 48,305 | 79 | Woods, Fair, HSG D |
| * 10,713 | 77 | Brush, Fair, HSG D |
| 402 | 79 | 50-75% Grass cover, Fair, HSG C |
| * 1,287 | 98 | Prop. Impervious |
| 3,109 | 80 | >75% Grass cover, Good, HSG D |
| 1,259 | 74 | >75% Grass cover, Good, HSG C |
| 76,412 | 81 | Weighted Average |
| 70,470 | | 92.22% Pervious Area |
| 5,942 | | 7.78% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 9.9 | 100 | 0.1400 | 0.17 | | Sheet Flow, Sheet1 Woods: Light underbrush n= 0.400 P2= 3.15" |
| 3.2 | 410 | 0.1850 | 2.15 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.6 | 103 | 0.1550 | 2.76 | | Shallow Concentrated Flow, Shallow2 Short Grass Pasture Kv= 7.0 fps |
| 1.2 | 158 | 0.2030 | 2.25 | | Shallow Concentrated Flow, Shallow3 Woodland Kv= 5.0 fps |
| 0.1 | 12 | 0.2083 | 3.19 | | Shallow Concentrated Flow, Shallow4 Short Grass Pasture Kv= 7.0 fps |
| 0.1 | 52 | 0.0577 | 6.52 | 19.57 | Channel Flow, Channel1 Area= 3.0 sf Perim= 4.8' r= 0.63' n= 0.040 Earth, cobble bottom, clean sides |
| 0.2 | 206 | 0.0770 | 16.49 | 29.15 | Pipe Channel, Pipe1 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior |
| 0.2 | 206 | 0.0553 | 13.98 | 24.70 | Pipe Channel, Pipe2 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior |
| 0.1 | 26 | 0.0384 | 5.32 | 15.96 | Channel Flow, Channel2 Area= 3.0 sf Perim= 4.8' r= 0.63' n= 0.040 Earth, cobble bottom, clean sides |

15.6 1,273 Total

Subcatchment 14: B'1

Hydrograph



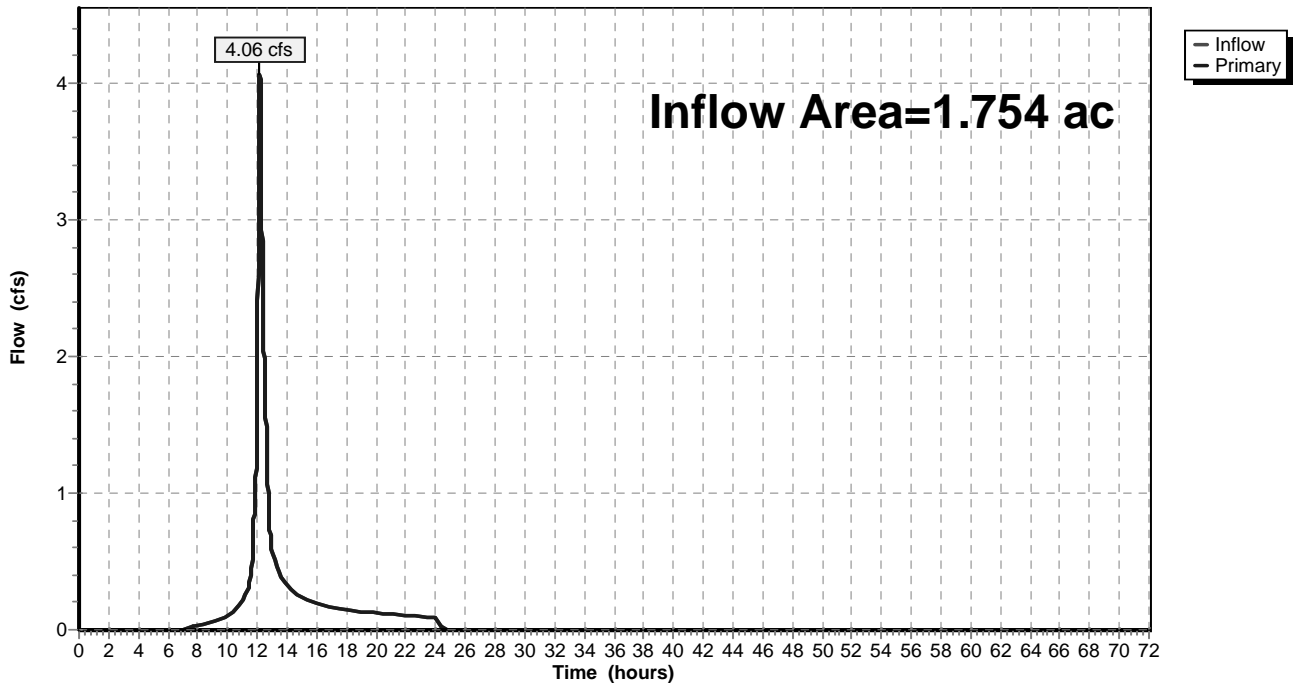
Summary for Link 15: Ex. CB

Inflow Area = 1.754 ac, 7.78% Impervious, Inflow Depth = 2.69" for 10-yr event
Inflow = 4.06 cfs @ 12.17 hrs, Volume= 0.393 af
Primary = 4.06 cfs @ 12.17 hrs, Volume= 0.393 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 15: Ex. CB

Hydrograph



Summary for Subcatchment 10: A'1

Runoff = 11.76 cfs @ 12.10 hrs, Volume= 1.127 af, Depth= 7.12"

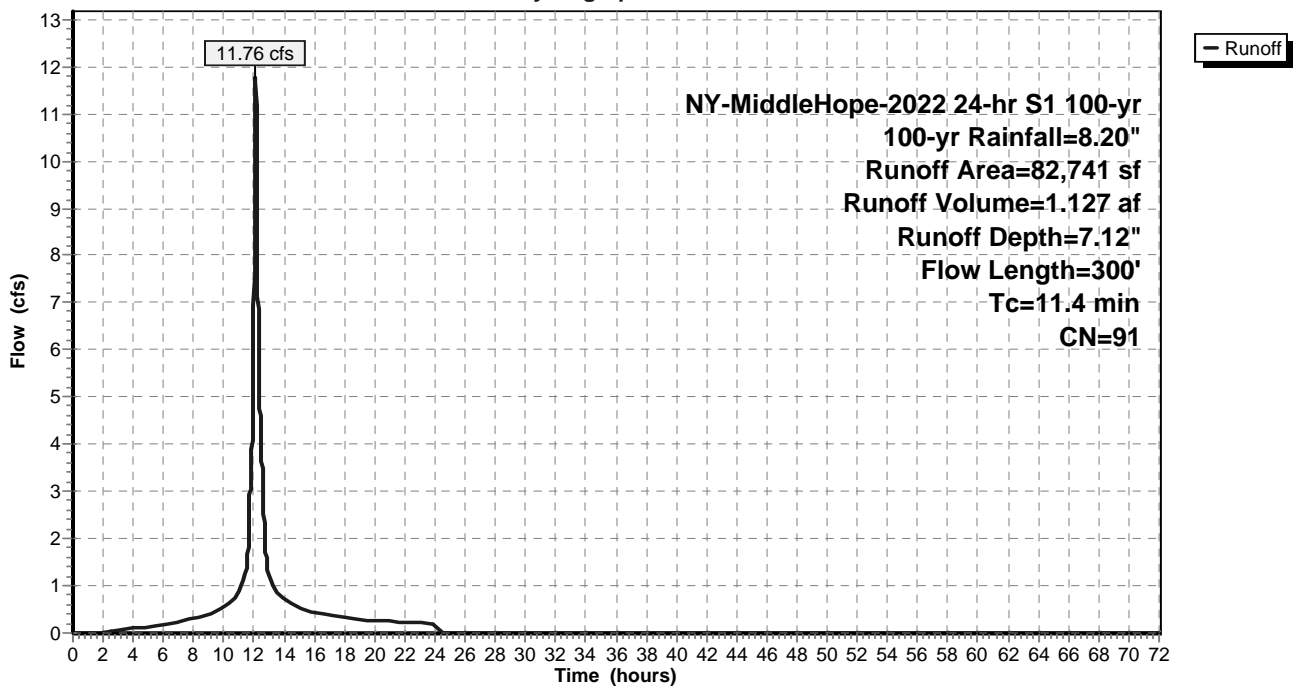
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 100-yr 100-yr Rainfall=8.20"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| * 54,746 | 98 | Proposed Impervious |
| 15,822 | 74 | >75% Grass cover, Good, HSG C |
| 11,649 | 80 | >75% Grass cover, Good, HSG D |
| 312 | 79 | Woods, Fair, HSG D |
| 212 | 73 | Woods, Fair, HSG C |
| 82,741 | 91 | Weighted Average |
| 27,995 | | 33.83% Pervious Area |
| 54,746 | | 66.17% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.9 | 80 | 0.0100 | 0.12 | | Sheet Flow, Sheet1 Grass: Short n= 0.150 P2= 3.15" |
| 0.5 | 220 | 0.0770 | 7.54 | 22.61 | Channel Flow, Channel1 Area= 3.0 sf Perim= 4.8' r= 0.63' n= 0.040 Earth, cobble bottom, clean sides |
| 11.4 | 300 | Total | | | |

Subcatchment 10: A'1

Hydrograph



Summary for Pond 11: Infiltration A

Inflow Area = 1.899 ac, 66.17% Impervious, Inflow Depth = 7.12" for 100-yr event
 Inflow = 11.76 cfs @ 12.10 hrs, Volume= 1.127 af
 Outflow = 8.79 cfs @ 12.21 hrs, Volume= 1.127 af, Atten= 25%, Lag= 6.2 min
 Discarded = 0.26 cfs @ 7.57 hrs, Volume= 0.511 af
 Primary = 8.52 cfs @ 12.21 hrs, Volume= 0.616 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 262.72' @ 12.21 hrs Surf.Area= 5,714 sf Storage= 13,862 cf
 Flood Elev= 266.00' Surf.Area= 5,714 sf Storage= 13,928 cf

Plug-Flow detention time= 153.9 min calculated for 1.127 af (100% of inflow)
 Center-of-Mass det. time= 153.9 min (935.3 - 781.3)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|---|
| #1 | 258.71' | 4,929 cf | 5.33'W x 7.00'L x 4.04'H Prismaoid x 125 18,842 cf Overall - 6,520 cf Embedded = 12,322 cf x 40.0% Voids |
| #2 | 259.71' | 6,520 cf | Cultec R-330XL x 125 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap |
| #3 | 258.71' | 1,175 cf | 6.00'W x 7.00'L x 4.04'H Prismaoid - IR x 25 4,242 cf Overall - 1,304 cf Embedded = 2,938 cf x 40.0% Voids |
| #4 | 259.71' | 1,304 cf | Cultec R-330XL-IR x 25 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap |
| | | 13,928 cf | Total Available Storage |

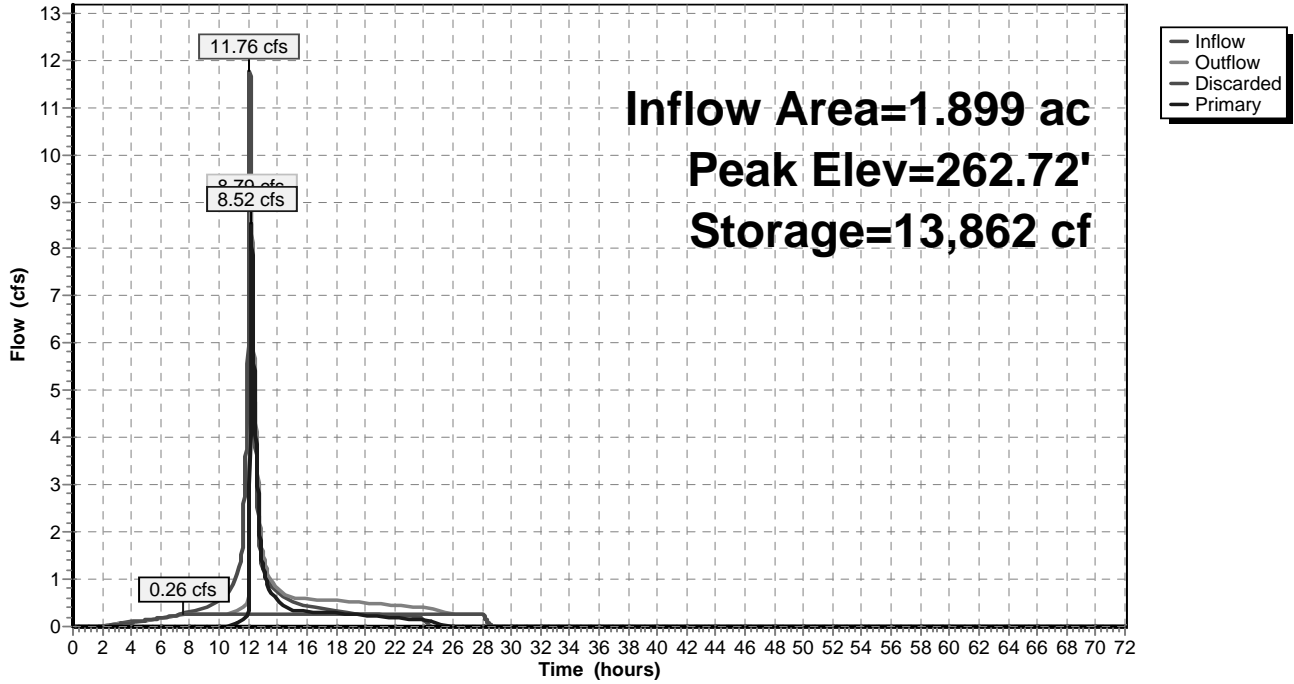
| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|--|
| #1 | Discarded | 258.71' | 2.000 in/hr Exfiltration over Horizontal area |
| #2 | Device 4 | 259.71' | 3.0" Vert. Orifice/Grate C= 0.600 |
| #3 | Device 4 | 261.71' | 3.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32 |
| #4 | Primary | 259.71' | 18.0" Round Culvert L= 65.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 259.71' / 258.88' S= 0.0128 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.77 sf |

Discarded OutFlow Max=0.26 cfs @ 7.57 hrs HW=258.78' (Free Discharge)
 ↳ **1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=8.52 cfs @ 12.21 hrs HW=262.72' (Free Discharge)
 ↳ **4=Culvert** (Passes 8.52 cfs of 12.79 cfs potential flow)
 ↳ ↳ **2=Orifice/Grate** (Orifice Controls 0.40 cfs @ 8.18 fps)
 ↳ ↳ ↳ **3=Broad-Crested Rectangular Weir** (Weir Controls 8.12 cfs @ 2.68 fps)

Pond 11: Infiltration A

Hydrograph



Summary for Subcatchment 12: A'2

Runoff = 44.54 cfs @ 12.10 hrs, Volume= 3.949 af, Depth= 5.93"

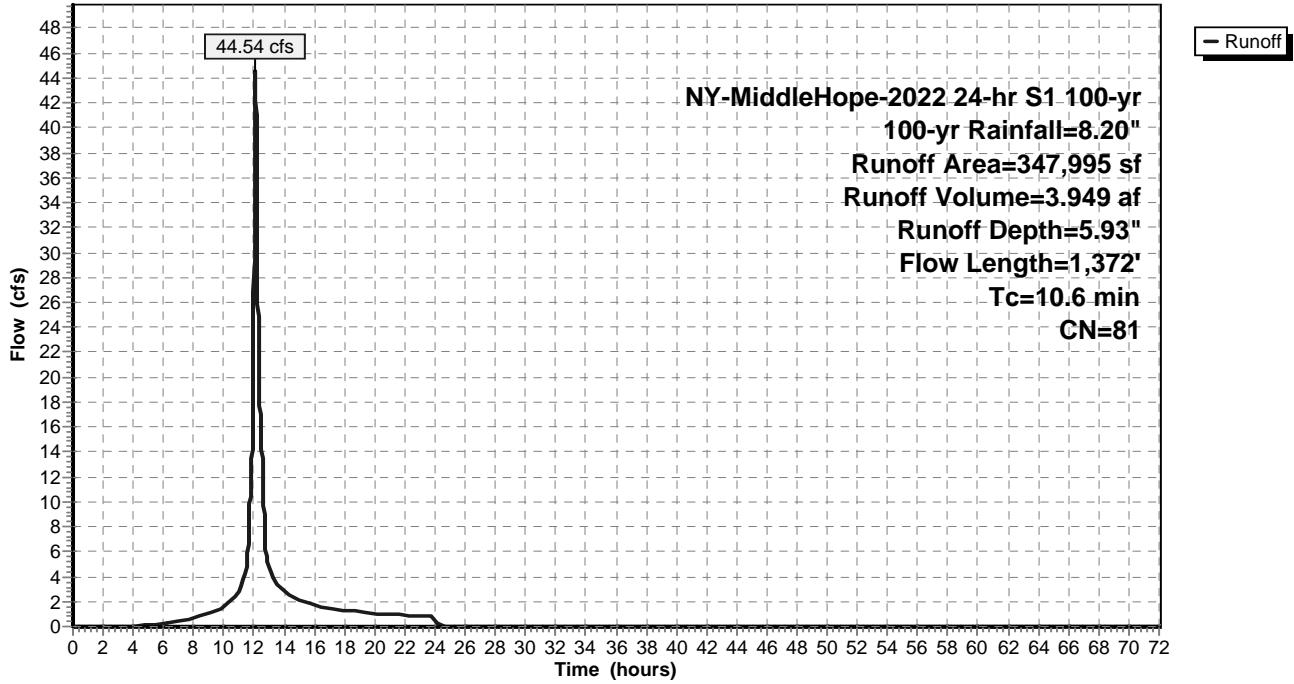
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 100-yr 100-yr Rainfall=8.20"

| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 30,476 | 98 | Ex. Impervious (Offsite) |
| 52,080 | 84 | 50-75% Grass cover, Fair, HSG D |
| 209,643 | 79 | Woods, Fair, HSG D |
| * 638 | 77 | Brush, Fair, HSG D (Dev. Area) |
| 15,916 | 77 | Brush, Fair, HSG D |
| 3,482 | 79 | 50-75% Grass cover, Fair, HSG C |
| 13,103 | 73 | Woods, Fair, HSG C |
| * 1,127 | 70 | Brush, Fair, HSG C (Dev. Area) |
| * 1,934 | 98 | Prop. Impervious |
| 5,176 | 80 | >75% Grass cover, Good, HSG D |
| 14,420 | 74 | >75% Grass cover, Good, HSG C |
| 347,995 | 81 | Weighted Average |
| 315,585 | | 90.69% Pervious Area |
| 32,410 | | 9.31% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.5 | 100 | 0.0850 | 0.30 | | Sheet Flow, Sheet1 Grass: Short n= 0.150 P2= 3.15" |
| 4.4 | 532 | 0.1650 | 2.03 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.3 | 352 | 0.0966 | 17.03 | 408.69 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 0.4 | 388 | 0.0773 | 15.23 | 365.59 | Channel Flow, Channel1 Area= 24.0 sf Perim= 13.4' r= 1.79' n= 0.040 Earth, cobble bottom, clean sides |
| 10.6 | 1,372 | Total | | | |

Subcatchment 12: A'2

Hydrograph



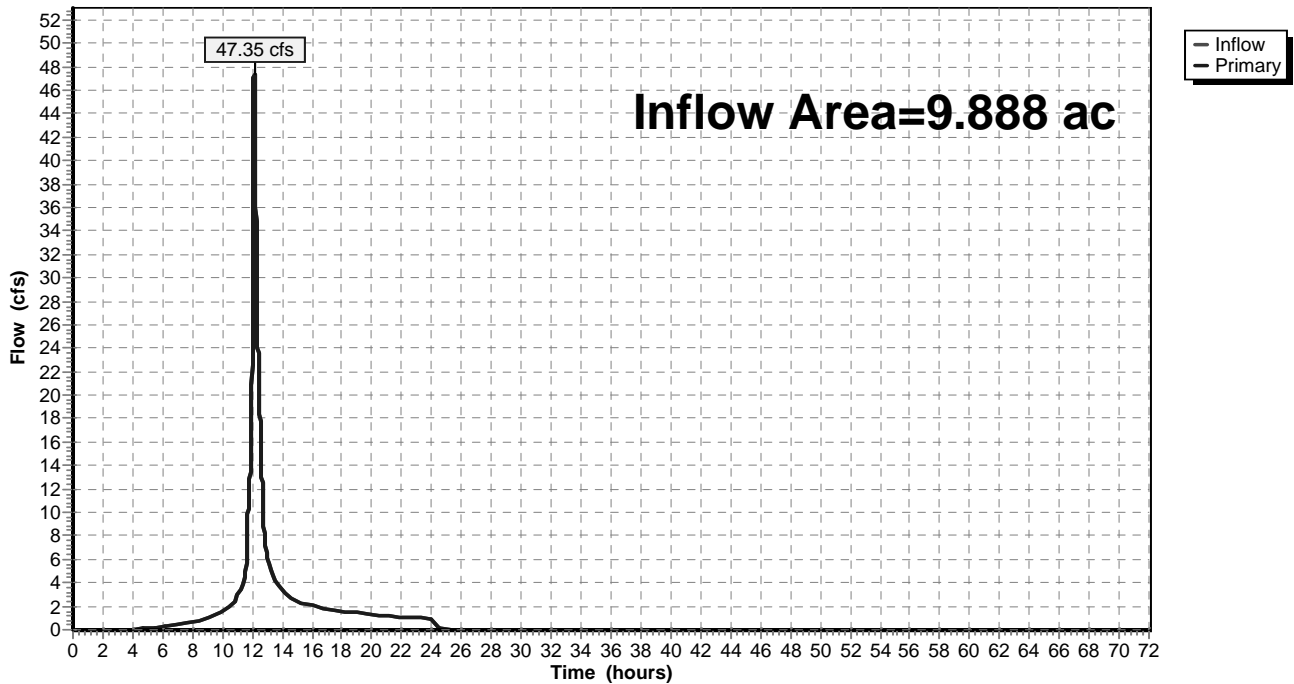
Summary for Link 13: Ex. 36" CMP

Inflow Area = 9.888 ac, 20.23% Impervious, Inflow Depth = 5.54" for 100-yr event
Inflow = 47.35 cfs @ 12.12 hrs, Volume= 4.565 af
Primary = 47.35 cfs @ 12.12 hrs, Volume= 4.565 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 13: Ex. 36" CMP

Hydrograph



Summary for Subcatchment 14: B'1

Runoff = 8.35 cfs @ 12.16 hrs, Volume= 0.867 af, Depth= 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-MiddleHope-2022 24-hr S1 100-yr 100-yr Rainfall=8.20"

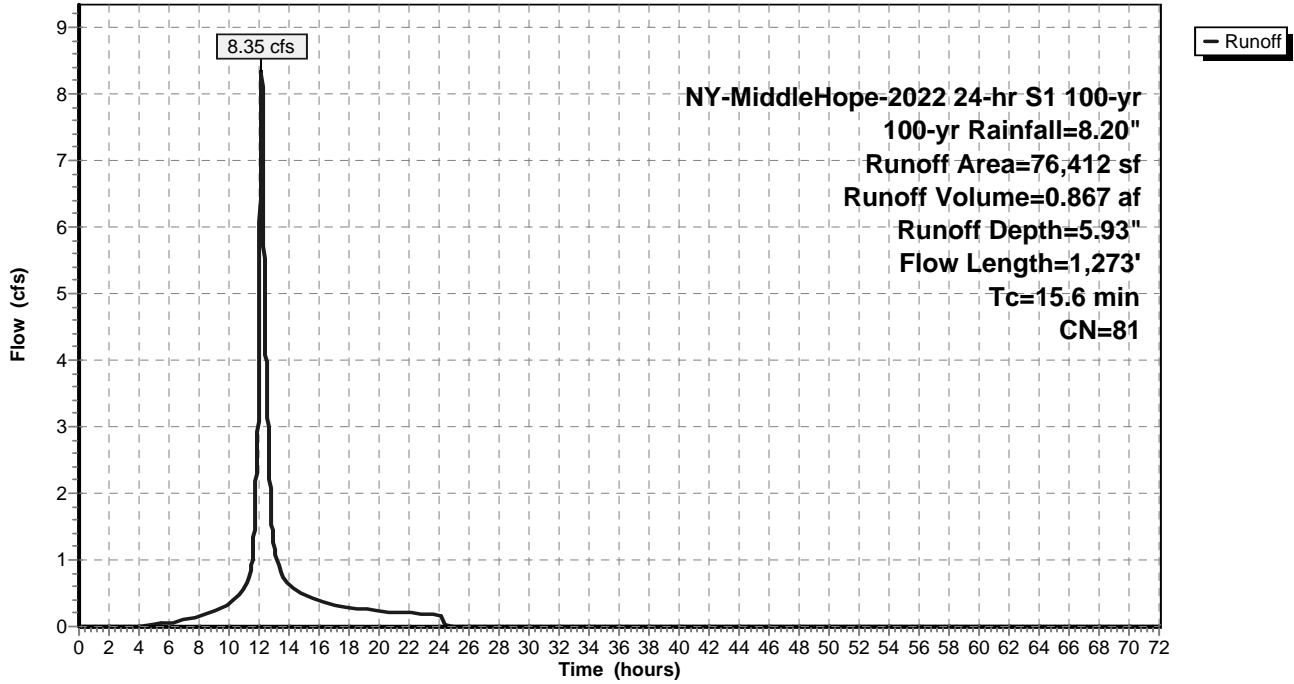
| Area (sf) | CN | Description |
|-----------|----|---------------------------------|
| * 4,655 | 98 | Ex. Impervious (Offsite) |
| 6,682 | 84 | 50-75% Grass cover, Fair, HSG D |
| 48,305 | 79 | Woods, Fair, HSG D |
| * 10,713 | 77 | Brush, Fair, HSG D |
| 402 | 79 | 50-75% Grass cover, Fair, HSG C |
| * 1,287 | 98 | Prop. Impervious |
| 3,109 | 80 | >75% Grass cover, Good, HSG D |
| 1,259 | 74 | >75% Grass cover, Good, HSG C |
| 76,412 | 81 | Weighted Average |
| 70,470 | | 92.22% Pervious Area |
| 5,942 | | 7.78% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 9.9 | 100 | 0.1400 | 0.17 | | Sheet Flow, Sheet1 Woods: Light underbrush n= 0.400 P2= 3.15" |
| 3.2 | 410 | 0.1850 | 2.15 | | Shallow Concentrated Flow, Shallow1 Woodland Kv= 5.0 fps |
| 0.6 | 103 | 0.1550 | 2.76 | | Shallow Concentrated Flow, Shallow2 Short Grass Pasture Kv= 7.0 fps |
| 1.2 | 158 | 0.2030 | 2.25 | | Shallow Concentrated Flow, Shallow3 Woodland Kv= 5.0 fps |
| 0.1 | 12 | 0.2083 | 3.19 | | Shallow Concentrated Flow, Shallow4 Short Grass Pasture Kv= 7.0 fps |
| 0.1 | 52 | 0.0577 | 6.52 | 19.57 | Channel Flow, Channel1 Area= 3.0 sf Perim= 4.8' r= 0.63' n= 0.040 Earth, cobble bottom, clean sides |
| 0.2 | 206 | 0.0770 | 16.49 | 29.15 | Pipe Channel, Pipe1 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior |
| 0.2 | 206 | 0.0553 | 13.98 | 24.70 | Pipe Channel, Pipe2 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior |
| 0.1 | 26 | 0.0384 | 5.32 | 15.96 | Channel Flow, Channel2 Area= 3.0 sf Perim= 4.8' r= 0.63' n= 0.040 Earth, cobble bottom, clean sides |

15.6 1,273 Total

Subcatchment 14: B'1

Hydrograph



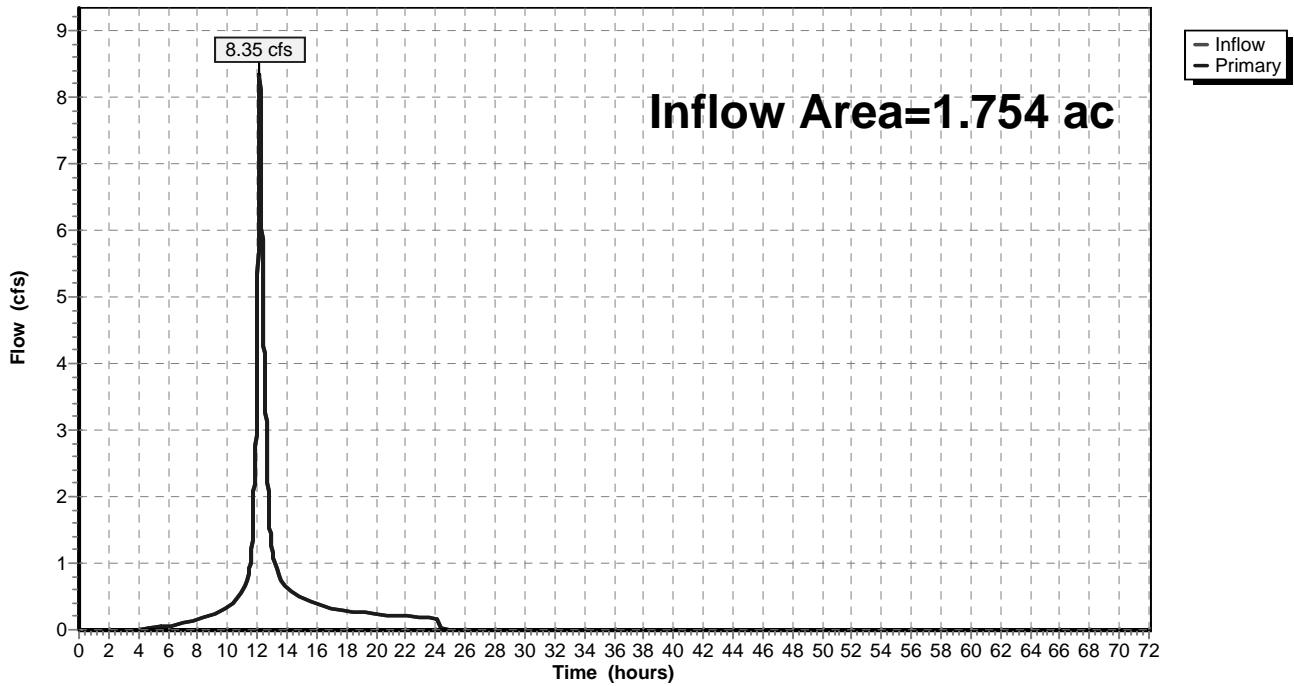
Summary for Link 15: Ex. CB

Inflow Area = 1.754 ac, 7.78% Impervious, Inflow Depth = 5.93" for 100-yr event
Inflow = 8.35 cfs @ 12.16 hrs, Volume= 0.867 af
Primary = 8.35 cfs @ 12.16 hrs, Volume= 0.867 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 15: Ex. CB

Hydrograph



Appendix K:
Storage Tables



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Stage-Area-Storage for Pond 11: Infiltration A

| Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) | Elevation (feet) | Horizontal (sq-ft) | Storage (cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 257.71 | 5,714 | 0 | 263.01 | 5,714 | 13,928 |
| 257.81 | 5,714 | 229 | 263.11 | 5,714 | 13,928 |
| 257.91 | 5,714 | 457 | 263.21 | 5,714 | 13,928 |
| 258.01 | 5,714 | 686 | 263.31 | 5,714 | 13,928 |
| 258.11 | 5,714 | 914 | 263.41 | 5,714 | 13,928 |
| 258.21 | 5,714 | 1,143 | 263.51 | 5,714 | 13,928 |
| 258.31 | 5,714 | 1,371 | 263.61 | 5,714 | 13,928 |
| 258.41 | 5,714 | 1,600 | 263.71 | 5,714 | 13,928 |
| 258.51 | 5,714 | 1,828 | 263.81 | 5,714 | 13,928 |
| 258.61 | 5,714 | 2,057 | 263.91 | 5,714 | 13,928 |
| 258.71 | 5,714 | 2,286 | 264.01 | 5,714 | 13,928 |
| 258.81 | 5,714 | 2,764 | 264.11 | 5,714 | 13,928 |
| 258.91 | 5,714 | 3,240 | 264.21 | 5,714 | 13,928 |
| 259.01 | 5,714 | 3,713 | 264.31 | 5,714 | 13,928 |
| 259.11 | 5,714 | 4,186 | 264.41 | 5,714 | 13,928 |
| 259.21 | 5,714 | 4,658 | 264.51 | 5,714 | 13,928 |
| 259.31 | 5,714 | 5,128 | 264.61 | 5,714 | 13,928 |
| 259.41 | 5,714 | 5,592 | 264.71 | 5,714 | 13,928 |
| 259.51 | 5,714 | 6,051 | 264.81 | 5,714 | 13,928 |
| 259.61 | 5,714 | 6,509 | 264.91 | 5,714 | 13,928 |
| 259.71 | 5,714 | 6,965 | | | |
| 259.81 | 5,714 | 7,420 | | | |
| 259.91 | 5,714 | 7,871 | | | |
| 260.01 | 5,714 | 8,317 | | | |
| 260.11 | 5,714 | 8,754 | | | |
| 260.21 | 5,714 | 9,182 | | | |
| 260.31 | 5,714 | 9,602 | | | |
| 260.41 | 5,714 | 10,012 | | | |
| 260.51 | 5,714 | 10,412 | | | |
| 260.61 | 5,714 | 10,800 | | | |
| 260.71 | 5,714 | 11,174 | | | |
| 260.81 | 5,714 | 11,531 | | | |
| 260.91 | 5,714 | 11,866 | | | |
| 261.01 | 5,714 | 12,173 | | | |
| 261.11 | 5,714 | 12,448 | | | |
| 261.21 | 5,714 | 12,693 | | | |
| 261.31 | 5,714 | 12,922 | | | |
| 261.41 | 5,714 | 13,150 | | | |
| 261.51 | 5,714 | 13,379 | | | |
| 261.61 | 5,714 | 13,608 | | | |
| 261.71 | 5,714 | 13,836 | | | |
| 261.81 | 5,714 | 13,928 | | | |
| 261.91 | 5,714 | 13,928 | | | |
| 262.01 | 5,714 | 13,928 | | | |
| 262.11 | 5,714 | 13,928 | | | |
| 262.21 | 5,714 | 13,928 | | | |
| 262.31 | 5,714 | 13,928 | | | |
| 262.41 | 5,714 | 13,928 | | | |
| 262.51 | 5,714 | 13,928 | | | |
| 262.61 | 5,714 | 13,928 | | | |
| 262.71 | 5,714 | 13,928 | | | |
| 262.81 | 5,714 | 13,928 | | | |
| 262.91 | 5,714 | 13,928 | | | |

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Appendix L:
Calculations



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Provided Channel Protection Volume (CPv)

Computation for the Channel Protection Storage Volume

(see New York State Stormwater Management Design Manual, page 8-7 for example)

1-Year Storm Rainfall: P = 2.61 in inches
 Initial Abstraction: Ia = 200/CN - 2
 Time of Concentration: TC from Hydrological Analysis
 Unit Peak Discharge: Qu from Exhibit 4-III of TR-55
 Outflow/Inflow Ratio: Qo/Qi from Stormwater Design Manual

Runoff Flow Depth: Q from Hydrological Analysis
 Drainage Area: A from Hydrological Analysis
 Volume of Runoff: Vr = Q*A In inches

$$Vs/Vr = 0.683 - 1.43 (Qo/Qi) + 1.64 (Qo/Qi)^2 - 0.804(Qo/Qi)^3$$

Storage Volume: Vs Channel Protection Volume (CPv)

| DA | Area (s.f) | CN | TC (hours) | Ia | Ia/P | Qu | Qo/Qi | Vs/Vr | Q (in) | Vr | Vs |
|-----|------------|----|------------|------|------|-----|-------|-------|--------|-------|-------|
| A'1 | 54,422 | 91 | 0.19 | 0.20 | 0.08 | 600 | 0.028 | 0.644 | 1.71 | 7,755 | 4,996 |

* CPv criteria not required for redevelopment project.

* Approximately 44% of the tributary impervious cover within the drainage area is proposed (new) impervious

* Required CPv = 44% of calculated CPv for total drainage area (existing & proposed impervious cover)

Total CPv Required: 2,198 cubic feet
0.050 acre-feet

Required Channel Protection Volume (CPv)

(see Appendix G - Storage Tables)

| Facility | Chamber Invert Elevation | Weir Elevation | Volume (c.f.) |
|--------------------------|--------------------------|----------------|---------------|
| Underground Infiltration | 258.71 | 260.71 | 13,836 |

* Volumen includes void space within the chambers and drainage course (40%)

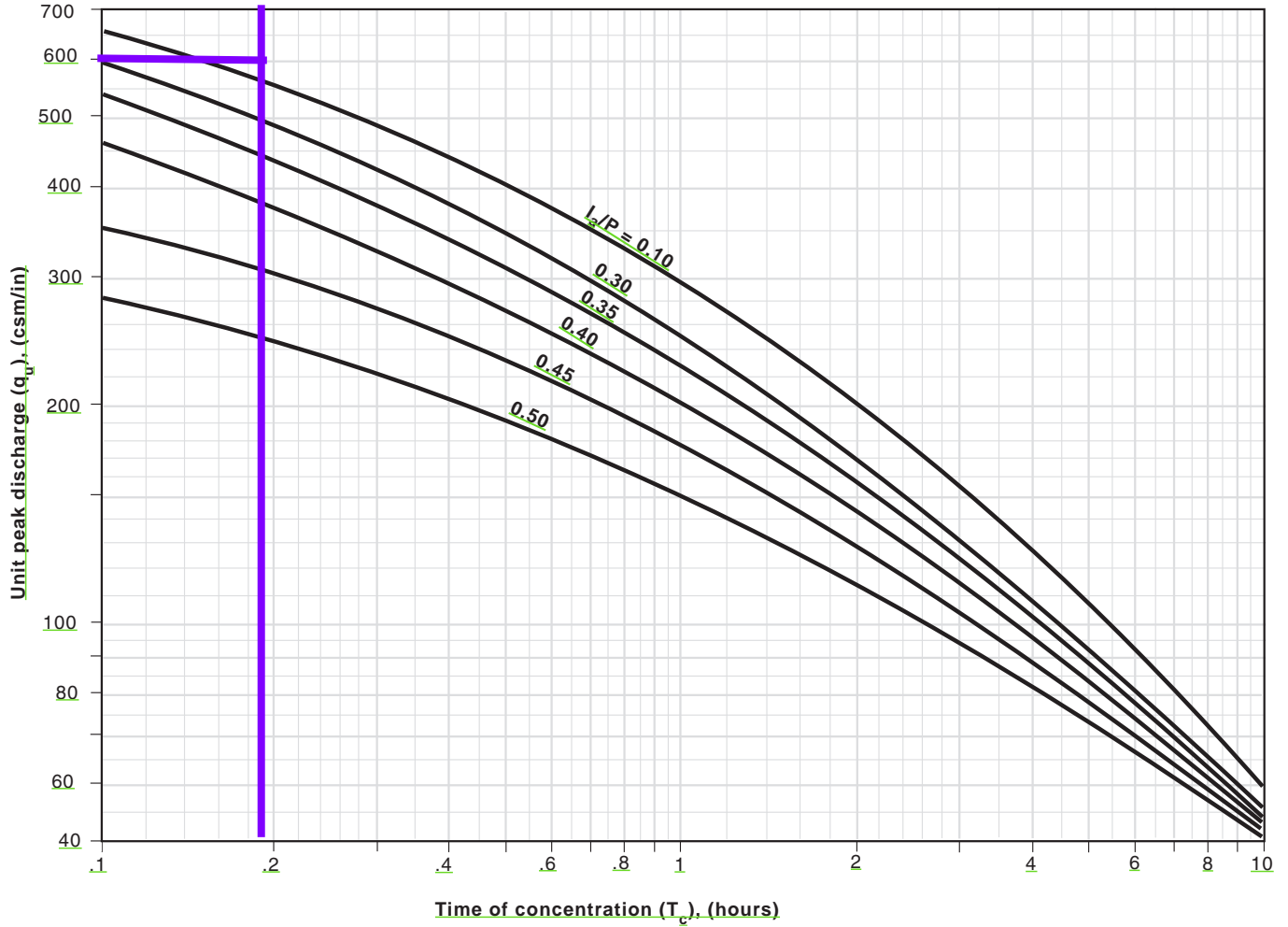
Total CPv Provided: 13,836 cubic feet
0.318 acre-feet

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Project No.: 4762
Project Name: UHaul MiddleHope
Date: February 3, 2022

Exhibit 4-III Unit peak discharge (q_u) for NRCS (SCS) type III rainfall distribution



While the TR-55 short-cut method reports to incorporate multiple stage structures, experience has shown that an additional 10-15% storage is required when multiple levels of extended detention are provided.

Figure B.1 Detention Time vs. Discharge Ratios (Source: MDE, 2000)

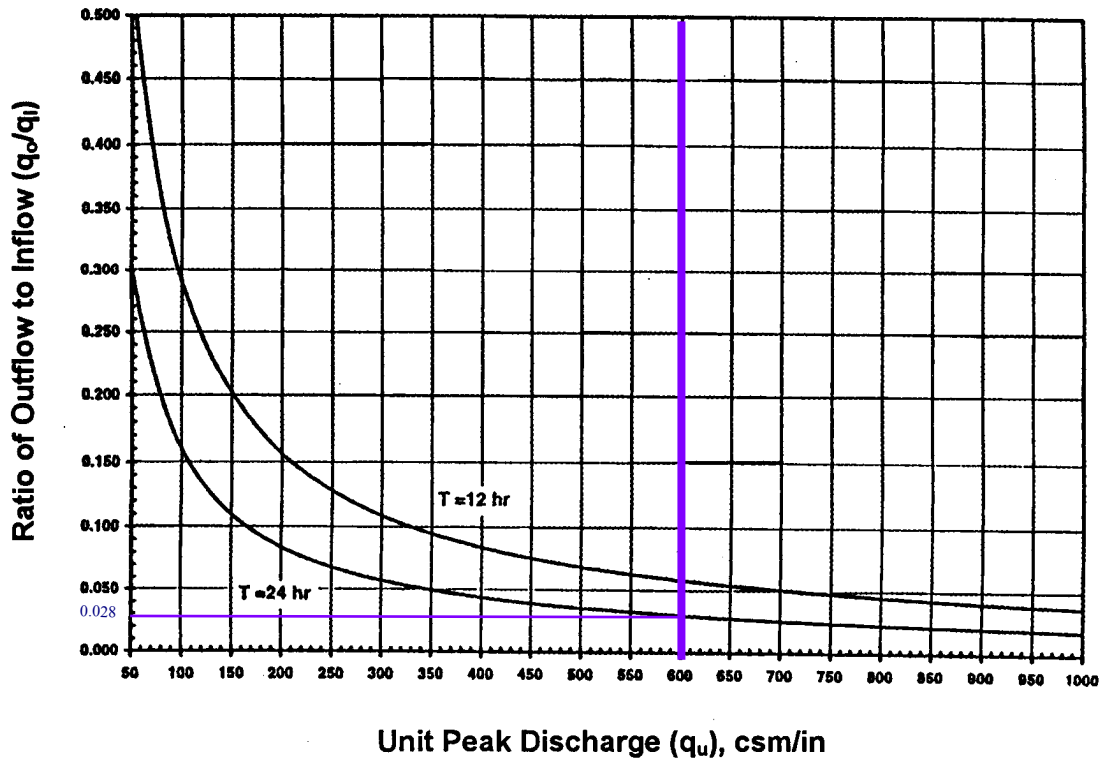
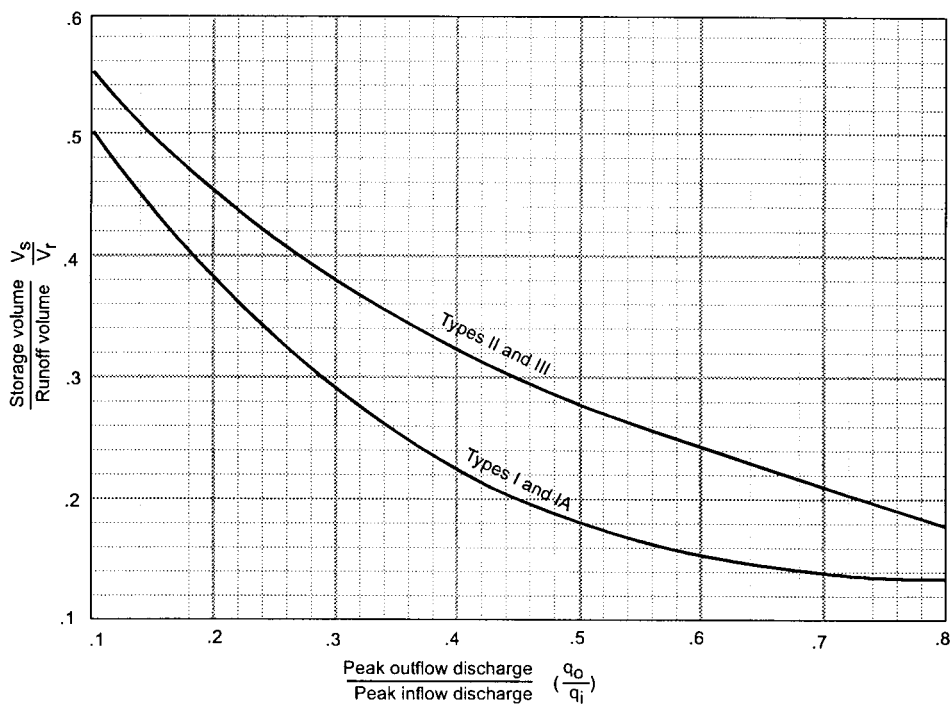


Figure B.2 Approximate Detention Basin Routing For Rainfall Types I, IA, II, and III (Source: NRCS, 1986)



Appendix M:
Contact Information



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Contact Information

The following certification shall be signed by each contractor and subcontractor responsible for installing, repairing, replacing, inspecting, and maintaining the erosion and sediment control practices included in this SWPPP, and the contractors and subcontractors that will be responsible for constructing the post-construction stormwater management practices included in this SWPPP.

Design Engineer:

**Mercurio-Norton-Tarolli-Marshall (MNTM)
Engineering & Land Surveying, P.C.**
PO Box 166 – 45 Main Street
Pine Bush, New York 12566
(845) 744-2630

NYSDEC – Main:

**New York State Department of Environmental Conservation
Bureau of Water Permits**
625 Broadway, 4th Floor
Albany, New York 12233-3505
(518) 402-8013

NYSDEC – Regional:

**New York State Department of Environmental Conservation
Region 3 – New Paltz Office**
21 South Putt Corners Road
New Paltz, New York 12561
(518) 256-3000

Municipal Authority:

**Town of Newburgh
Code Compliance Supervisor**
21 Hudson Valley Professional Plaza
Newburgh, New York 12550
(845) 564-7801



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WST LED

Architectural Wall Sconce



Catalog
Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

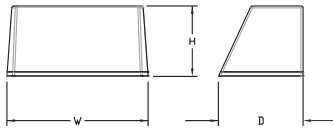
Luminaire

Height: 8-1/2"
(21.59 cm)

Width: 17"
(43.18 cm)

Depth: 10-3/16"
(25.9 cm)

Weight: 20 lbs
(9.1 kg)

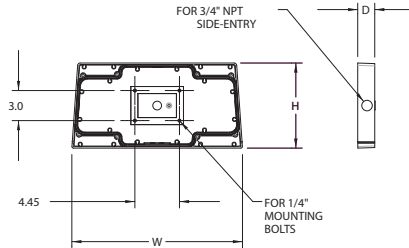


Optional Back Box (BBW)

Height: 4"
(10.2 cm)

Width: 5-1/2"
(14.0 cm)

Depth: 1-1/2"
(3.8 cm)



Introduction

The WST LED is designed with the specifier in mind. The traditional, trapezoidal shape offers a soft, non-pixelated light source for end-user visual comfort. For emergency egress lighting, the WST LED offers six battery options, including remote. For additional code compliance and energy savings, there is also a Bi-level motion sensor option. With so many standard and optional features, three lumen packages, and high LPW, the WST LED is your "go to" luminaire for most any application.

Ordering Information

EXAMPLE: WST LED P1 40K VF MVOLT DDBTXD

| WST LED | | | | | |
|---------|------------------------|-------------------|---------------------------------|-------------------------------------|---|
| Series | Performance Package | Color temperature | Distribution | Voltage | Mounting |
| WST LED | P1 1,500 Lumen package | 27K 2700 K | VF Visual comfort forward throw | MVOLT ¹ 277 ¹ | Shipped included (blank) Surface mounting bracket Shipped separately BBW Surface-mounted back box ² PBBW Premium surface-mounted back box ^{2,3} |
| | P2 3,000 Lumen package | 30K 3000 K | VW Visual comfort wide | 120 ¹ 347 | |
| | P3 6,000 Lumen package | 40K 4000 K | | 208 ¹ 480 | |
| | | 50K 5000 K | | 240 ¹ | |

| Options | | Finish (required) |
|---------------------------|---|----------------------------------|
| PE | Photoelectric cell, button type | DDBXD Dark bronze |
| PER | NEMA twist-lock receptacle only | DBLXD Black |
| PER5 | Five-wire receptacle only | DNAXD Natural aluminum |
| PER7 | Seven-wire receptacle only | DWHXD White |
| PIR | Motion/Ambient Light Sensor, 8-15' mounting height ⁴ | DSSXD Sandstone |
| PIR1FC3V | Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc ⁴ | DDBTXD Textured dark bronze |
| PIRH | 180° motion/ambient light sensor, 15-30' mounting height ⁴ | DBLBXD Textured black |
| PIRH1FC3V | Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc ⁴ | DNATXD Textured natural aluminum |
| SF | Single fuse (120, 277, 347V) ⁵ | DWHGXD Textured white |
| DF | Double fuse (208, 240, 480V) ⁵ | DSSTXD Textured sandstone |
| DS | Dual switching ⁶ | |
| E7WH | Emergency battery backup (7W) ⁷ | |
| E7WC | Emergency battery backup (cold, 7W) ^{7,8} | |
| E7WHR | Remote emergency battery backup (remote 7W) ^{7,9} | |
| E20WH | Emergency battery backup (20W) ^{7,10} | |
| E20WC | Emergency battery backup (cold, 20W) ^{7,8,10} | |
| E23WHR | Remote emergency battery backup (remote 20W) ^{7,9} | |
| LCE | Left side conduit entry ¹¹ | |
| RCE | Right side conduit entry ¹¹ | |
| Shipped separately | | |
| RBPW | Retrofit back plate ² | |
| VG | Vandal guard ¹² | |
| WG | Wire guard ¹² | |

Accessories

Ordered and shipped separately.

| | |
|-------------------|------------------------------------|
| WSTVCPBBW DDBXD U | Premium Surface - mounted back box |
| WSBBW DDBTX U | Surface - mounted back box |
| RBPW DDBXD U | Retrofit back plate |

NOTES

- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only, when ordering with button type photocell (PE), fusing (SF, DF), or dual switching (DS).
- Also available as a separate accessory; see accessories information.
- Top conduit entry standard.
- Not available with PE, PER, PER5, PER7, VG or WG.
- Not available with MVOLT option. Button photocell (PE) can be ordered with a dedicated voltage option. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.

- Not available with E7WH, E7WC, E7WHR, E20WC, E20WH, or E23WHR. Used with inverter system. Not available with 347/480V. Not available with PE, PER, PER5 & PER7.
- Not available with 347/480V.
- Battery pack rated for -20° to 40°C.
- Comes with PBBW.
- Warranty period is 3-years.
- Not available with BBW.
- Must order with fixture; not an accessory.



Emergency Battery Operation

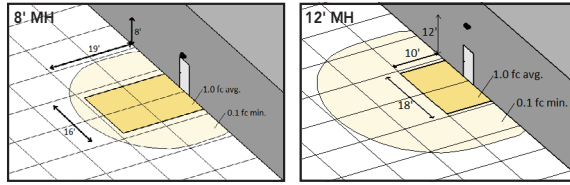
The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product.

All emergency backup configurations include an independent secondary driver with an integral relay to immediately detect AC power loss, meeting interpretations of [NFPA 70/NEC 2008 - 700.16](#)

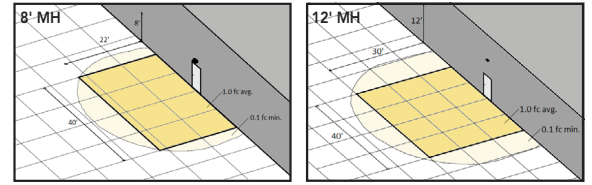
The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time supply power is lost, per [International Building Code Section 1006](#) and [NFPA 101 Life Safety Code Section 7.9](#), provided luminaires are mounted at an appropriate height and illuminate an open space with no major obstructions.

The examples below show illuminance of 1 fc average and 0.1 fc minimum of the P1 power package and VF distribution product in emergency mode.

10' x 10' Gridlines
8' and 12' Mounting Height



WST LED P1 27K VF MVOLT E7WH



WST LED P2 40K VF MVOLT E20WH

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts.

| Performance Package | System Watts (MVOLT ¹) | Dist. Type | 27K (2700K, 70 CRI) | | | | | 30K (3000K, 70 CRI) | | | | | 40K (4000K, 70 CRI) | | | | | 50K (5000K, 70 CRI) | | | | |
|---------------------|------------------------------------|------------|---------------------|---|---|---|-----|---------------------|---|---|---|-----|---------------------|---|---|---|-----|---------------------|---|---|---|-----|
| | | | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW |
| P1 | 12W | VF | 1,494 | 0 | 0 | 0 | 125 | 1,529 | 0 | 0 | 0 | 127 | 1,639 | 0 | 0 | 0 | 137 | 1,639 | 0 | 0 | 0 | 137 |
| | | VW | 1,513 | 0 | 0 | 0 | 126 | 1,548 | 0 | 0 | 0 | 129 | 1,660 | 0 | 0 | 0 | 138 | 1,660 | 0 | 0 | 0 | 138 |
| P2 | 25W | VF | 3,162 | 1 | 0 | 1 | 126 | 3,236 | 1 | 0 | 1 | 129 | 3,468 | 1 | 0 | 1 | 139 | 3,468 | 1 | 0 | 1 | 139 |
| | | VW | 3,202 | 1 | 0 | 0 | 128 | 3,277 | 1 | 0 | 0 | 131 | 3,512 | 1 | 0 | 0 | 140 | 3,512 | 1 | 0 | 0 | 140 |
| P3 | 50W | VF | 6,023 | 1 | 0 | 1 | 120 | 6,164 | 1 | 0 | 1 | 123 | 6,607 | 1 | 0 | 1 | 132 | 6,607 | 1 | 0 | 1 | 132 |
| | | VW | 6,100 | 1 | 0 | 1 | 122 | 6,242 | 1 | 0 | 1 | 125 | 6,691 | 1 | 0 | 1 | 134 | 6,691 | 1 | 0 | 1 | 134 |

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

| Ambient | | Lumen Multiplier |
|-------------|-------------|------------------|
| 0°C | 32°F | 1.03 |
| 10°C | 50°F | 1.02 |
| 20°C | 68°F | 1.01 |
| 25°C | 77°F | 1.00 |
| 30°C | 86°F | 0.99 |
| 40°C | 104°F | 0.98 |

Electrical Load

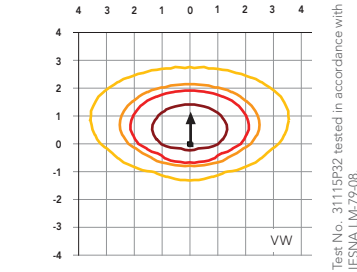
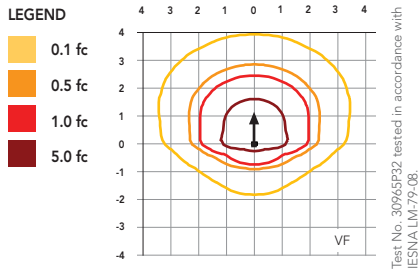
| Performance package | System Watts | Current (A) | | | | | |
|---------------------|--------------|-------------|------|------|------|------|------|
| | | 120 | 208 | 240 | 277 | 347 | 480 |
| P1 | 11 | 0.1 | 0.06 | 0.05 | 0.04 | --- | --- |
| | 14 | --- | --- | --- | --- | 0.04 | 0.03 |
| P1 DS | 14 | 0.12 | 0.07 | 0.06 | 0.06 | --- | --- |
| P2 | 25 | 0.21 | 0.13 | 0.11 | 0.1 | --- | --- |
| | 30 | --- | --- | --- | --- | 0.09 | 0.06 |
| P2 DS | 25 | 0.21 | 0.13 | 0.11 | 0.1 | --- | --- |
| P3 | 50 | 0.42 | 0.24 | 0.21 | 0.19 | --- | --- |
| | 56 | --- | --- | --- | --- | 0.16 | 0.12 |
| P3 DS | 52 | 0.43 | 0.26 | 0.23 | 0.21 | --- | --- |

Projected LED Lumen Maintenance

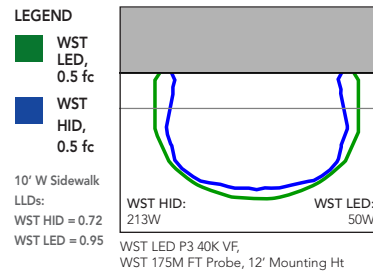
Values calculated according to IESNA TM-21-11 methodology and valid up to 40°C.

| Operating Hours | 0 | 25,000 | 50,000 | 100,000 |
|--------------------------|-----|--------|--------|---------|
| Lumen Maintenance Factor | 1.0 | >0.95 | >0.92 | >0.87 |

Isofootcandle plots for the WST LED P3 40K VF and VW. Distances are in units of mounting height (10').



Distribution overlay comparison to 175W metal halide.



FEATURES & SPECIFICATIONS

INTENDED USE

The classic architectural shape of the WST LED was designed for applications such as hospitals, schools, malls, restaurants, and commercial buildings. The long life LEDs and driver make this luminaire nearly maintenance-free.

CONSTRUCTION

The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP65 rating for the luminaire.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS

Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WST LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) consist of 98 high-efficacy LEDs mounted to a metal core circuit board and integral aluminum heat sinks to maximize heat dissipation and promote long life (100,000 hrs at 40°C, L87). Class 2 electronic driver has a power factor >90%, THD <20%. Easily-serviceable surge protection device meets a minimum Category B (per ANSI/IEEE C62.41.2).

INSTALLATION

A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. PIR options are rated for wet location. Rated for -30°C to 40°C ambient.

DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



D-Series Size 2 LED Area Luminaire

d^{series}



Catalog
Number

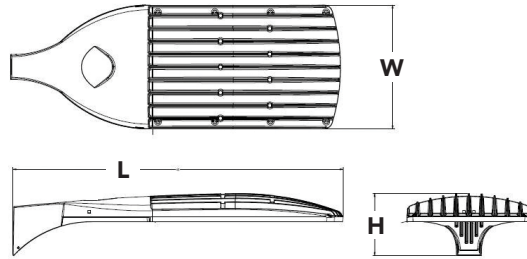
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

| | |
|----------------------|---|
| EPA: | 1.1 ft ² (0.10 m ²) |
| Length: | 40" (101.6 cm) |
| Width: | 15" (38.1 cm) |
| Height: | 7-1/4" (18.4 cm) |
| Weight (max): | 36 lbs (16.3 kg) |



A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and system-level interoperability.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is A+ Certified when ordered with DTL® controls marked by a shaded background. DTL DLL equipped luminaires meet the A+ specification for luminaire to photocontrol interoperability¹
- This luminaire is part of an A+ Certified solution for ROAM® or XPoint™ Wireless control networks, providing out-of-the-box control compatibility with simple commissioning, when ordered with drivers and control options marked by a shaded background¹

To learn more about A+, visit www.acuitybrands.com/aplus.

- See ordering tree for details.
- A+ Certified Solutions for ROAM require the order of one ROAM node per luminaire. Sold Separately: [Link to Roam](#); [Link to DTL DLL](#)



A+ Capable options indicated by this color background.

Ordering Information

EXAMPLE: DSX2 LED P7 T3M MVOLT SPA DDBXD

| Series | LEDs | Color temperature | Distribution | Voltage | Mounting |
|----------|---|---|---|--|--|
| DSX2 LED | Forward optics P1 P5 P2 P6 P3 P7 P4 P8 Rotated optics¹ P10 P13 P11 P14 P12 | 30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted ^{2,3} | T1S Type I Short T5VS Type V Very Short T2S Type II Short T5S Type V Short T2M Type II Medium T5M Type V Medium T3S Type III Short T5W Type V Wide T3M Type III Medium BLC Backlight control ^{2,3} T4M Type IV Medium LCCO Left corner cutoff ^{2,3} TFTM Forward Throw Medium RCCO Right corner cutoff ^{2,3} | MVOLT ⁴ 120 ⁵ 208 ⁵ 240 ⁵ 277 ⁵ 347 ^{5,6} 480 ^{5,6} | Shipped included SPA Square pole mounting RPA Round pole mounting WBA Wall bracket SPUMBA Square pole universal mounting adaptor ⁷ RPUMBA Round pole universal mounting adaptor ⁷ Shipped separately KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) ⁸ |

Control options

Shipped installed

| | |
|------|---|
| PER | NEMA twist-lock receptacle only (no controls) ⁹ |
| PER5 | Five-wire receptacle only (no controls) ^{9,10} |
| PER7 | Seven-wire receptacle only (no controls) ^{9,10} |
| DMG | 0-10V dimming extend out back of housing for external control (no controls) |
| DS | Dual switching ^{11,12} |
| PIRH | Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enable at 5fc ¹³ |

| | |
|-----------|---|
| PIRH1FC3V | Bi-level, motion sensor, 15'-30' mounting height, ambient sensor enabled at 1fc ¹³ |
| BL30 | Bi-level switched dimming, 30% ^{11,14} |
| BL50 | Bi-level switched dimming, 50% ^{11,14} |
| PNMTDD3 | Part night, dim till dawn ¹⁵ |
| PNMT5D3 | Part night, dim 5 hrs ¹⁵ |
| PNMT6D3 | Part night, dim 6 hrs ¹⁵ |
| PNMT7D3 | Part night, dim 7 hrs ¹⁵ |
| FAO | Field Adjustable Output ¹⁶ |

Other options

Shipped installed

| | |
|-----|---|
| HS | House-side shield ¹⁷ |
| SF | Single fuse (120, 277, 347V) ⁷ |
| DF | Double fuse (208, 240, 480V) ⁷ |
| L90 | Left rotated optics ¹ |
| R90 | Right rotated optics ¹ |
| BS | Bird spikes |

Finish (required)

| | |
|--------|---------------------------|
| DDBXD | Dark bronze |
| DBLXD | Black |
| DNAXD | Natural aluminum |
| DWHXD | White |
| DDBTXD | Textured dark bronze |
| DBLBXD | Textured black |
| DNATXD | Textured natural aluminum |
| DWHGXD | Textured white |



Ordering Information

Accessories

Ordered and shipped separately.

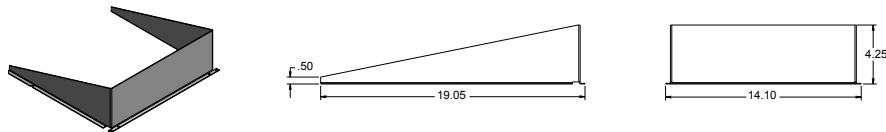
| | |
|--------------------|---|
| DLL127F 1.5 JU | Photocell - SSL twist-lock (120-277V) ¹⁸ |
| DLL347F 1.5 CUL JU | Photocell - SSL twist-lock (347V) ¹⁸ |
| DLL480F 1.5 CUL JU | Photocell - SSL twist-lock (480V) ¹⁸ |
| DSHORT SBK U | Shorting cap ¹⁸ |
| DSX2HS 80C U | House-side shield for 80 LED unit ⁴ |
| DSX2HS 90C U | House-side shield for 90 LED unit ⁴ |
| DSX2HS 100C U | House-side shield for 100 LED unit ⁴ |
| PUMBA DDBXD U* | Square and round pole universal mounting bracket (specify finish) ¹⁹ |
| KMA8 DDBXD U | Mast arm mounting bracket adaptor (specify finish) ¹⁷ |

For more control options, visit [DTL](#) and [ROAM](#) online.

NOTES

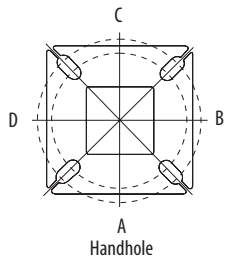
- P10, P11, P12 or P14 and rotated optics (L90, R90) only available together.
- AMBPC not available with BLC, LCCO, RCCO, HS or P5, P7, P8, P13 or P14.
- Not available with HS.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
- Not available with BL30, BL50 or PNMT options.
- Existing drilled pole only. Available as a separate combination accessory; for retrofit use only: PUMBA (finish) U; 1.5 G vibration load rating per ANCI C136.31.
- Must order fixture with SPA option. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" mast arm (not included).
- Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Not available with DS option. Shorting Cap included.
- If ROAM@ node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Node with integral dimming. Shorting Cap included.
- Requires (2) separately switched circuits. See Outdoor Control Technical Guide for details.
- Provides 50/50 fixture operation via (2) independent drivers. Not available with PER, PER5, PER7, PIR or PIRH.
- Reference Motion Sensor table on page 3.
- Not available with 347V, 480V, DS and PNMT. For PER5 or PER7 see PER Table on page 3.
- Not available with 347V, 480V, DS, BL30, BL50. For PER5 or PER7 see PER Table on page 3. Separate Dusk to Dawn required.
- Not available with other dimming controls options.
- Not available with BLC, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
- Requires luminaire to be specified with PER, PER5 and PER7 option. Ordered and shipped as a separate line item from Acuity Brands Controls.
- For retrofit use only.

External Glare Shield



Drilling

HANDHOLE ORIENTATION



Tenon Mounting Slipfitter**

| Tenon O.D. | Single Unit | 2 at 180° | 2 at 90° | 3 at 120° | 3 at 90° | 4 at 90° |
|------------|-------------|-----------|-----------|-----------|-----------|-----------|
| 2-3/8" | AST20-190 | AST20-280 | AST20-290 | AST20-320 | AST20-390 | AST20-490 |
| 2-7/8" | AST25-190 | AST25-280 | AST25-290 | AST25-320 | AST25-390 | AST25-490 |
| 4" | AST35-190 | AST35-280 | AST35-290 | AST35-320 | AST35-390 | AST35-490 |

Pole drilling nomenclature: # of heads at degree from handhole (default side A)

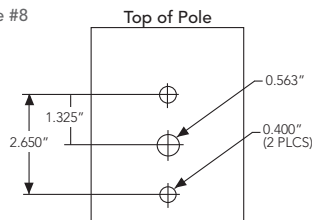
| DM19AS | DM28AS | DM29AS | DM32AS | DM39AS | DM49AS |
|---------|------------|------------|-----------------|----------------|------------------|
| 1 @ 90° | 2 @ 280° | 2 @ 90° | 3 @ 120° | 3 @ 90° | 4 @ 90° |
| Side B | Side B & D | Side B & C | Round pole only | Side B, C, & D | Sides A, B, C, D |

Note: Review luminaire spec sheet for specific nomenclature

| Pole top or tenon O.D. | 4.5" @ 90° | 4" @ 90° | 3.5" @ 90° | 3" @ 90° | 4.5" @ 120° | 4" @ 120° | 3.5" @ 120° | 3" @ 120° |
|------------------------|------------|----------|------------|----------|-------------|-----------|-------------|-----------|
| DSX SPA | Y | Y | Y | N | - | - | - | - |
| DSX RPA | Y | Y | N | N | Y | Y | Y | Y |
| DSX SPUMBA | Y | N | N | N | - | - | - | - |
| DSX RPUMBA | N | N | N | N | Y | Y | Y | N |

*3 fixtures @ 120 require round pole top/tenon.

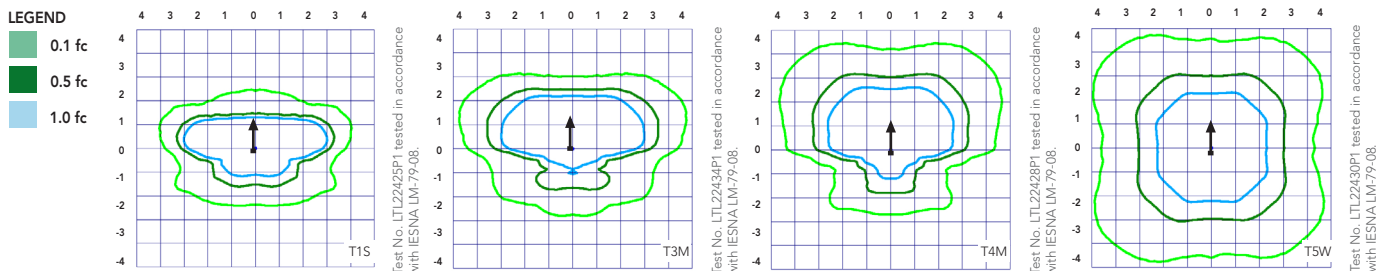
Template #8



Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Area Size 2 homepage](#).

Isofootcandle plots for the DSX2 LED 80C 1000 40K. Distances are in units of mounting height (30').



Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

| Ambient | | Lumen Multiplier |
|-------------|-------------|------------------|
| 0°C | 32°F | 1.04 |
| 5°C | 41°F | 1.04 |
| 10°C | 50°F | 1.03 |
| 15°C | 59°F | 1.02 |
| 20°C | 68°F | 1.01 |
| 25°C | 77°F | 1.00 |
| 30°C | 86°F | 0.99 |
| 35°C | 95°F | 0.98 |
| 40°C | 104°F | 0.97 |

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

| Operating Hours | 0 | 25000 | 50000 | 100000 |
|--------------------------|------|-------|-------|--------|
| Lumen Maintenance Factor | 1.00 | 0.96 | 0.92 | 0.85 |

Electrical Load

| | Performance Package | LED Count | Drive Current | Wattage | Current (A) | | | | | |
|---|---------------------|-----------|---------------|---------|-------------|------|------|------|------|------|
| | | | | | 120 | 208 | 240 | 277 | 347 | 480 |
| Forward Optics (Non-Rotated) | P1 | 80 | 530 | 140 | 1.18 | 0.68 | 0.59 | 0.51 | 0.40 | 0.32 |
| | P2 | 80 | 700 | 185 | 1.56 | 0.90 | 0.78 | 0.66 | 0.52 | 0.39 |
| | P3 | 80 | 850 | 217 | 1.82 | 1.05 | 0.90 | 0.80 | 0.63 | 0.48 |
| | P4 | 80 | 1050 | 270 | 2.27 | 1.31 | 1.12 | 0.99 | 0.79 | 0.59 |
| | P5 | 80 | 1250 | 321 | 2.68 | 1.54 | 1.34 | 1.17 | 0.93 | 0.68 |
| | P6 | 100 | 1050 | 343 | 2.89 | 1.66 | 1.59 | 1.37 | 1.00 | 0.71 |
| | P7 | 100 | 1250 | 398 | 3.31 | 1.91 | 1.66 | 1.45 | 1.16 | 0.81 |
| | P8 | 100 | 1350 | 431 | 3.61 | 2.07 | 1.81 | 1.57 | 1.25 | 0.91 |
| Rotated Optics (Requires L90 or R90) | P10 | 90 | 530 | 156 | 1.30 | 0.76 | 0.65 | 0.62 | 0.45 | 0.32 |
| | P11 | 90 | 700 | 207 | 1.75 | 1.01 | 0.87 | 0.74 | 0.60 | 0.46 |
| | P12 | 90 | 850 | 254 | 2.12 | 1.22 | 1.06 | 0.94 | 0.73 | 0.55 |
| | P13 | 90 | 1200 | 344 | 2.88 | 1.65 | 1.44 | 1.25 | 1.00 | 0.73 |
| | P14 | 90 | 1400 | 405 | 3.39 | 1.95 | 1.71 | 1.48 | 1.18 | 0.86 |

| Motion Sensor Default Settings | | | | | | |
|--------------------------------|-----------------|-----------------------------|---------------------|------------|--------------|----------------|
| Option | Dimmed State | High Level (when triggered) | Photocell Operation | Dwell Time | Ramp-up Time | Ramp-down Time |
| PIR or PIRH | 3V (37%) Output | 10V (100%) Output | Enabled @ 5FC | 5 min | 3 sec | 5 min |
| *PIR1FC3V or PIRH1FC3V | 3V (37%) Output | 10V (100%) Output | Enabled @ 1FC | 5 min | 3 sec | 5 min |

*for use with Inline Dusk to Dawn or timer.

| PER Table | | | | | | |
|-------------------------------------|--------------|---------------|----------------------------------|---------------|----------------------------------|-----------------------------|
| Control | PER (3 wire) | PER5 (5 wire) | | PER7 (7 wire) | | |
| | | Wire 4/Wire5 | Wire 4/Wire5 | Wire 4/Wire5 | Wire 6/Wire7 | |
| Photocontrol Only (On/Off) | ✓ | ▲ | Wired to dimming leads on driver | ▲ | Wired to dimming leads on driver | Wires Capped inside fixture |
| ROAM | ✗ | ✓ | Wired to dimming leads on driver | ▲ | Wired to dimming leads on driver | Wires Capped inside fixture |
| ROAM with Motion (ROAM on/off only) | ✗ | ▲ | Wires Capped inside fixture | ▲ | Wires Capped inside fixture | Wires Capped inside fixture |
| Future-proof* | ✗ | ▲ | Wired to dimming leads on driver | ✓ | Wired to dimming leads on driver | Wires Capped inside fixture |
| Future-proof* with Motion | ✗ | ▲ | Wires Capped inside fixture | ✓ | Wires Capped inside fixture | Wires Capped inside fixture |

| |
|-----------------|
| ✓ Recommended |
| ✗ Will not work |
| ▲ Alternate |

*Future-proof means: Ability to change controls in the future.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

| Forward Optics | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|---------------|---------------|--------------|------------|----------------------|----|------|-----|--------|----------------------|---|---|-----|--------|----------------------|---|---|-----|--------|----------------------------------|---|---|-----|--------|---|---|---|----|
| LED Count | Drive Current | Power Package | System Watts | Dist. Type | 30K (3000 K, 70 CRI) | | | | | 40K (4000 K, 70 CRI) | | | | | 50K (5000 K, 70 CRI) | | | | | AMBPC (Amber Phosphor Converted) | | | | | | | | |
| | | | | | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW | | | | |
| 80 | 530 | P1 | 140W | T1S | 17,575 | 3 | 0 | 3 | 126 | 18,933 | 3 | 0 | 3 | 135 | 19,173 | 3 | 0 | 3 | 137 | 10,752 | 2 | 0 | 2 | 78 | | | | |
| | | | | T2S | 17,556 | 3 | 0 | 3 | 125 | 18,913 | 3 | 0 | 3 | 135 | 19,152 | 3 | 0 | 3 | 137 | 10,554 | 2 | 0 | 2 | 77 | | | | |
| | | | | T2M | 17,647 | 3 | 0 | 3 | 126 | 19,010 | 3 | 0 | 3 | 136 | 19,251 | 3 | 0 | 3 | 138 | 10,571 | 2 | 0 | 2 | 77 | | | | |
| | | | | T3S | 17,090 | 3 | 0 | 3 | 122 | 18,411 | 3 | 0 | 3 | 132 | 18,644 | 3 | 0 | 3 | 133 | 10,548 | 2 | 0 | 2 | 77 | | | | |
| | | | | T3M | 17,604 | 3 | 0 | 3 | 126 | 18,964 | 3 | 0 | 3 | 135 | 19,204 | 3 | 0 | 3 | 137 | 10,569 | 2 | 0 | 2 | 77 | | | | |
| | | | | T4M | 17,221 | 3 | 0 | 3 | 123 | 18,552 | 3 | 0 | 4 | 133 | 18,787 | 3 | 0 | 4 | 134 | 10,547 | 2 | 0 | 2 | 77 | | | | |
| | | | | TFTM | 17,593 | 3 | 0 | 3 | 126 | 18,952 | 3 | 0 | 4 | 135 | 19,192 | 3 | 0 | 4 | 137 | 10,741 | 1 | 0 | 2 | 78 | | | | |
| | | | | T5VS | 18,297 | 4 | 0 | 1 | 131 | 19,711 | 4 | 0 | 1 | 141 | 19,961 | 4 | 0 | 1 | 143 | 11,155 | 3 | 0 | 0 | 81 | | | | |
| | | | | T5S | 18,312 | 4 | 0 | 2 | 131 | 19,727 | 4 | 0 | 2 | 141 | 19,977 | 4 | 0 | 2 | 143 | 11,149 | 3 | 0 | 0 | 81 | | | | |
| | | | | T5M | 18,266 | 4 | 0 | 2 | 130 | 19,677 | 4 | 0 | 2 | 141 | 19,926 | 4 | 0 | 2 | 142 | 11,096 | 3 | 0 | 2 | 81 | | | | |
| | | | | T5W | 18,146 | 5 | 0 | 3 | 130 | 19,548 | 5 | 0 | 3 | 140 | 19,796 | 5 | 0 | 3 | 141 | 10,957 | 3 | 0 | 2 | 80 | | | | |
| | | | | BLC | 14,424 | 2 | 0 | 2 | 103 | 15,539 | 2 | 0 | 3 | 111 | 15,736 | 2 | 0 | 3 | 112 | | | | | | | | | |
| | | | | LCCO | 10,733 | 1 | 0 | 3 | 77 | 11,562 | 1 | 0 | 3 | 83 | 11,709 | 2 | 0 | 3 | 84 | | | | | | | | | |
| | | | | RCCO | 10,733 | 1 | 0 | 3 | 77 | 11,562 | 1 | 0 | 3 | 83 | 11,709 | 2 | 0 | 3 | 84 | | | | | | | | | |
| | | | | 80 | 700 | P2 | 185W | T1S | 22,305 | 3 | 0 | 3 | 121 | 24,029 | 3 | 0 | 3 | 130 | 24,333 | 3 | 0 | 3 | 132 | 13362 | 2 | 0 | 2 | 71 |
| | | | | | | | | T2S | 22,281 | 3 | 0 | 4 | 120 | 24,003 | 3 | 0 | 4 | 130 | 24,307 | 3 | 0 | 4 | 131 | 13116 | 2 | 0 | 2 | 70 |
| T2M | 22,396 | 3 | 0 | | | | | 3 | 121 | 24,127 | 3 | 0 | 3 | 130 | 24,432 | 3 | 0 | 3 | 132 | 13138 | 2 | 0 | 2 | 70 | | | | |
| T3S | 21,690 | 3 | 0 | | | | | 4 | 117 | 23,366 | 3 | 0 | 4 | 126 | 23,662 | 3 | 0 | 4 | 128 | 13110 | 2 | 0 | 2 | 70 | | | | |
| T3M | 22,342 | 3 | 0 | | | | | 4 | 121 | 24,068 | 3 | 0 | 4 | 130 | 24,373 | 3 | 0 | 4 | 132 | 13135 | 2 | 0 | 3 | 70 | | | | |
| T4M | 21,857 | 3 | 0 | | | | | 4 | 118 | 23,545 | 3 | 0 | 4 | 127 | 23,844 | 3 | 0 | 4 | 129 | 13108 | 2 | 0 | 2 | 70 | | | | |
| TFTM | 22,328 | 3 | 0 | | | | | 4 | 121 | 24,054 | 3 | 0 | 4 | 130 | 24,358 | 3 | 0 | 4 | 132 | 13349 | 2 | 0 | 2 | 71 | | | | |
| T5VS | 23,222 | 5 | 0 | | | | | 1 | 126 | 25,016 | 5 | 0 | 1 | 135 | 25,333 | 5 | 0 | 1 | 137 | 13864 | 3 | 0 | 1 | 74 | | | | |
| T5S | 23,241 | 4 | 0 | | | | | 2 | 126 | 25,037 | 4 | 0 | 2 | 135 | 25,354 | 4 | 0 | 2 | 137 | 13856 | 3 | 0 | 1 | 74 | | | | |
| T5M | 23,182 | 5 | 0 | | | | | 3 | 125 | 24,974 | 5 | 0 | 3 | 135 | 25,290 | 5 | 0 | 3 | 137 | 13790 | 3 | 0 | 2 | 73 | | | | |
| T5W | 23,030 | 5 | 0 | | | | | 4 | 124 | 24,810 | 5 | 0 | 4 | 134 | 25,124 | 5 | 0 | 4 | 136 | 13617 | 4 | 0 | 2 | 72 | | | | |
| BLC | 18,307 | 2 | 0 | | | | | 3 | 99 | 19,721 | 2 | 0 | 3 | 107 | 19,971 | 2 | 0 | 3 | 108 | | | | | | | | | |
| LCCO | 13,622 | 2 | 0 | | | | | 3 | 74 | 14,674 | 2 | 0 | 4 | 79 | 14,860 | 2 | 0 | 4 | 80 | | | | | | | | | |
| RCCO | 13,622 | 2 | 0 | | | | | 3 | 74 | 14,674 | 2 | 0 | 4 | 79 | 14,860 | 2 | 0 | 4 | 80 | | | | | | | | | |
| 80 | 850 | P3 | 217W | | | | | T1S | 26,202 | 3 | 0 | 3 | 121 | 28,226 | 3 | 0 | 3 | 130 | 28,584 | 3 | 0 | 3 | 132 | | | | | |
| | | | | | | | | T2S | 26,174 | 3 | 0 | 4 | 121 | 28,196 | 3 | 0 | 4 | 130 | 28,553 | 3 | 0 | 4 | 132 | | | | | |
| | | | | T2M | 26,309 | 3 | 0 | 3 | 121 | 28,342 | 3 | 0 | 3 | 131 | 28,700 | 3 | 0 | 3 | 132 | | | | | | | | | |
| | | | | T3S | 25,479 | 3 | 0 | 4 | 117 | 27,448 | 3 | 0 | 4 | 126 | 27,795 | 3 | 0 | 4 | 128 | | | | | | | | | |
| | | | | T3M | 26,245 | 3 | 0 | 4 | 121 | 28,273 | 3 | 0 | 4 | 130 | 28,631 | 3 | 0 | 4 | 132 | | | | | | | | | |
| | | | | T4M | 25,675 | 3 | 0 | 4 | 118 | 27,659 | 3 | 0 | 4 | 127 | 28,009 | 3 | 0 | 4 | 129 | | | | | | | | | |
| | | | | TFTM | 26,229 | 3 | 0 | 4 | 121 | 28,255 | 3 | 0 | 4 | 130 | 28,613 | 3 | 0 | 4 | 132 | | | | | | | | | |
| | | | | T5VS | 27,279 | 5 | 0 | 1 | 126 | 29,387 | 5 | 0 | 1 | 135 | 29,759 | 5 | 0 | 1 | 137 | | | | | | | | | |
| | | | | T5S | 27,301 | 4 | 0 | 2 | 126 | 29,410 | 5 | 0 | 2 | 136 | 29,783 | 5 | 0 | 2 | 137 | | | | | | | | | |
| | | | | T5M | 27,232 | 5 | 0 | 3 | 125 | 29,336 | 5 | 0 | 3 | 135 | 29,707 | 5 | 0 | 3 | 137 | | | | | | | | | |
| | | | | T5W | 27,053 | 5 | 0 | 4 | 125 | 29,144 | 5 | 0 | 4 | 134 | 29,513 | 5 | 0 | 4 | 136 | | | | | | | | | |
| | | | | BLC | 21,504 | 2 | 0 | 3 | 99 | 23,166 | 2 | 0 | 3 | 107 | 23,459 | 2 | 0 | 4 | 108 | | | | | | | | | |
| | | | | LCCO | 16,001 | 2 | 0 | 4 | 74 | 17,238 | 2 | 0 | 4 | 79 | 17,456 | 2 | 0 | 4 | 80 | | | | | | | | | |
| | | | | RCCO | 16,001 | 2 | 0 | 4 | 74 | 17,238 | 2 | 0 | 4 | 79 | 17,456 | 2 | 0 | 4 | 80 | | | | | | | | | |
| | | | | 80 | 1050 | P4 | 270W | T1S | 30,963 | 4 | 0 | 4 | 115 | 33,355 | 4 | 0 | 4 | 124 | 33,777 | 4 | 0 | 4 | 125 | 18,125 | 2 | 0 | 2 | 64 |
| | | | | | | | | T2S | 30,930 | 4 | 0 | 4 | 115 | 33,320 | 4 | 0 | 4 | 123 | 33,742 | 4 | 0 | 4 | 125 | 17,791 | 3 | 0 | 3 | 63 |
| T2M | 31,089 | 3 | 0 | | | | | 4 | 115 | 33,491 | 3 | 0 | 4 | 124 | 33,915 | 3 | 0 | 4 | 126 | 17,821 | 3 | 0 | 3 | 63 | | | | |
| T3S | 30,108 | 4 | 0 | | | | | 4 | 112 | 32,435 | 4 | 0 | 5 | 120 | 32,845 | 4 | 0 | 5 | 122 | 17,782 | 2 | 0 | 2 | 63 | | | | |
| T3M | 31,014 | 3 | 0 | | | | | 4 | 115 | 33,410 | 3 | 0 | 4 | 124 | 33,833 | 3 | 0 | 4 | 125 | 17,817 | 3 | 0 | 3 | 63 | | | | |
| T4M | 30,340 | 3 | 0 | | | | | 5 | 112 | 32,684 | 3 | 0 | 5 | 121 | 33,098 | 3 | 0 | 5 | 123 | 17,779 | 2 | 0 | 3 | 63 | | | | |
| TFTM | 30,995 | 3 | 0 | | | | | 5 | 115 | 33,390 | 3 | 0 | 5 | 124 | 33,812 | 3 | 0 | 5 | 125 | 18,107 | 2 | 0 | 3 | 64 | | | | |
| T5VS | 32,235 | 5 | 0 | | | | | 1 | 119 | 34,726 | 5 | 0 | 1 | 129 | 35,166 | 5 | 0 | 1 | 130 | 18,794 | 3 | 0 | 1 | 67 | | | | |
| T5S | 32,261 | 5 | 0 | | | | | 2 | 119 | 34,754 | 5 | 0 | 2 | 129 | 35,194 | 5 | 0 | 2 | 130 | 18,805 | 3 | 0 | 1 | 67 | | | | |
| T5M | 32,180 | 5 | 0 | | | | | 4 | 119 | 34,667 | 5 | 0 | 4 | 128 | 35,105 | 5 | 0 | 4 | 130 | 18,705 | 4 | 0 | 2 | 66 | | | | |
| T5W | 31,969 | 5 | 0 | | | | | 4 | 118 | 34,439 | 5 | 0 | 5 | 128 | 34,875 | 5 | 0 | 5 | 129 | 18,740 | 4 | 0 | 2 | 66 | | | | |
| BLC | 25,412 | 2 | 0 | | | | | 4 | 94 | 27,376 | 2 | 0 | 4 | 101 | 27,722 | 2 | 0 | 4 | 103 | | | | | | | | | |
| LCCO | 18,909 | 2 | 0 | | | | | 4 | 70 | 20,370 | 2 | 0 | 4 | 75 | 20,628 | 2 | 0 | 4 | 76 | | | | | | | | | |
| | | | | | | | | | 18,909 | 2 | 0 | 4 | 70 | 20,370 | 2 | 0 | 4 | 75 | 20,628 | 2 | 0 | 4 | 76 | | | | | |

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

| Forward Optics | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|---------------|---------------|--------------|------------|----------------------|---|---|---|--------|----------------------|---|---|----|--------|----------------------|---|---|----|--------|----------------------------------|---|---|----|-----|
| LED Count | Drive Current | Power Package | System Watts | Dist. Type | 30K (3000 K, 70 CRI) | | | | | 40K (4000 K, 70 CRI) | | | | | 50K (5000 K, 70 CRI) | | | | | AMBPC (Amber Phosphor Converted) | | | | |
| | | | | | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW |
| 80 | 1250 | P5 | 321W | T1S | 35,193 | 4 | 0 | 4 | 110 | 37,912 | 4 | 0 | 4 | 118 | 38,392 | 4 | 0 | 4 | 120 | 2,541 | 1 | 0 | 1 | 73 |
| | | | | T2S | 35,155 | 4 | 0 | 5 | 110 | 37,872 | 4 | 0 | 5 | 118 | 38,351 | 4 | 0 | 5 | 119 | 2,589 | 1 | 0 | 1 | 74 |
| | | | | T2M | 35,336 | 4 | 0 | 4 | 110 | 38,067 | 4 | 0 | 4 | 119 | 38,549 | 4 | 0 | 4 | 120 | 2,539 | 1 | 0 | 1 | 73 |
| | | | | T3S | 34,222 | 4 | 0 | 5 | 107 | 36,866 | 4 | 0 | 5 | 115 | 37,333 | 4 | 0 | 5 | 116 | 2,558 | 1 | 0 | 1 | 73 |
| | | | | T3M | 35,251 | 3 | 0 | 4 | 110 | 37,974 | 3 | 0 | 5 | 118 | 38,455 | 4 | 0 | 5 | 120 | 2,583 | 1 | 0 | 1 | 74 |
| | | | | T4M | 34,485 | 3 | 0 | 5 | 107 | 37,149 | 4 | 0 | 5 | 116 | 37,620 | 4 | 0 | 5 | 117 | 2,570 | 1 | 0 | 1 | 73 |
| | | | | TFTM | 35,229 | 3 | 0 | 5 | 110 | 37,951 | 3 | 0 | 5 | 118 | 38,431 | 3 | 0 | 5 | 120 | 2,540 | 1 | 0 | 1 | 73 |
| | | | | TSVS | 36,639 | 5 | 0 | 1 | 114 | 39,470 | 5 | 0 | 1 | 123 | 39,970 | 5 | 0 | 1 | 125 | 2,650 | 1 | 0 | 0 | 76 |
| | | | | TSS | 36,669 | 5 | 0 | 2 | 114 | 39,502 | 5 | 0 | 2 | 123 | 40,002 | 5 | 0 | 2 | 125 | 2,690 | 1 | 0 | 0 | 77 |
| | | | | TSM | 36,576 | 5 | 0 | 4 | 114 | 39,403 | 5 | 0 | 4 | 123 | 39,901 | 5 | 0 | 4 | 124 | 2,658 | 2 | 0 | 0 | 76 |
| | | | | TSW | 36,336 | 5 | 0 | 5 | 113 | 39,144 | 5 | 0 | 5 | 122 | 39,640 | 5 | 0 | 5 | 123 | 2,663 | 2 | 0 | 1 | 73 |
| | | | | BLC | 28,884 | 3 | 0 | 4 | 90 | 31,115 | 3 | 0 | 4 | 97 | 31,509 | 3 | 0 | 4 | 98 | | | | | |
| | | | | LCCO | 21,492 | 2 | 0 | 4 | 67 | 23,153 | 2 | 0 | 5 | 72 | 23,446 | 3 | 0 | 5 | 73 | | | | | |
| | | | | RCCO | 21,492 | 2 | 0 | 4 | 67 | 23,153 | 2 | 0 | 5 | 72 | 23,446 | 3 | 0 | 5 | 73 | | | | | |
| 100 | 1050 | P6 | 343W | T1S | 37,824 | 4 | 0 | 4 | 110 | 40,747 | 4 | 0 | 4 | 119 | 41,263 | 4 | 0 | 4 | 120 | 3,144 | 1 | 0 | 1 | 70 |
| | | | | T2S | 37,784 | 4 | 0 | 5 | 110 | 40,704 | 4 | 0 | 5 | 119 | 41,219 | 4 | 0 | 5 | 120 | 3,203 | 1 | 0 | 1 | 71 |
| | | | | T2M | 37,979 | 4 | 0 | 4 | 111 | 40,913 | 4 | 0 | 4 | 119 | 41,431 | 4 | 0 | 4 | 121 | 3,141 | 1 | 0 | 1 | 70 |
| | | | | T3S | 36,780 | 4 | 0 | 5 | 107 | 39,623 | 4 | 0 | 5 | 116 | 40,124 | 4 | 0 | 5 | 117 | 3,165 | 1 | 0 | 1 | 70 |
| | | | | T3M | 37,886 | 3 | 0 | 5 | 110 | 40,814 | 4 | 0 | 5 | 119 | 41,331 | 4 | 0 | 5 | 120 | 3,196 | 1 | 0 | 1 | 71 |
| | | | | T4M | 37,063 | 4 | 0 | 5 | 108 | 39,927 | 4 | 0 | 5 | 116 | 40,433 | 4 | 0 | 5 | 118 | 3,179 | 1 | 0 | 1 | 71 |
| | | | | TFTM | 37,863 | 3 | 0 | 5 | 110 | 40,789 | 4 | 0 | 5 | 119 | 41,305 | 4 | 0 | 5 | 120 | 3,143 | 1 | 0 | 1 | 70 |
| | | | | TSVS | 39,379 | 5 | 0 | 1 | 115 | 42,422 | 5 | 0 | 1 | 124 | 42,959 | 5 | 0 | 1 | 125 | 3,278 | 2 | 0 | 0 | 73 |
| | | | | TSS | 39,411 | 5 | 0 | 2 | 115 | 42,456 | 5 | 0 | 2 | 124 | 42,993 | 5 | 0 | 2 | 125 | 3,328 | 2 | 0 | 0 | 74 |
| | | | | TSM | 39,311 | 5 | 0 | 4 | 115 | 42,349 | 5 | 0 | 4 | 123 | 42,885 | 5 | 0 | 4 | 125 | 3,288 | 2 | 0 | 1 | 73 |
| | | | | TSW | 39,053 | 5 | 0 | 5 | 114 | 42,071 | 5 | 0 | 5 | 123 | 42,604 | 5 | 0 | 5 | 124 | 3,295 | 2 | 0 | 1 | 73 |
| | | | | BLC | 31,043 | 3 | 0 | 4 | 91 | 33,442 | 3 | 0 | 4 | 97 | 33,865 | 3 | 0 | 4 | 99 | | | | | |
| | | | | LCCO | 23,099 | 2 | 0 | 5 | 67 | 24,884 | 3 | 0 | 5 | 73 | 25,199 | 3 | 0 | 5 | 73 | | | | | |
| | | | | RCCO | 23,099 | 2 | 0 | 5 | 67 | 24,884 | 3 | 0 | 5 | 73 | 25,199 | 3 | 0 | 5 | 73 | | | | | |
| 100 | 1250 | P7 | 398W | T1S | 42,599 | 4 | 0 | 4 | 107 | 45,890 | 4 | 0 | 4 | 115 | 46,471 | 4 | 0 | 4 | 117 | | | | | |
| | | | | T2S | 42,553 | 4 | 0 | 5 | 107 | 45,842 | 4 | 0 | 5 | 115 | 46,422 | 4 | 0 | 5 | 117 | | | | | |
| | | | | T2M | 42,773 | 4 | 0 | 4 | 107 | 46,078 | 4 | 0 | 4 | 116 | 46,661 | 4 | 0 | 5 | 117 | | | | | |
| | | | | T3S | 41,423 | 4 | 0 | 5 | 104 | 44,624 | 4 | 0 | 5 | 112 | 45,189 | 4 | 0 | 5 | 114 | | | | | |
| | | | | T3M | 42,669 | 4 | 0 | 5 | 107 | 45,966 | 4 | 0 | 5 | 115 | 46,548 | 4 | 0 | 5 | 117 | | | | | |
| | | | | T4M | 41,742 | 4 | 0 | 5 | 105 | 44,967 | 4 | 0 | 5 | 113 | 45,537 | 4 | 0 | 5 | 114 | | | | | |
| | | | | TFTM | 42,643 | 4 | 0 | 5 | 107 | 45,938 | 4 | 0 | 5 | 115 | 46,519 | 4 | 0 | 5 | 117 | | | | | |
| | | | | TSVS | 44,350 | 5 | 0 | 1 | 111 | 47,777 | 5 | 0 | 1 | 120 | 48,381 | 5 | 0 | 1 | 122 | | | | | |
| | | | | TSS | 44,385 | 5 | 0 | 2 | 112 | 47,815 | 5 | 0 | 3 | 120 | 48,420 | 5 | 0 | 3 | 122 | | | | | |
| | | | | TSM | 44,273 | 5 | 0 | 4 | 111 | 47,695 | 5 | 0 | 4 | 120 | 48,298 | 5 | 0 | 4 | 121 | | | | | |
| | | | | TSW | 43,983 | 5 | 0 | 5 | 111 | 47,382 | 5 | 0 | 5 | 119 | 47,982 | 5 | 0 | 5 | 121 | | | | | |
| | | | | BLC | 34,962 | 3 | 0 | 4 | 88 | 37,664 | 3 | 0 | 5 | 95 | 38,140 | 3 | 0 | 5 | 96 | | | | | |
| | | | | LCCO | 26,015 | 3 | 0 | 5 | 65 | 28,025 | 3 | 0 | 5 | 70 | 28,380 | 3 | 0 | 5 | 71 | | | | | |
| | | | | RCCO | 26,015 | 3 | 0 | 5 | 65 | 28,025 | 3 | 0 | 5 | 70 | 28,380 | 3 | 0 | 5 | 71 | | | | | |
| 100 | 1350 | P8 | 448W | T1S | 45,610 | 4 | 0 | 4 | 106 | 49,135 | 4 | 0 | 4 | 114 | 49,757 | 4 | 0 | 4 | 115 | | | | | |
| | | | | T2S | 45,562 | 4 | 0 | 5 | 106 | 49,083 | 4 | 0 | 5 | 114 | 49,704 | 4 | 0 | 5 | 115 | | | | | |
| | | | | T2M | 45,797 | 4 | 0 | 4 | 106 | 49,336 | 4 | 0 | 5 | 114 | 49,960 | 4 | 0 | 5 | 116 | | | | | |
| | | | | T3S | 44,352 | 4 | 0 | 5 | 103 | 47,779 | 4 | 0 | 5 | 111 | 48,384 | 4 | 0 | 5 | 112 | | | | | |
| | | | | T3M | 45,686 | 4 | 0 | 5 | 106 | 49,216 | 4 | 0 | 5 | 114 | 49,839 | 4 | 0 | 5 | 116 | | | | | |
| | | | | T4M | 44,693 | 4 | 0 | 5 | 104 | 48,147 | 4 | 0 | 5 | 112 | 48,756 | 4 | 0 | 5 | 113 | | | | | |
| | | | | TFTM | 45,657 | 4 | 0 | 5 | 106 | 49,186 | 4 | 0 | 5 | 114 | 49,808 | 4 | 0 | 5 | 116 | | | | | |
| | | | | TSVS | 47,485 | 5 | 0 | 1 | 110 | 51,155 | 5 | 0 | 1 | 119 | 51,802 | 5 | 0 | 1 | 120 | | | | | |
| | | | | TSS | 47,524 | 5 | 0 | 3 | 110 | 51,196 | 5 | 0 | 3 | 119 | 51,844 | 5 | 0 | 3 | 120 | | | | | |
| | | | | TSM | 47,404 | 5 | 0 | 4 | 110 | 51,067 | 5 | 0 | 5 | 118 | 51,713 | 5 | 0 | 5 | 120 | | | | | |
| | | | | TSW | 47,093 | 5 | 0 | 5 | 109 | 50,732 | 5 | 0 | 5 | 118 | 51,374 | 5 | 0 | 5 | 119 | | | | | |
| | | | | BLC | 37,434 | 3 | 0 | 5 | 87 | 40,326 | 3 | 0 | 5 | 94 | 40,837 | 3 | 0 | 5 | 95 | | | | | |
| | | | | LCCO | 27,854 | 3 | 0 | 5 | 65 | 30,006 | 3 | 0 | 5 | 70 | 30,386 | 3 | 0 | 5 | 71 | | | | | |
| | | | | | | | | | 27,854 | 3 | 0 | 5 | 65 | 30,006 | 3 | 0 | 5 | 70 | 30,386 | 3 | 0 | 5 | 71 | |

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

| Rotated Optics | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|---------------|---------------|--------------|------------|----------------------|-----|------|-----|--------|----------------------|---|---|-----|--------|----------------------|---|---|-----|--------|----------------------------------|---|---|-----|--------|---|---|---|----|
| LED Count | Drive Current | Power Package | System Watts | Dist. Type | 30K (3000 K, 70 CRI) | | | | | 40K (4000 K, 70 CRI) | | | | | 50K (5000 K, 70 CRI) | | | | | AMBPC (Amber Phosphor Converted) | | | | | | | | |
| | | | | | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW | Lumens | B | U | G | LPW | | | | |
| 90 | 530 | P10 | 156W | T1S | 20,145 | 4 | 0 | 4 | 129 | 21,702 | 4 | 0 | 4 | 139 | 21,977 | 4 | 0 | 4 | 141 | 11,475 | 3 | 0 | 3 | 77 | | | | |
| | | | | T2S | 20,029 | 4 | 0 | 4 | 128 | 21,577 | 4 | 0 | 4 | 138 | 21,850 | 4 | 0 | 4 | 140 | 11,448 | 3 | 0 | 3 | 76 | | | | |
| | | | | T2M | 20,391 | 4 | 0 | 4 | 131 | 21,967 | 4 | 0 | 4 | 141 | 22,245 | 4 | 0 | 4 | 143 | 11,467 | 3 | 0 | 3 | 76 | | | | |
| | | | | T3S | 19,719 | 4 | 0 | 4 | 126 | 21,242 | 4 | 0 | 4 | 136 | 21,511 | 4 | 0 | 4 | 138 | 11,442 | 3 | 0 | 3 | 76 | | | | |
| | | | | T3M | 20,379 | 4 | 0 | 4 | 131 | 21,954 | 4 | 0 | 4 | 141 | 22,232 | 4 | 0 | 4 | 143 | 11,464 | 4 | 0 | 4 | 76 | | | | |
| | | | | T4M | 19,995 | 4 | 0 | 4 | 128 | 21,540 | 4 | 0 | 4 | 138 | 21,812 | 5 | 0 | 5 | 140 | 11,440 | 4 | 0 | 4 | 76 | | | | |
| | | | | TFTM | 20,511 | 4 | 0 | 4 | 131 | 22,096 | 5 | 0 | 5 | 142 | 22,376 | 5 | 0 | 5 | 143 | 11,651 | 4 | 0 | 4 | 78 | | | | |
| | | | | TSVS | 20,655 | 4 | 0 | 1 | 132 | 22,251 | 4 | 0 | 1 | 143 | 22,533 | 4 | 0 | 1 | 144 | 12,288 | 3 | 0 | 1 | 82 | | | | |
| | | | | TSS | 20,482 | 4 | 0 | 2 | 131 | 22,064 | 4 | 0 | 2 | 141 | 22,343 | 4 | 0 | 2 | 143 | 11,978 | 3 | 0 | 1 | 80 | | | | |
| | | | | TSM | 20,477 | 5 | 0 | 3 | 131 | 22,059 | 5 | 0 | 3 | 141 | 22,338 | 5 | 0 | 3 | 143 | 12,301 | 4 | 0 | 2 | 82 | | | | |
| | | | | TSW | 20,293 | 5 | 0 | 3 | 130 | 21,861 | 5 | 0 | 3 | 140 | 22,138 | 5 | 0 | 4 | 142 | 12,109 | 4 | 0 | 2 | 81 | | | | |
| | | | | BLC | 16,846 | 4 | 0 | 4 | 108 | 18,148 | 4 | 0 | 4 | 116 | 18,378 | 4 | 0 | 4 | 118 | | | | | | | | | |
| | | | | LCCO | 12,032 | 2 | 0 | 3 | 77 | 12,961 | 2 | 0 | 3 | 83 | 13,125 | 2 | 0 | 3 | 84 | | | | | | | | | |
| | | | | RCCO | 12,016 | 4 | 0 | 4 | 77 | 12,944 | 4 | 0 | 4 | 83 | 13,108 | 4 | 0 | 4 | 84 | | | | | | | | | |
| | | | | 90 | 700 | P11 | 207W | T1S | 25,518 | 4 | 0 | 4 | 123 | 27,490 | 4 | 0 | 4 | 133 | 27,837 | 4 | 0 | 4 | 134 | 14,387 | 3 | 0 | 3 | 70 |
| | | | | | | | | T2S | 25,371 | 5 | 0 | 5 | 123 | 27,331 | 5 | 0 | 5 | 132 | 27,677 | 5 | 0 | 5 | 134 | 14,354 | 3 | 0 | 3 | 70 |
| T2M | 25,829 | 4 | 0 | | | | | 4 | 125 | 27,825 | 4 | 0 | 4 | 134 | 28,177 | 4 | 0 | 4 | 136 | 14,378 | 4 | 0 | 4 | 70 | | | | |
| T3S | 24,977 | 5 | 0 | | | | | 5 | 121 | 26,907 | 5 | 0 | 5 | 130 | 27,248 | 5 | 0 | 5 | 132 | 14,347 | 4 | 0 | 4 | 70 | | | | |
| T3M | 25,814 | 5 | 0 | | | | | 5 | 125 | 27,809 | 5 | 0 | 5 | 134 | 28,161 | 5 | 0 | 5 | 136 | 14,374 | 4 | 0 | 4 | 70 | | | | |
| T4M | 25,327 | 5 | 0 | | | | | 5 | 122 | 27,284 | 5 | 0 | 5 | 132 | 27,629 | 5 | 0 | 5 | 133 | 14,344 | 4 | 0 | 4 | 70 | | | | |
| TFTM | 25,981 | 5 | 0 | | | | | 5 | 126 | 27,989 | 5 | 0 | 5 | 135 | 28,343 | 5 | 0 | 5 | 137 | 15,408 | 4 | 0 | 1 | 75 | | | | |
| TSVS | 26,164 | 5 | 0 | | | | | 1 | 126 | 28,185 | 5 | 0 | 1 | 136 | 28,542 | 5 | 0 | 1 | 138 | 15,019 | 4 | 0 | 1 | 73 | | | | |
| TSS | 25,943 | 4 | 0 | | | | | 2 | 125 | 27,948 | 5 | 0 | 2 | 135 | 28,302 | 5 | 0 | 2 | 137 | 15,424 | 4 | 0 | 2 | 75 | | | | |
| TSM | 25,937 | 5 | 0 | | | | | 3 | 125 | 27,941 | 5 | 0 | 3 | 135 | 28,295 | 5 | 0 | 3 | 137 | 14,609 | 4 | 0 | 4 | 71 | | | | |
| TSW | 25,704 | 5 | 0 | | | | | 4 | 124 | 27,691 | 5 | 0 | 4 | 134 | 28,041 | 5 | 0 | 4 | 135 | 15,182 | 4 | 0 | 2 | 74 | | | | |
| BLC | 21,339 | 4 | 0 | | | | | 4 | 103 | 22,988 | 4 | 0 | 4 | 111 | 23,279 | 4 | 0 | 4 | 112 | | | | | | | | | |
| LCCO | 15,240 | 2 | 0 | | | | | 4 | 74 | 16,418 | 2 | 0 | 4 | 79 | 16,626 | 2 | 0 | 4 | 80 | | | | | | | | | |
| RCCO | 15,220 | 5 | 0 | | | | | 5 | 74 | 16,396 | 5 | 0 | 5 | 79 | 16,604 | 5 | 0 | 5 | 80 | | | | | | | | | |
| 90 | 850 | P12 | 254W | | | | | T1S | 29,912 | 4 | 0 | 4 | 118 | 32,223 | 4 | 0 | 4 | 127 | 32,631 | 5 | 0 | 4 | 128 | | | | | |
| | | | | | | | | T2S | 29,740 | 5 | 0 | 5 | 117 | 32,038 | 5 | 0 | 5 | 126 | 32,443 | 5 | 0 | 5 | 128 | | | | | |
| | | | | T2M | 30,277 | 4 | 0 | 4 | 119 | 32,616 | 5 | 0 | 5 | 128 | 33,029 | 5 | 0 | 5 | 130 | | | | | | | | | |
| | | | | T3S | 29,278 | 5 | 0 | 5 | 115 | 31,540 | 5 | 0 | 5 | 124 | 31,940 | 5 | 0 | 5 | 126 | | | | | | | | | |
| | | | | T3M | 30,259 | 5 | 0 | 5 | 119 | 32,597 | 5 | 0 | 5 | 128 | 33,010 | 5 | 0 | 5 | 130 | | | | | | | | | |
| | | | | T4M | 29,688 | 5 | 0 | 5 | 117 | 31,982 | 5 | 0 | 5 | 126 | 32,387 | 5 | 0 | 5 | 128 | | | | | | | | | |
| | | | | TFTM | 30,455 | 5 | 0 | 5 | 120 | 32,808 | 5 | 0 | 5 | 129 | 33,224 | 5 | 0 | 5 | 131 | | | | | | | | | |
| | | | | TSVS | 30,669 | 5 | 0 | 1 | 121 | 33,039 | 5 | 0 | 1 | 130 | 33,457 | 5 | 0 | 1 | 132 | | | | | | | | | |
| | | | | TSS | 30,411 | 5 | 0 | 2 | 120 | 32,761 | 5 | 0 | 2 | 129 | 33,176 | 5 | 0 | 2 | 131 | | | | | | | | | |
| | | | | TSM | 30,404 | 5 | 0 | 3 | 120 | 32,753 | 5 | 0 | 4 | 129 | 33,168 | 5 | 0 | 4 | 131 | | | | | | | | | |
| | | | | TSW | 30,131 | 5 | 0 | 4 | 119 | 32,459 | 5 | 0 | 4 | 128 | 32,870 | 5 | 0 | 4 | 129 | | | | | | | | | |
| | | | | BLC | 25,013 | 4 | 0 | 4 | 98 | 26,946 | 4 | 0 | 4 | 106 | 27,287 | 4 | 0 | 4 | 107 | | | | | | | | | |
| | | | | LCCO | 17,865 | 2 | 0 | 4 | 70 | 19,245 | 2 | 0 | 4 | 76 | 19,489 | 2 | 0 | 4 | 77 | | | | | | | | | |
| | | | | RCCO | 17,841 | 5 | 0 | 5 | 70 | 19,220 | 5 | 0 | 5 | 76 | 19,463 | 5 | 0 | 5 | 77 | | | | | | | | | |
| | | | | 90 | 1200 | P13 | 344W | T1S | 38,768 | 5 | 0 | 5 | 113 | 41,764 | 5 | 0 | 5 | 121 | 42,292 | 5 | 0 | 5 | 123 | | | | | |
| | | | | | | | | T2S | 38,545 | 5 | 0 | 5 | 112 | 41,523 | 5 | 0 | 5 | 121 | 42,049 | 5 | 0 | 5 | 122 | | | | | |
| T2M | 39,241 | 5 | 0 | | | | | 5 | 114 | 42,273 | 5 | 0 | 5 | 123 | 42,808 | 5 | 0 | 5 | 124 | | | | | | | | | |
| T3S | 37,947 | 5 | 0 | | | | | 5 | 110 | 40,879 | 5 | 0 | 5 | 119 | 41,396 | 5 | 0 | 5 | 120 | | | | | | | | | |
| T3M | 39,218 | 5 | 0 | | | | | 5 | 114 | 42,249 | 5 | 0 | 5 | 123 | 42,783 | 5 | 0 | 5 | 124 | | | | | | | | | |
| T4M | 38,478 | 5 | 0 | | | | | 5 | 112 | 41,451 | 5 | 0 | 5 | 120 | 41,976 | 5 | 0 | 5 | 122 | | | | | | | | | |
| TFTM | 39,472 | 5 | 0 | | | | | 5 | 115 | 42,522 | 5 | 0 | 5 | 124 | 43,060 | 5 | 0 | 5 | 125 | | | | | | | | | |
| TSVS | 39,749 | 5 | 0 | | | | | 1 | 116 | 42,821 | 5 | 0 | 1 | 124 | 43,363 | 5 | 0 | 1 | 126 | | | | | | | | | |
| TSS | 39,415 | 5 | 0 | | | | | 2 | 115 | 42,461 | 5 | 0 | 2 | 123 | 42,998 | 5 | 0 | 2 | 125 | | | | | | | | | |
| TSM | 39,405 | 5 | 0 | | | | | 4 | 115 | 42,450 | 5 | 0 | 4 | 123 | 42,988 | 5 | 0 | 4 | 125 | | | | | | | | | |
| TSW | 39,052 | 5 | 0 | | | | | 5 | 114 | 42,069 | 5 | 0 | 5 | 122 | 42,602 | 5 | 0 | 5 | 124 | | | | | | | | | |
| BLC | 32,419 | 5 | 0 | | | | | 5 | 94 | 34,925 | 5 | 0 | 5 | 102 | 35,367 | 5 | 0 | 5 | 103 | | | | | | | | | |
| LCCO | 23,154 | 3 | 0 | | | | | 5 | 67 | 24,943 | 3 | 0 | 5 | 73 | 25,259 | 3 | 0 | 5 | 73 | | | | | | | | | |
| RCCO | 23,124 | 5 | 0 | | | | | 5 | 67 | 24,910 | 5 | 0 | 5 | 72 | 25,226 | 5 | 0 | 5 | 73 | | | | | | | | | |
| 90 | 1400 | P14 | 405W | | | | | T1S | 42,867 | 5 | 0 | 5 | 106 | 46,180 | 5 | 0 | 5 | 114 | 46,764 | 5 | 0 | 5 | 115 | | | | | |
| | | | | | | | | T2S | 42,621 | 5 | 0 | 5 | 105 | 45,914 | 5 | 0 | 5 | 113 | 46,495 | 5 | 0 | 5 | 115 | | | | | |
| | | | | T2M | 43,390 | 5 | 0 | 5 | 107 | 46,743 | 5 | 0 | 5 | 115 | 47,335 | 5 | 0 | 5 | 117 | | | | | | | | | |
| | | | | T3S | 41,959 | 5 | 0 | 5 | 104 | 45,201 | 5 | 0 | 5 | 112 | 45,773 | 5 | 0 | 5 | 113 | | | | | | | | | |
| | | | | T3M | 43,365 | 5 | 0 | 5 | 107 | 46,716 | 5 | 0 | 5 | 115 | 47,307 | 5 | 0 | 5 | 117 | | | | | | | | | |
| | | | | T4M | 42,547 | 5 | 0 | 5 | 105 | 45,834 | 5 | 0 | 5 | 113 | 46,414 | 5 | 0 | 5 | 115 | | | | | | | | | |
| | | | | TFTM | 43,646 | 5 | 0 | 5 | 108 | 47,018 | 5 | 0 | 5 | 116 | 47,614 | 5 | 0 | 5 | 118 | | | | | | | | | |
| | | | | TSVS | 43,952 | 5 | 0 | 1 | 109 | 47,349 | 5 | 0 | 1 | 117 | 47,948 | 5 | 0 | 1 | 118 | | | | | | | | | |
| | | | | TSS | 43,583 | 5 | 0 | 2 | 108 | 46,950 | 5 | 0 | 2 | 116 | 47,545 | 5 | 0 | 3 | 117 | | | | | | | | | |
| | | | | TSM | 43,572 | 5 | 0 | 4 | 108 | 46,939 | 5 | 0 | 4 | 116 | 47,533 | 5 | 0 | 4 | 117 | | | | | | | | | |
| | | | | TSW | 43,181 | 5 | 0 | 5 | 107 | 46,518 | 5 | 0 | 5 | 115 | 47,107 | 5 | 0 | 5 | 116 | | | | | | | | | |
| | | | | BLC | 35,847 | 5 | 0 | 5 | 89 | 38,617 | 5 | 0 | 5 | 95 | 39,106 | 5 | 0 | 5 | 97 | | | | | | | | | |
| | | | | LCCO | 25,602 | 3 | 0 | 5 | 63 | 27,580 | 3 | 0 | 5 | 68 | 27,930 | 3 | 0 | 5 | 69 | | | | | | | | | |
| | | | | | | | | | 25, | | | | | | | | | | | | | | | | | | | |

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Area Size 2 reflects the embedded high performance LED technology. It is ideal for applications like car dealerships and large parking lots adjacent to malls, transit stations, grocery stores, home centers, and other big-box retailers.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED drivers are mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (1.1 ft²) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS

Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K, or 5000 K (70 CRI) configurations. The D-Series Size 2 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L85/100,000 hrs at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily-serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 2 to withstand up to a 2.0 G vibration load rating per ANSI C136.31. The D-Series Size 2 utilizes the AERIS™ series pole drilling pattern (Template #8). NEMA photocontrol receptacle is available.

LISTINGS

UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40°C minimum ambient. U.S. Patent No. D670,857 S. International patent pending.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



Legend

| | | | |
|--|---|--|--|
| | PROPERTY LINE & CORNER | | EXISTING LIGHTPOLE |
| | ADJOINER PROPERTY LINE | | EXISTING CATCH BASIN |
| | DEED LIBER, PAGE | | EXISTING GUIDE RAIL |
| | TAX PARCEL DESIGNATION (SECTION - BLOCK - LOT) | | PROPOSED CONTOUR LINE |
| | EXISTING UTILITY POLE & LINE | | PROPOSED STRUCTURE |
| | EXISTING CULVERT & SIZE | | PROPOSED CONCRETE AREA |
| | STONE WALL | | PROPOSED WATER LINE |
| | VINYL FENCE | | PROPOSED POLE-MOUNTED LIGHTING FIXTURE |
| | CHAINLINK FENCE | | PROPOSED SIDEWALK |
| | APPROXIMATE LOCATION OF EXISTING BUILDING / STRUCTURE | | PROPOSED RETAINING WALL |
| | SIGN LOCATION | | TEST PIT LOCATION |
| | ZONING MINIMUM SETBACK LINE | | PERCOLATION LOCATION |
| | LIMITS OF TREELINE | | INFILTRATION TEST LOCATION |
| | UNPAVED DRIVEWAY | | PROPOSED SEPTIC TANK (SEE DETAIL) |
| | EXISTING CONTOUR LINE | | PROPOSED EFFLUENT PUMP STATION (SEE DETAIL) |
| | EXISTING CURBING | | PROPOSED DISTRIBUTION BOX 5' 4" DIA. SOLID WALL PVC PIPE |
| | APPROXIMATE LOCATION OF EXISTING WATER MAIN | | RESERVE 4" DIA. PERFORATED PVC SEWER DISTRIBUTOR PIPE |
| | WATER VALVE | | RESERVE 4" DIA. PERFORATED PVC SEWER DISTRIBUTOR PIPE |
| | EXISTING HYDRANT | | |

Zoning Legend: S/C

| SELF-STORAGE | REQUIRED | PROPOSED |
|-------------------------------|----------|------------|
| MINIMUM LOT AREA | 3 ACRES | 5.24 ACRES |
| MINIMUM LOT WIDTH (1) | 100' | 263.4' |
| MINIMUM LOT DEPTH | 12.5' | 723.2' |
| MINIMUM FRONT YARD | 60' | 60' |
| MINIMUM REAR YARD | 40' | 475.3' |
| MINIMUM SIDE YARD (ONE) | 30' | 31.0' |
| MINIMUM SIDE YARD (BOTH) | 60' | 135.2' |
| MAXIMUM LOT BUILDING COVERAGE | 30% | 10.1% |
| MAXIMUM BUILDING HEIGHT | 3.5' | 3.5' |
| MAXIMUM LOT COVERAGE (2) | 80% | 24.8% |

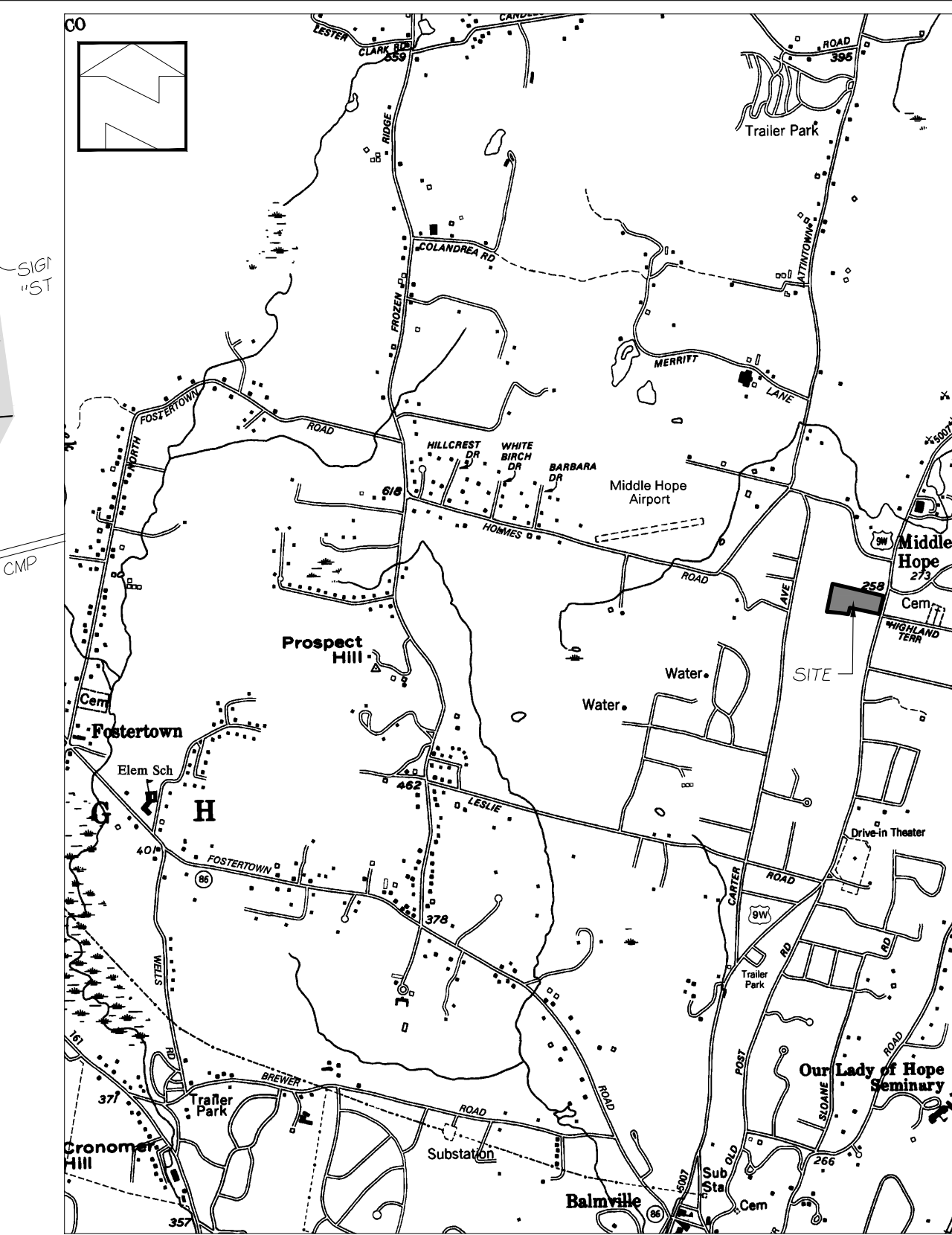
(1) MINIMUM LOT WIDTH MEASURED AT FRONT YARD SETBACK OR BUILDING LINE
 (2) LOT COVERAGE IS THE PERCENT COVERAGE OF ALL PROPOSED IMPERVIOUS SURFACES ON THE PARCEL

Notes:

1) THE INFORMATION SHOWN HEREON IS BASED UPON AN ACTUAL FIELD SURVEY COMPLETED BY VALLEY LAND SERVICES, LLC, 4383 HECKTOWN ROAD, BETHLEHEM, PA 1802 ON MAY 11, 2021

2.) TOPOGRAPHIC INFORMATION SHOWN HEREON TAKEN FROM GROUND SURVEY PERFORMED BY VALLEY LAND SERVICES, LLC ON MARCH 11, 2021

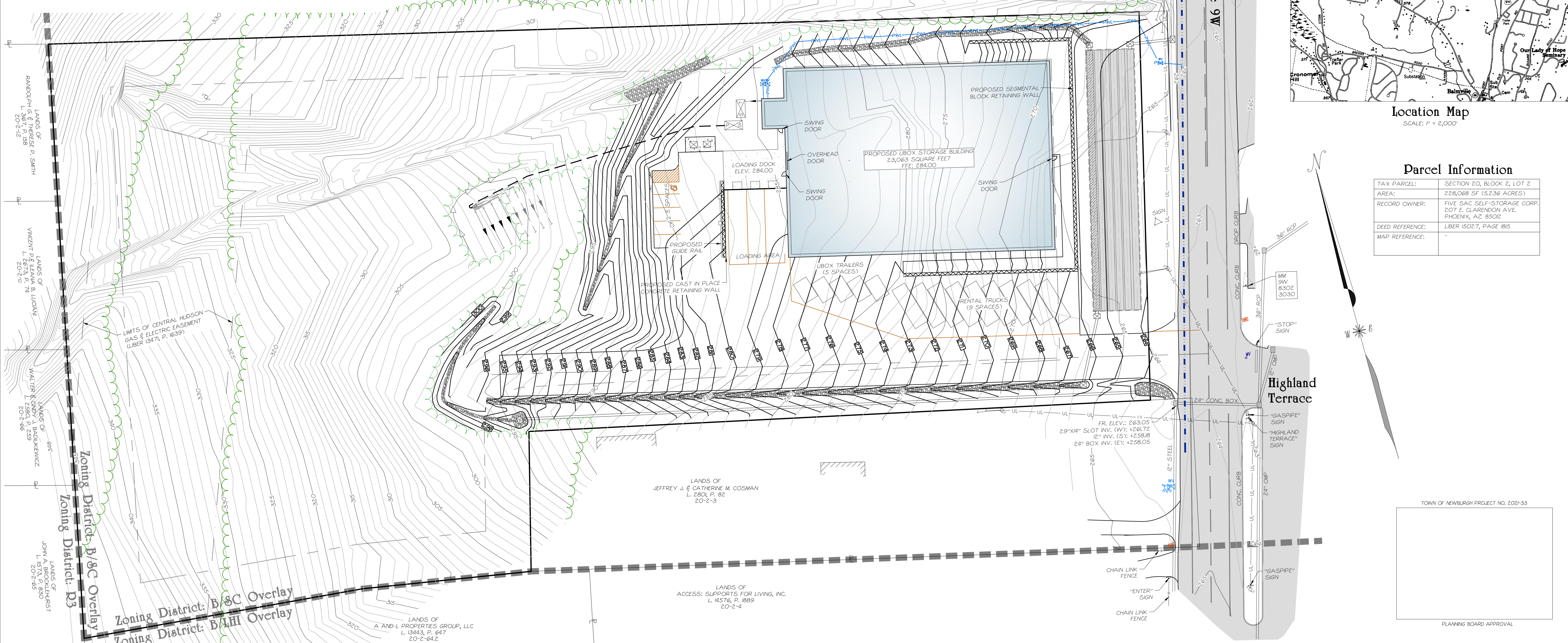
3.) TO AVOID ANY IMPACTS TO THE INDIANA BAT (MYOTIS SODALIS), A FEDERALLY LISTED ENDANGERED SPECIES, ALL CLEARING OF TREES FOR CONSTRUCTION ACTIVITIES SHALL OCCUR BETWEEN OCTOBER 1 AND MARCH 30.



Location Map
SCALE: 1" = 2,000'

Parcel Information

| | |
|-----------------|---|
| TAX PARCEL: | SECTION 20, BLOCK 2, LOT 2 |
| AREA: | 228,068 SF (5.236 ACRES) |
| RECORD OWNER: | FIVE SAC SELF-STORAGE CORP. 207 E. CLARENDON AVE. PHOENIX, AZ 85012 |
| DEED REFERENCE: | LIBER 15027, PAGE 1B15 |
| MAP REFERENCE: | - |



Zoning District: B/gC Overlay
 Zoning District: B/III Overlay
 Zoning District: B/SC Overlay
 Zoning District: R3

LANDS OF MICHAEL F. BESTENWEDER L. 8047, P. 388 20-2-69 LOT 1 - FM 5702

LANDS OF JOE A. BROCKMEYER L. 1573, P. 890 20-2-65

LANDS OF WALTER S. SNOLO L. 259 20-2-66

LANDS OF VINCENT P. ULIANA B. LUCANI L. 2673, P. 74 20-2-11

LANDS OF RANDOLPH G. & TERESA P. SMITH L. 367, P. 198 20-2-12

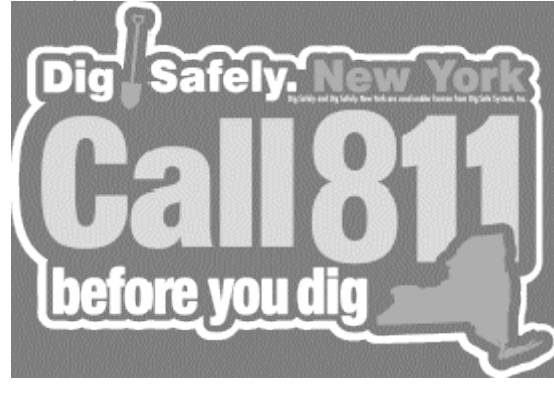
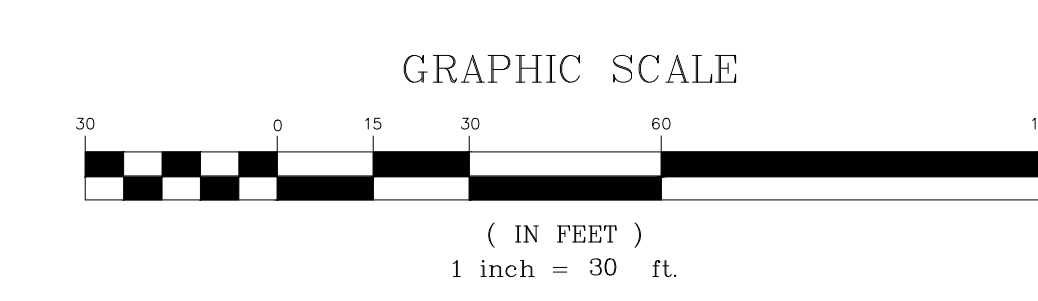
LANDS OF A AND L PROPERTIES GROUP, LLC L. 13443, P. 647 20-2-64.2

LANDS OF JEFFREY J. & CATHERINE M. COSMAN L. 280, P. 82 20-2-3

LANDS OF ACCESS: SUPPORTS FOR LIVING, INC. L. 14576, P. 1889 20-2-4

LANDS OF MIDDLE HOPE FIRE DISTRICT L. 1838, P. 118 20-2-1

LANDS OF CENTRAL HUDSON GAS & ELECTRIC EASEMENT (LIBER 13471, P. 1639)



"UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S EMBOSSED SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2, OF THE NEW YORK STATE EDUCATION LAW."
 "ONLY COPIES FROM THE ORIGINAL TRACING OF THIS SURVEY MAP MARKED WITH THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED VALID, TRUE COPIES."
 "CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYORS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS. SAID CERTIFICATIONS SHALL RUN ONLY TO THOSE NAMED INDIVIDUALS AND/OR INSTITUTIONS FOR WHOM THE SURVEY WAS PREPARED. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INDIVIDUALS, INSTITUTIONS, THEIR SUCCESSORS AND/OR ASSIGNS, OR SUBSEQUENT OWNERS."

| NO. | DATE | REVISION | BY |
|-----|---------|--------------------|-----|
| 1 | 2-11-22 | DETAILED SITE PLAN | ZAP |
| | | | |
| | | | |

MAP CK: LAWRENCE MARSHALL PE #087107

Overall Site Plan for U-Haul Self-Storage

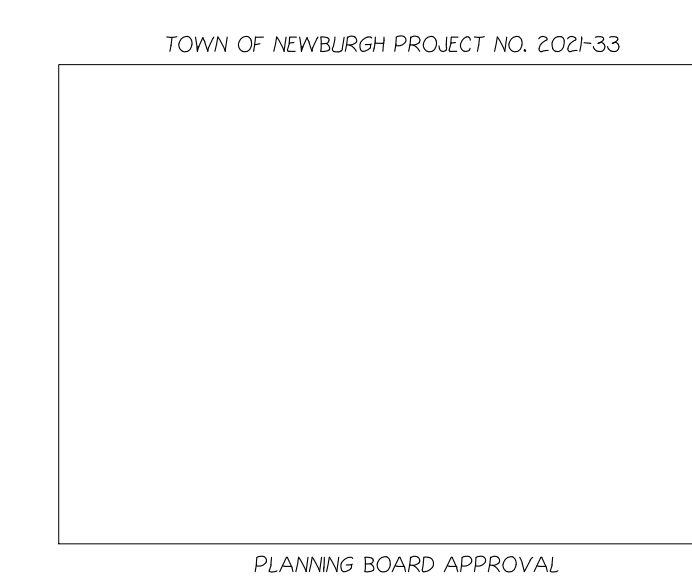
Mercurio-Norton-Tarolli-Marshall
 ENGINEERING - LAND SURVEYING

PO BOX 166, 45 MAIN STREET, PINE BUSH, NY 12566
 P: (845)744.3620 F: (845)744.3805 MNTM@MNTM.CO

THIS MAP IS INCOMPLETE AND INVALID WITHOUT ALL SHEETS IN THE PLAN SET.

TAX MAP PARCEL: 20-2-2
 TOWN OF NEWBURGH
 COUNTY OF ORANGE
 STATE OF NEW YORK

DRAFTED BY: LJM
 DATE: 2021 SEPT 8
 PROJECT: 4762
 SHEET: 1 / 10

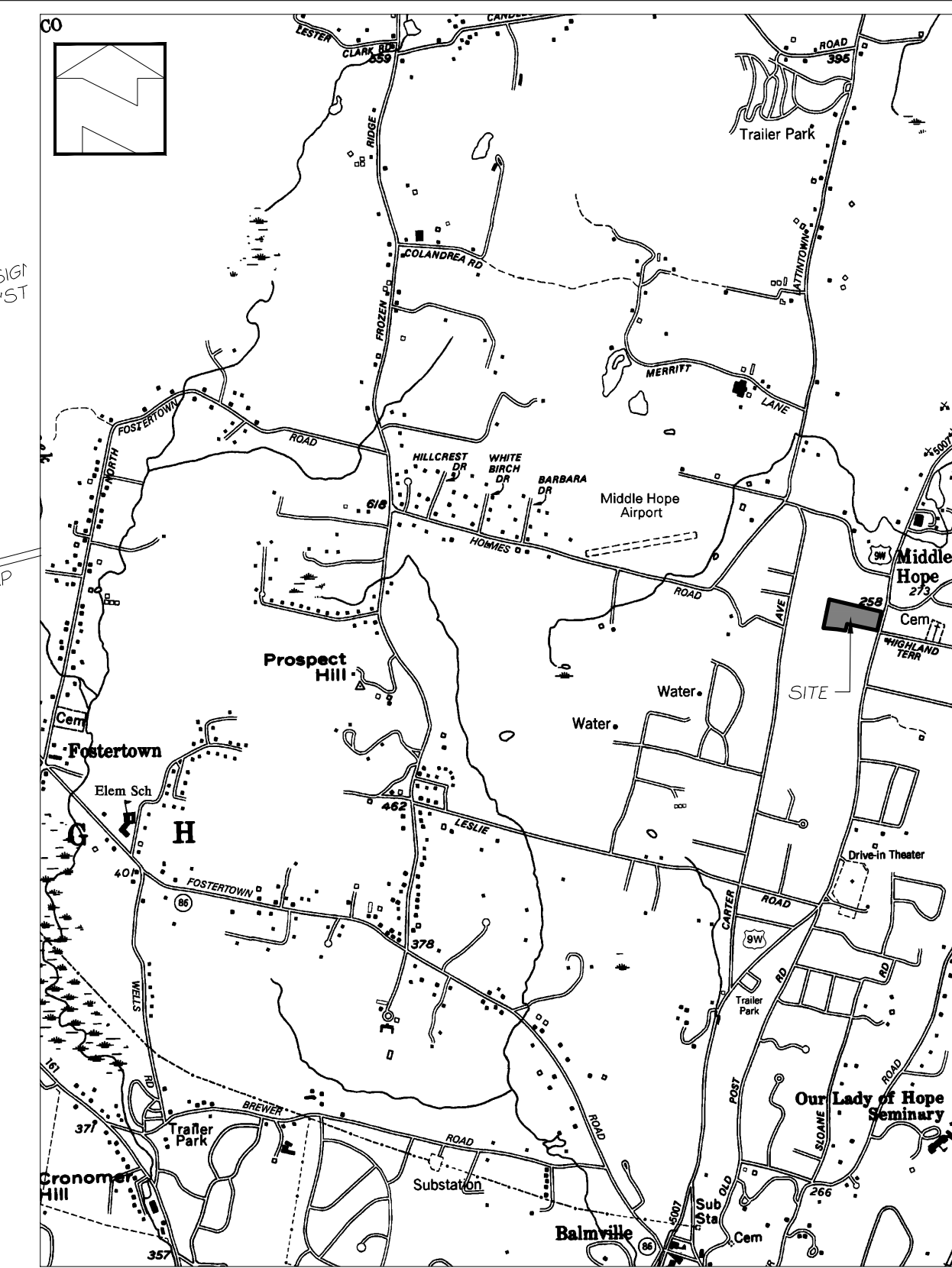
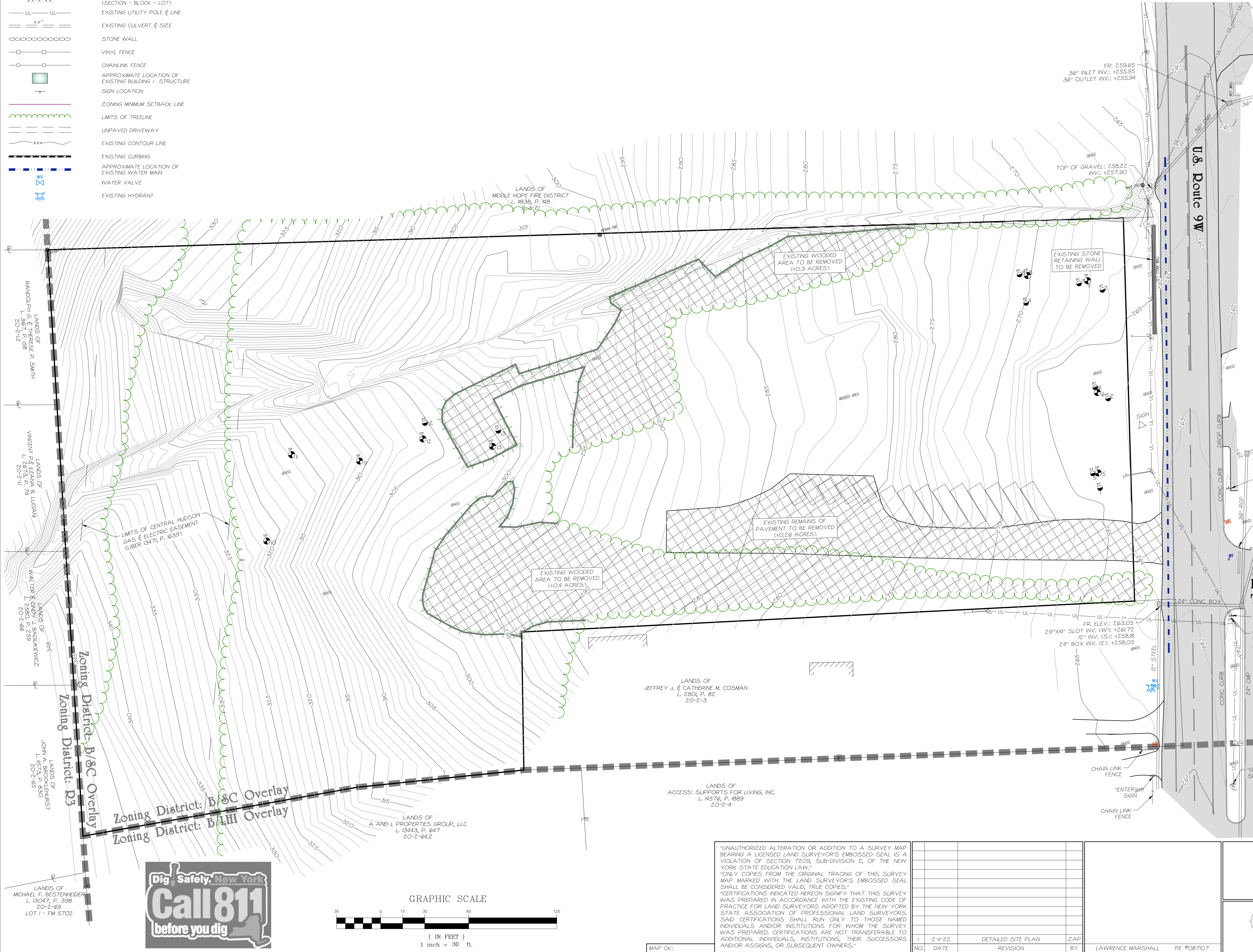


Legend

- PROPERTY LINE & CORNER
-
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-

Notes:

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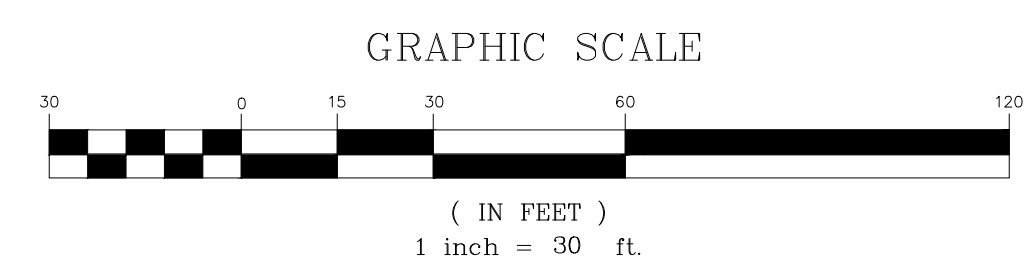


Location Map
SCALE: 1" = 2,000'

Parcel Information

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|-----------------|---|
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| RECORD OWNER: | FIVE SAC SELF-STORAGE CORP. 207 E. CLARENDON AVE. PHOENIX, AZ 85012 |
| DEED REFERENCE: | LIBER 15027, PAGE 1B15 |
| MAP REFERENCE: | - |

Highland Terrace



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| NO. | DATE | REVISION | BY |
|-----|---------|--------------------|-----|
| 1 | 2-11-22 | DETAILED SITE PLAN | ZAP |
| | | | |
| | | | |

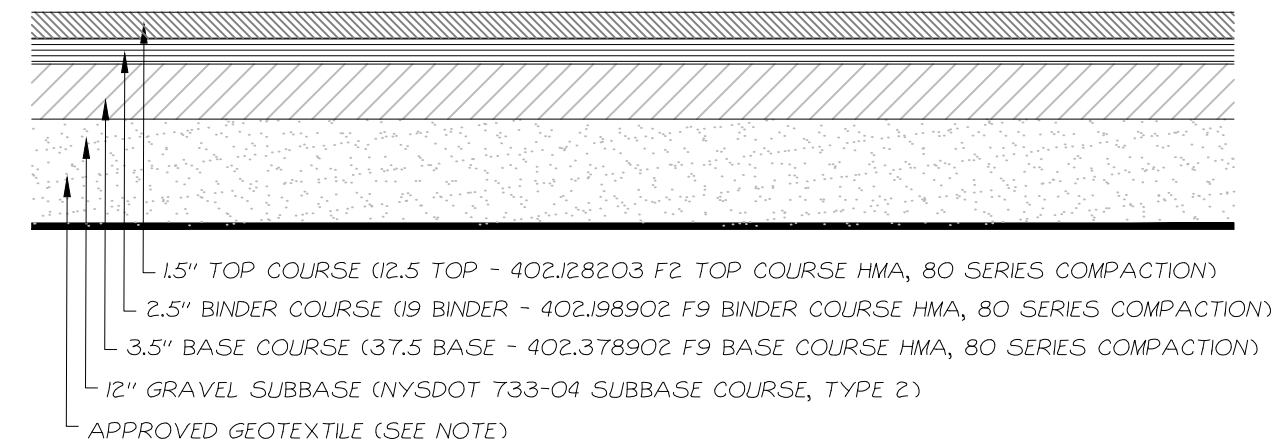
**Existing Conditions Plan
for
U-Haul Self-Storage**

MNTM
ENGINEERING-LAND SURVEYING
Mercurio-Norton-Tarolli-Marshall
PO BOX 166, 45 MAIN STREET, PINE BUSH, NY 12566
P: (845)744.3620 F: (845)744.3805 MNTM@MNTM.CO

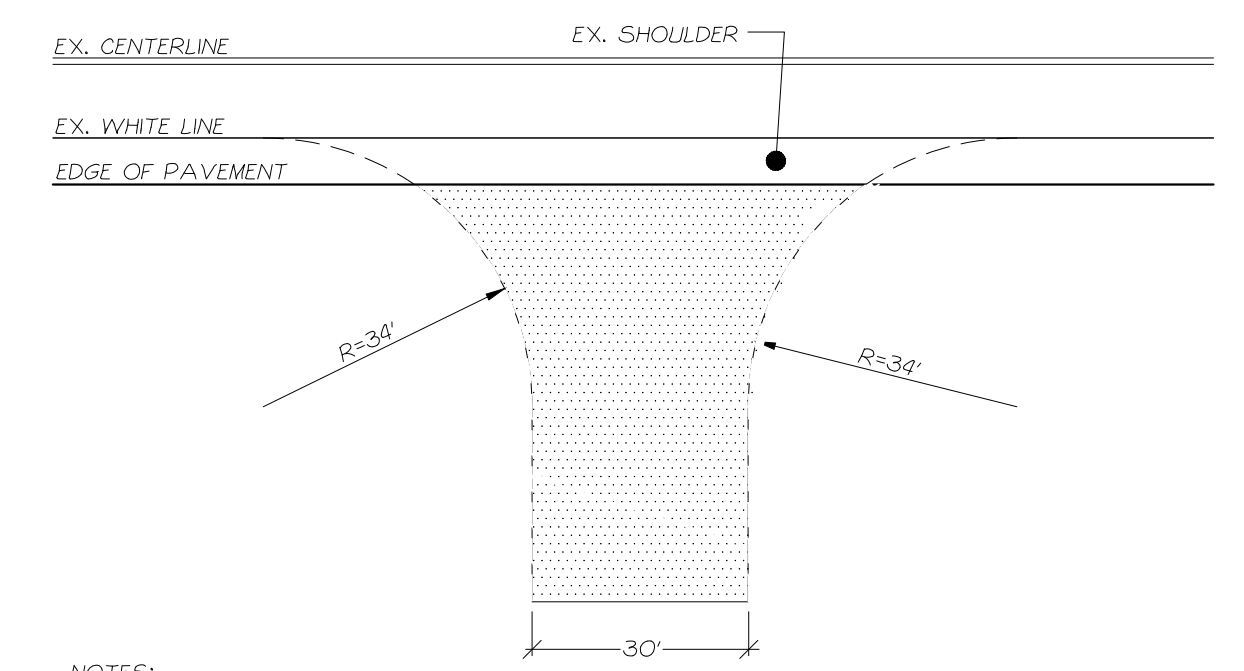
THIS MAP IS INCOMPLETE AND INVALID WITHOUT ALL SHEETS IN THE PLAN SET.
TAX MAP PARCEL: 20-2-2
TOWN OF NEWBURGH
COUNTY OF ORANGE
STATE OF NEW YORK
DRAFTED BY: LJM
DATE: 2021 SEPT 8
PROJECT: 4762
SHEET: 2 / 10

NYSDOT Notes:

- 1.) ALL WORK UNDER NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) JURISDICTION SHALL BE COMPLETED IN CONFORMANCE WITH NYSDOT 608-03 STANDARD SHEETS AND THE APPROVED DETAILS SHOWN ON THIS PLAN.
- 2.) SIGNS AND WORK ZONE TRAFFIC CONTROL SHALL ADHERE TO FEDERAL MUTCD WITH STATE SUPPLEMENT.
- 3.) PERFORM UTILITY INSTALLATION WITHIN THE NYSDOT RIGHT-OF-WAY (R.O.W.) IN ACCORDANCE WITH NYSDOT BLUE BOOK.
- 4.) ALL ADVERTISING SIGNS SHALL BE OFF THE NYSDOT RIGHT-OF-WAY.
- 5.) THE PUBLIC ROADWAY SHALL BE KEPT CLEAN AT ALL TIMES AND FREE OF ALL CONSTRUCTION DEBRIS.
- 6.) ALL WORK ZONE SIGNS AND FLAGGERS SHALL BE OFF THE ROADWAY WHEN NOT IN USE.
- 7.) NYSDOT NON-SEASONAL CONSTRUCTION IS NOT PERMITTED WITHIN THESE PLANS. ANOTHER REVIEW FROM NYSDOT IS REQUIRED WHEN ASKING FOR NON-SEASON WORK.
- 8.) ANY PROPOSED CHANGES WITHIN THE NYSDOT R.O.W. REQUIRES TWO (2) WEEK NOTICE TO THE REGION 9 NYSDOT PERMITS OFFICE AT 607-72-8082.
- 9.) NOTIFY DIG SAFELY (8B) A MINIMUM OF TWO (2) DAYS PRIOR TO THE COMMENCEMENT OF WORK.
- 10.) ADHERE TO NYSDOT PERMIT CLOSURE PROCESS FOR INSPECTION, BOND RELEASE, AND CLOSURE OF PERMIT.
- 11.) ANY SIDEWALKS AND SIDEWALK RAMPS PROPOSED REQUIRED ADA (AMERICANS WITH DISABILITIES ACT) COMPLIANT INSPECTIONS. A LICENSED NEW YORK STATE PROFESSIONAL ENGINEER SHALL PERFORM THE REQUIRED PRE-POUR CONCRETE FORM INSPECTION AND SUBMIT A SIGNED & DATED INSPECTION REPORT VERIFYING THE FORMS MEET ADA REGULATIONS PRIOR TO THE SIDEWALKS BEING POURED.
- 12.) AFTER COMPLETION OF SIDEWALK CONSTRUCTION, IF ANY, A LICENSED NEW YORK STATE PROFESSIONAL ENGINEER SHALL COMPLETE AND SUBMIT A SIGNED AND SEALED NYSDOT "CRITICAL ELEMENTS FOR THE DESIGN AND LAYOUT AND ACCEPTANCE OF PEDESTRIAN FACILITIES" FORM CONFIRMING COMPLIANCE WITH ALL OTHER APPLICABLE CODES, STANDARDS, AND SPECIFICATIONS. IN INSTANCES WHERE NONSTANDARD FEATURES CANNOT BE PROVIDED, A JUSTIFICATION FORM WILL NEED TO BE COMPLETED UNDER THE PROCESS PROMULGATED UNDER THE NYSDOT HIGHWAY DESIGN MANUAL CHAPTER 2 (REFER TO EXHIBIT 2-15A).
- 13.) NYSDOT CONSTRUCTION HOLIDAY LANE CLOSURES RESTRICTIONS AS STATED IN NYSDOT ENGINEERING DIRECTIVE ED 15-002 SHALL BE ADHERED TO.
- 14.) ALL UTILITIES WITHIN THE NYSDOT RIGHT OF WAY SHALL BE INSTALLED IN ACCORDANCE WITH THE NYSDOT BLUE BOOK (NYSDOT REQUIREMENTS FOR THE DESIGN AND CONSTRUCTION OF UNDERGROUND UTILITY INSTALLATIONS WITHIN THE STATE HIGHWAY RIGHT-OF-WAY).
- 15.) NYSDOT NON-SEASONAL CONSTRUCTION IS NOT PERMITTED WITHIN THESE PLANS. IF NON-SEASONAL WORK IS REQUESTED, A SEPARATE REVIEW IS REQUIRED TO BE COMPLETED BY NYSDOT.
- 16.) NYSDOT HIGHWAY WORK PERMIT AND NYSDOT STAMPED, APPROVED PLANS SHALL BE ISSUED AND PRESENT AT JOB LOCATION AT ALL TIMES THROUGHOUT CONSTRUCTION.
- 17.) ALL SIGNS AND WORK ZONE TRAFFIC CONTROL SHALL ADHERE TO FEDERAL MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) REGULATIONS WITH NEW YORK STATE SUPPLEMENT.
- 18.) THE SCHWABER NYSDOT RESIDENT ENGINEER SHALL BE CONTACTED AT LEAST SEVEN (7) DAYS PRIOR TO THE START OF ANY WORK.
- 19.) ALL MATERIALS USED WITHIN THE NYSDOT RIGHT-OF-WAY MUST COMPLY WITH THE CURRENT NYSDOT STANDARDS AND SPECIFICATIONS.
- 20.) ROADWAY SHALL BE KEPT CLEAN AT ALL TIMES AND FREE OF ALL CONSTRUCTION DEBRIS.
- 21.) ALL WORK ZONE SIGNS AND FLAGGERS SHALL BE OFF THE ROADWAY WHEN NOT IN USE.
- 22.) ANY PROPOSED CHANGES WITHIN THE NYSDOT RIGHT OF WAY REQUIRES A MINIMUM TWO (2) WEEK NOTICE TO THE NYSDOT REGION 9 PERMITS OFFICE.



NYSDOT Asphalt Pavement Section

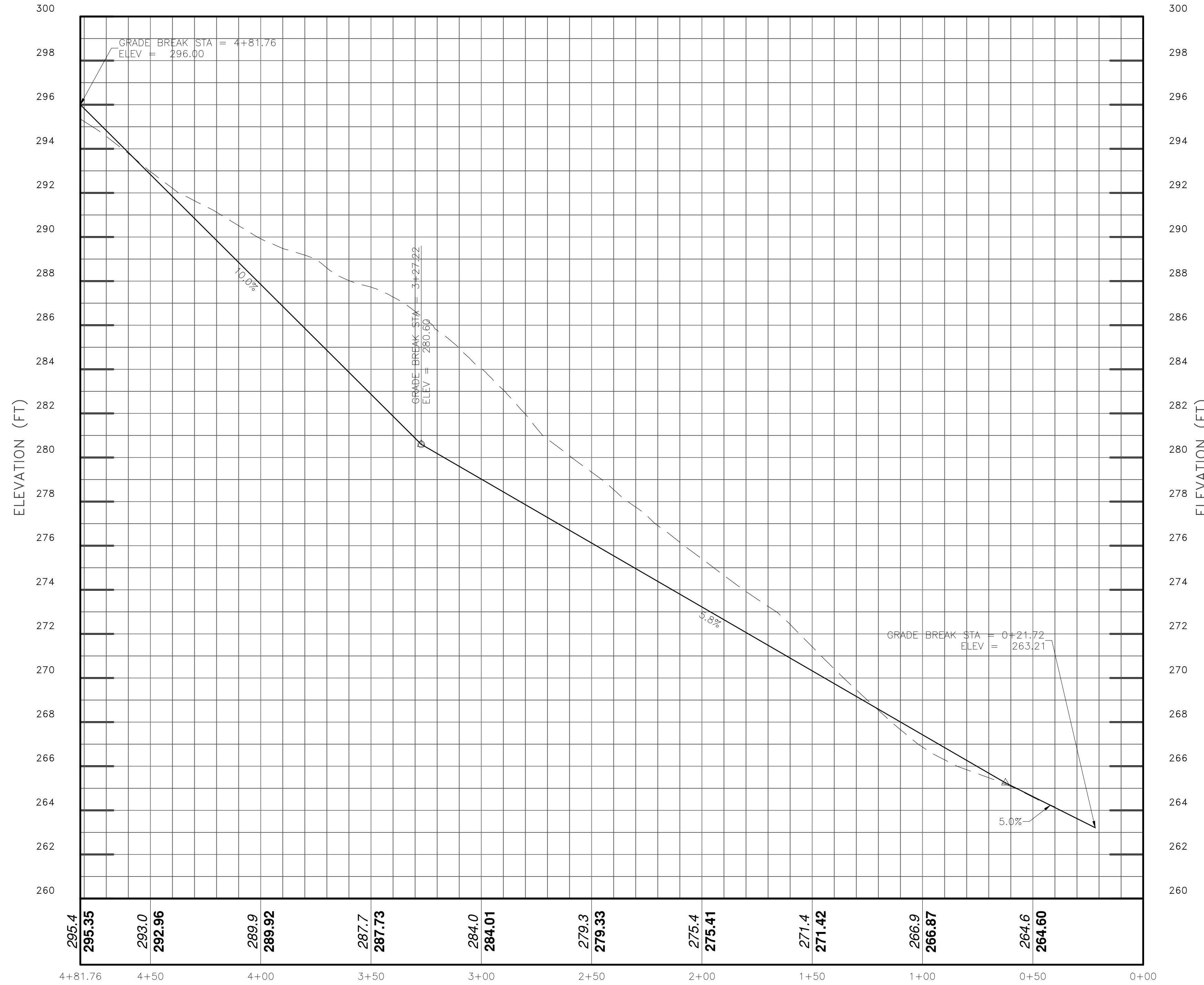
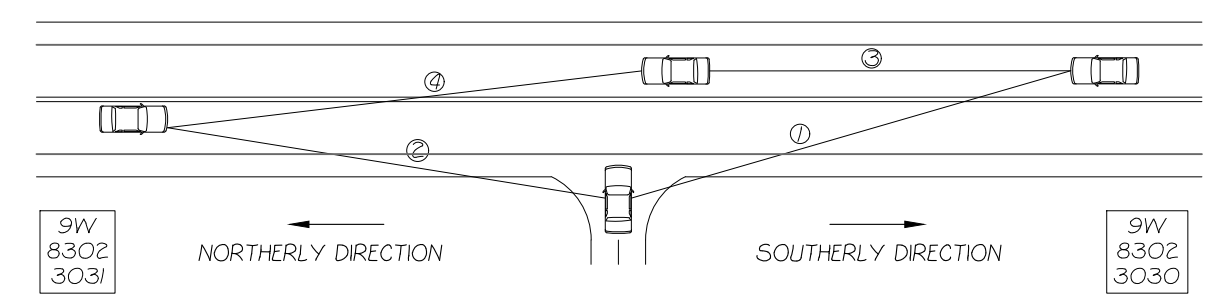


- NOTES:
- 1.) ALL MATERIALS SHALL MEET N.Y.S.D.O.T. SPECIFICATIONS.
 - 2.) TACK COAT SHALL BE APPLIED BETWEEN ALL HOT MIX ASPHALT LIFTS IN ACCORDANCE WITH SECTION 407 OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION CONSTRUCTION INSPECTION MANUAL.
 - 3.) ENTRANCE WORK SHALL BE COMPLETED IN ACCORDANCE WITH SHEET 9 OF NYSDOT STANDARD SHEET 608-03.

NYSDOT Entrance & Pavement Detail

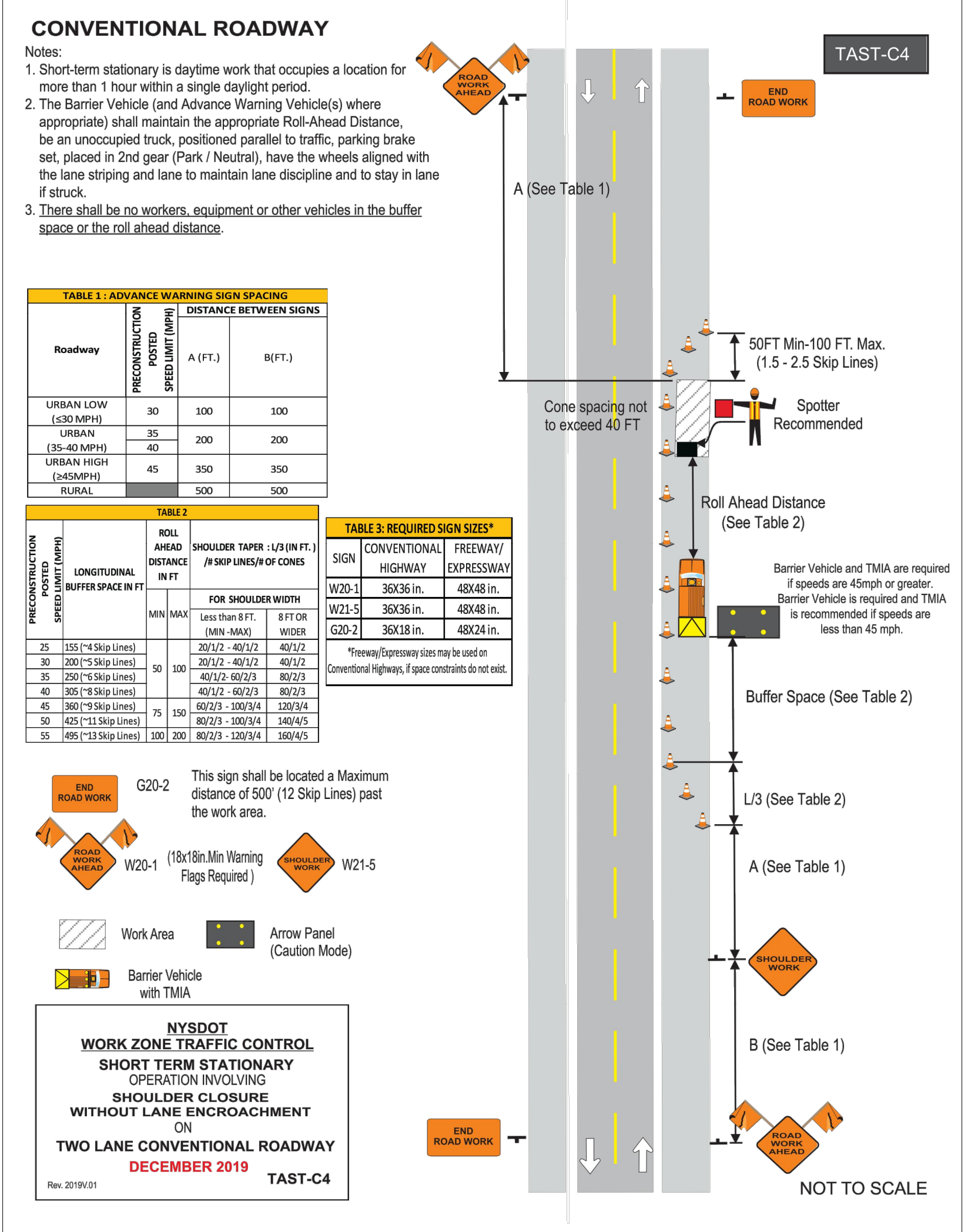
Sight Distance Table

| MEASUREMENTS RECORDED BY: R. SMITHEN | | DATE: FEBRUARY 10, 2022 | |
|--|------------|-------------------------|--|
| SPEED LIMIT ALONG US ROUTE 9W = 40 MPH | | | |
| LOCATION | SIGHT LINE | DISTANCE | NOTES |
| PROPOSED ACCESS DRIVE | 1 | > 1,000' | MINOR CLEARING OF VEGETATION WITHIN R.O.W. |
| | 2 | +500' | MINOR GRADING REQUIRED ALONG SITE FRONTAGE |
| | 3 | > 1,000' | - |
| | 4 | > 1,000' | - |

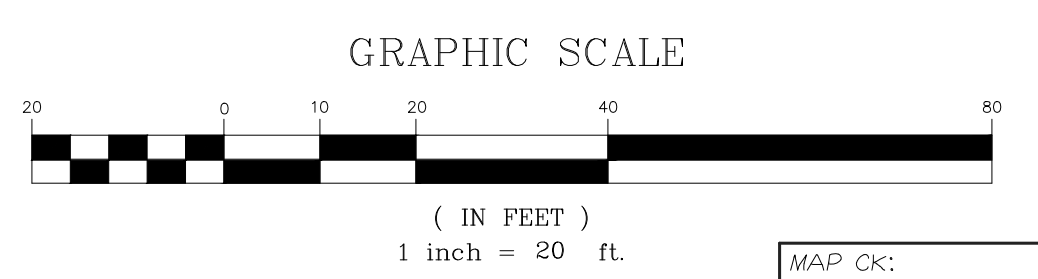


NYSDOT Entrance Profile

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=3'



Work Zone Traffic Control Plan



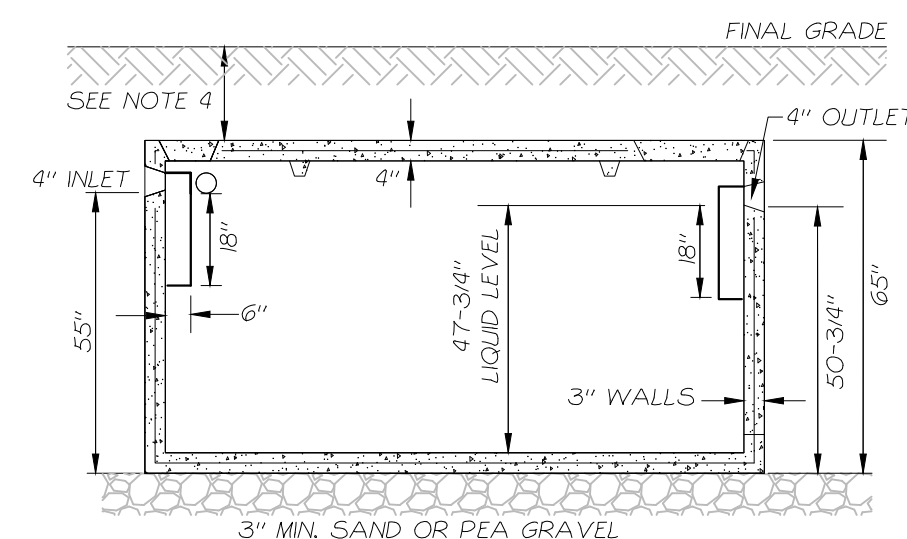
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| NO. | DATE | REVISION | BY |
|-----|---------|--------------------|-----|
| 1 | 2-11-22 | DETAILED SITE PLAN | ZAP |
| | | | |

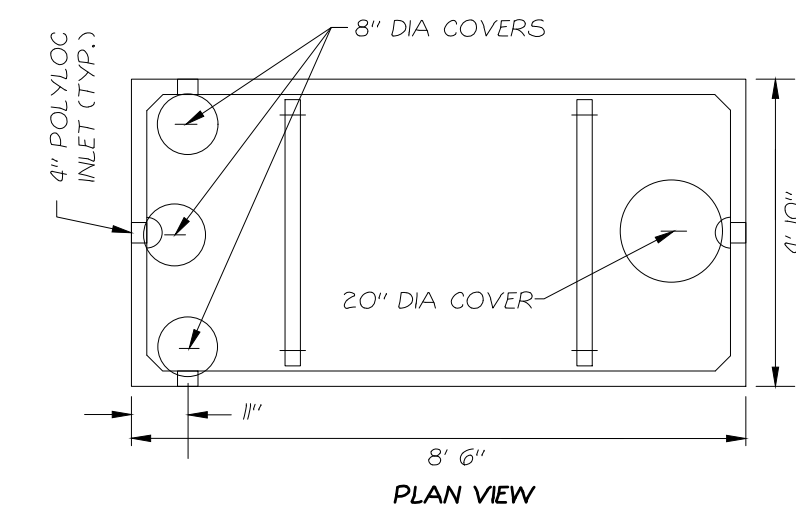
NYSDOT Entrance Details for U-Haul Self-Storage

MNTM
Mercurio-Norton-Tarolli-Marshall
ENGINEERING - LAND SURVEYING
PO BOX 166, 45 MAIN STREET, PINE BUSH, NY 12566
P: (845)744.3620 F: (845)744.3805 MNTM@MNTM.CO

THIS MAP IS INCOMPLETE AND INVALID WITHOUT ALL SHEETS IN THE PLAN SET.
TAX MAP PARCEL: 20-2-2
TOWN OF NEWBURGH
COUNTY OF ORANGE
STATE OF NEW YORK
DRAFTED BY: LJM
DATE: 2021 SEPT 8
PROJECT: 4762
SHEET: 5 / 10



CROSS SECTION VIEW



PLAN VIEW

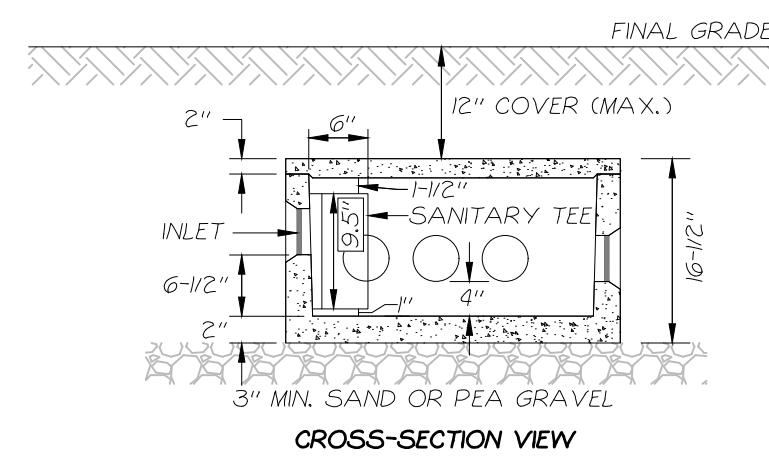
NOTES:
1) SEPTIC TANK SHALL BE MODEL ST-1000, OR APPROVED EQUAL, AS MANUFACTURED BY:
WOODARDS CONCRETE PRODUCTS, INC.
629 LYBOLT ROAD
BULLVILLE, NY 10915
(845) 361-3471

- 2) ALL PIPE JOINTS (INLET & OUTLET PIPES) SHALL BE SEALED WITH ASPHALTIC MATERIAL OR EQUIVALENT.
- 3) INLET Baffle CAN BE RELOCATED TO THE SIDE.
- 4) IF COVER EXCEEDS 12" A RISER MUST BE USED TO ALLOW ACCESS.

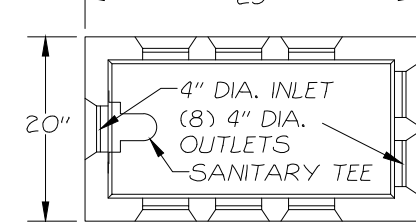
CONCRETE MINIMUM STRENGTH: 4,000 P.S.I. AT 28 DAYS
STEEL REINFORCEMENT: 6" x 6" X10 GA. STEEL WIRE MESH
#4 REBAR AROUND PERIMETER
CONSTRUCTION JOINT: SEALED WITH BUTYL RUBBER CEMENT
WEIGHT: 6,700 LBS
LOAD RATING: 300 PSF

Typical Precast 1,000-Gallon Concrete Septic Tank

NOT TO SCALE



CROSS-SECTION VIEW



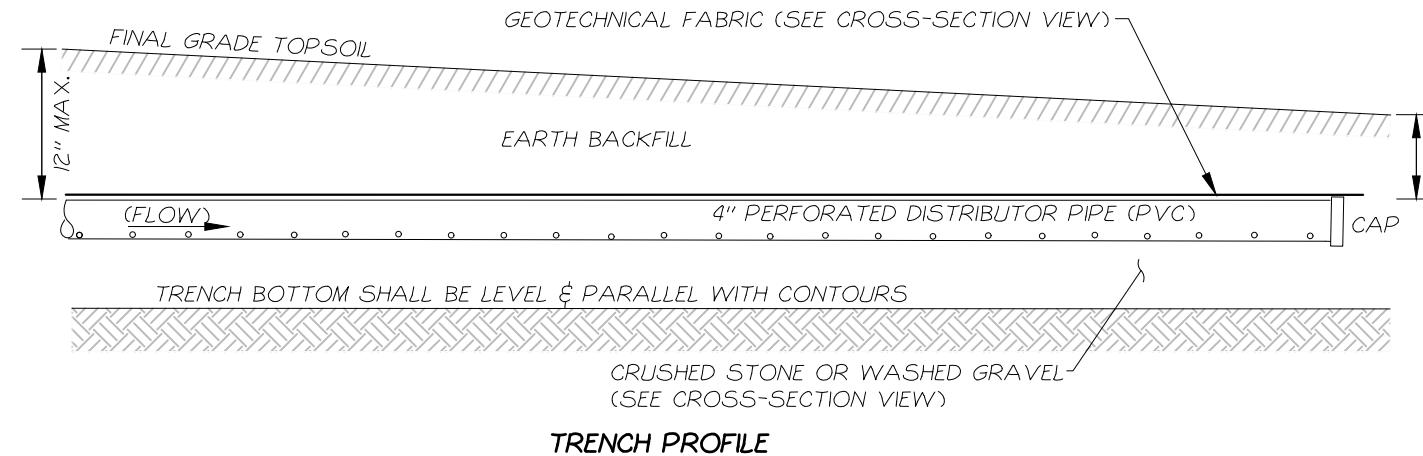
PLAN VIEW

NOTES:
1) DISTRIBUTION BOX SHALL BE MODEL DB-9, OR APPROVED EQUAL, AS MANUFACTURED BY:
WOODARDS CONCRETE PRODUCTS, INC.
629 LYBOLT ROAD
BULLVILLE, NY 10915
(845) 361-3471

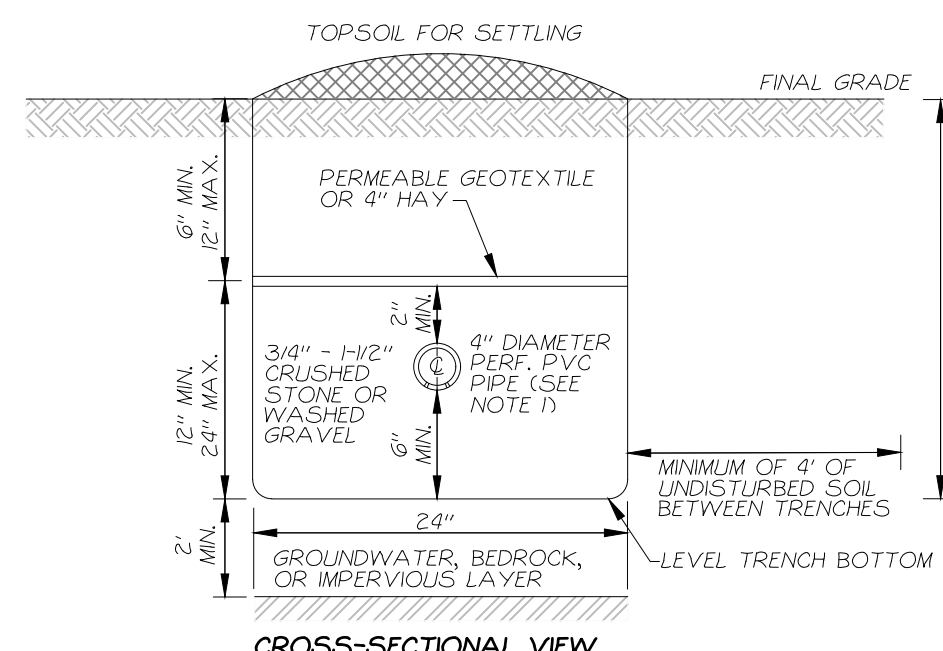
- 2) FLOW EQUALIZERS SHALL BE USED TO ENSURE EQUAL FLOW TO EACH OUTLET PIPE. YEARLY CHECKING AND ADJUSTMENT IS RECOMMENDED.
- 3) ALL PIPE JOINTS (INLET & OUTLET) SHALL BE SEALED WITH ASPHALTIC MATERIAL OR EQUIVALENT.
- 4) A SANITARY TEE, 90° ELBOW, OR OTHER APPROVED Baffle SHALL BE INSTALLED AT THE INLET.
- 5) OUTLET INVERTS SHALL BE SET AT THE SAME ELEVATION.
- 6) OUTLETS MUST BE USED IN A MANNER TO ALLOW ACCESS TO THE NECESSARY NUMBER OF OUTLETS FOR THE EXPANSION AREA WITHOUT DISTURBING THE INITIAL SYSTEM.

Typical Precast Concrete Distribution Box

NOT TO SCALE



TRENCH PROFILE

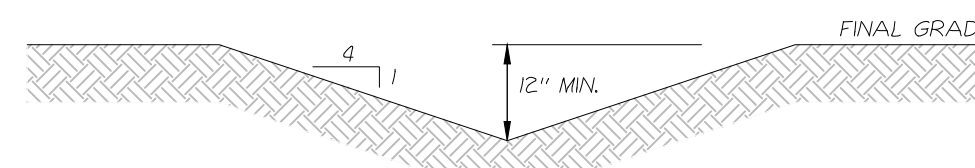


CROSS-SECTIONAL VIEW

NOTES:
1) DISTRIBUTION PIPE SHALL BE INSTALLED WITH PIPE PERFORATIONS FACING DOWN.

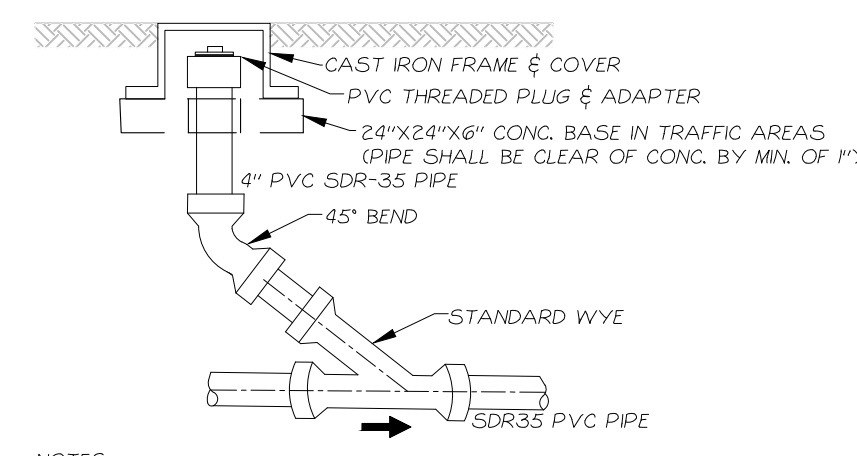
- 2) DO NOT INSTALL TRENCHES IN WET SOIL. TRENCH SIDES AND BOTTOMS SHALL BE RAKED PRIOR TO INSTALLATION OF GRAVEL.
- 3) THE END OF EACH LATERAL SHALL BE CAPPED.
- 4) LATERALS SHALL BE SLOPED 1/8" - 1/32" PER FOOT FOR GRAVITY SYSTEMS. LATERALS SHALL BE INSTALLED LEVEL FOR PUMPED OR DOSED SYSTEMS.
- 5) LATERALS SHALL BE INSTALLED 6 FEET ON CENTER, MINIMUM.

Absorption Trench Detail



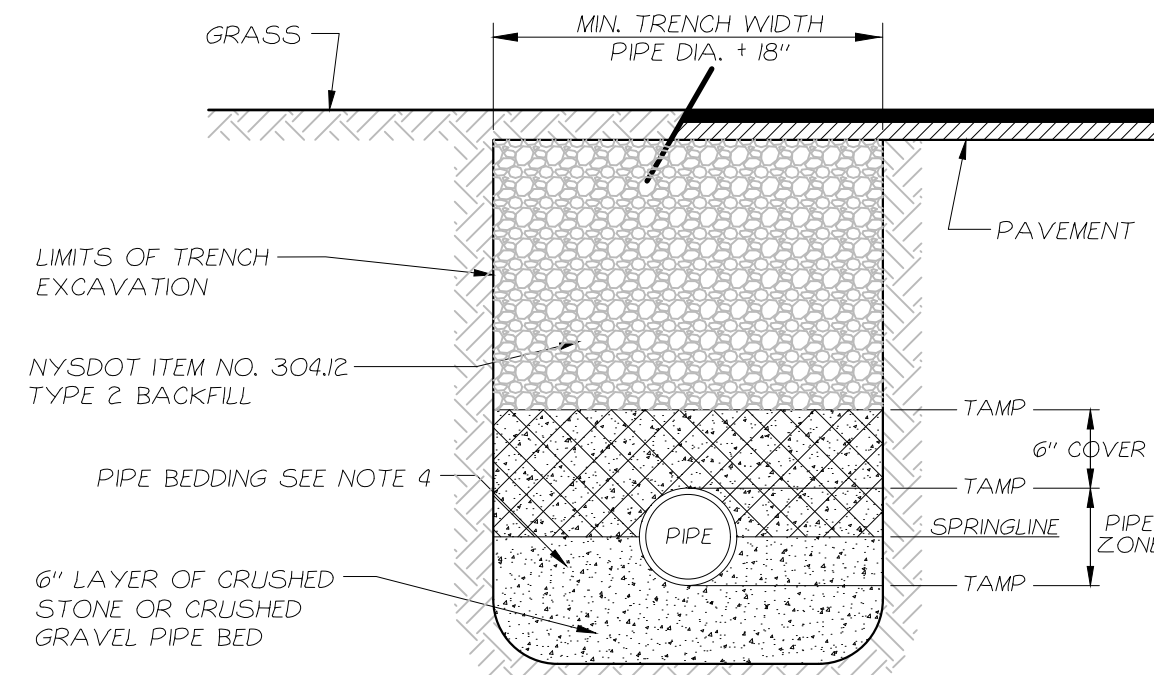
NOTE: THE DIVERSION SWALE SHALL BE SEEDED & MULCHED IMMEDIATELY FOLLOWING CONSTRUCTION.

Diversion Swale Detail



NOTES:
1) CLEANOUTS SHALL BE PROVIDED IN LOCATIONS SHOWN ON SITE PLAN.

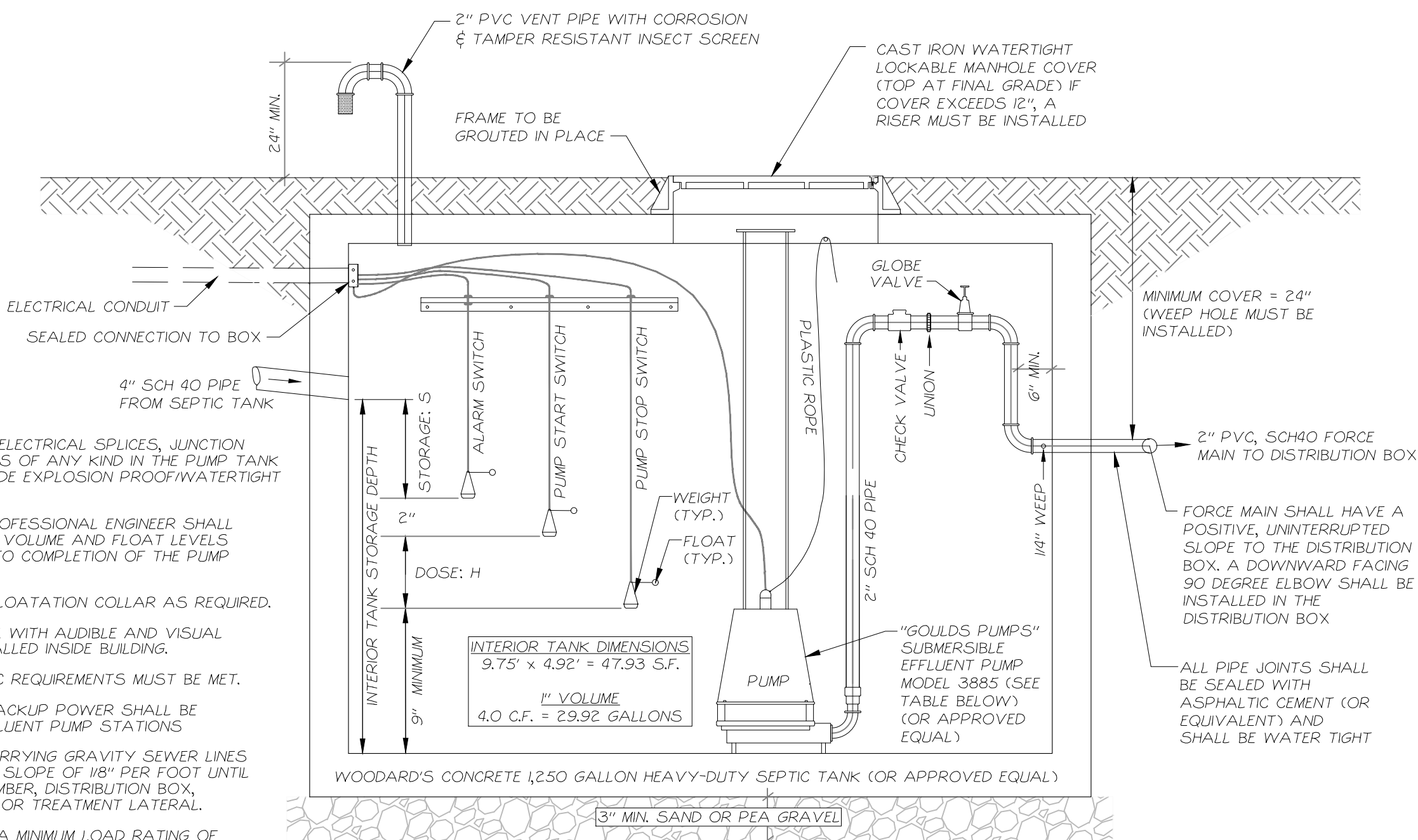
In Line Cleanout



- NOTES:
1) ALL BACKFILL SHALL BE NYS DOT ITEM NO. 304J2 TYPE 2.
2) IN LAWN AREAS, A MINIMUM OF 6 INCHES OF TOPSOIL SHALL BE PLACED ON TOP OF THE NYS DOT ITEM 4 BACKFILL AND SHALL BE SEEDED AND MULCHED WITH SEED IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS.
3) IN PAVED AREAS, THE EXISTING PAVEMENT SHALL BE SAW CUT PRIOR TO REMOVAL. REPLACEMENT OF THE PAVEMENT SHALL BE COMPLETED WITH A MINIMUM OF 4" NYS DOT ITEM 4 LEVELING COURSE, 5" ASPHALT BINDER COURSE (PLACED IN 2' LIFTS), AND 2" ASPHALT TOP COURSE. EXISTING PAVEMENT SHALL BE MILLED TO A 2" DEPTH AT LEAST 2 FEET BEYOND TRENCH WIDTH IN ALL DIRECTIONS, PRIOR TO PLACEMENT OF FINAL TOP COURSE. TOP COURSE SHALL EXTEND THE ENTIRE WIDTH OF THE TRENCH AND MILLED SECTION OF PAVEMENT.
4) PIPE BEDDING MATERIAL SHALL BE COMPOSED OF CRUSHED STONE OR GRAVEL FREE OF SOFT NON-DURABLE PARTICLES, ORGANIC MATERIALS AND THIN OR ELONGATED PARTICLES WITH THE FOLLOWING GRADATION REQUIREMENTS

| SIEVE DESIGNATION | % PASSING |
|-------------------|-----------|
| 2" | 100 |
| 1" | 95 - 100 |
| 3/4" | 0 - 15 |
| NO. 40 | 0 - 5 |

Typical Trench Detail



| DOSE VOLUME (GAL.) | H (MIN.) | S (MIN.) | 1" TANK VOLUME (GAL.) | LIQUID LEVEL | PUMP TYPE |
|--------------------|----------|----------|-----------------------|--------------|-----------|
| 120 | 4.0" | 2.5.0" | 29.92 | 40" | WE07H |

Effluent Sewage Pump Chamber Cross-section Detail

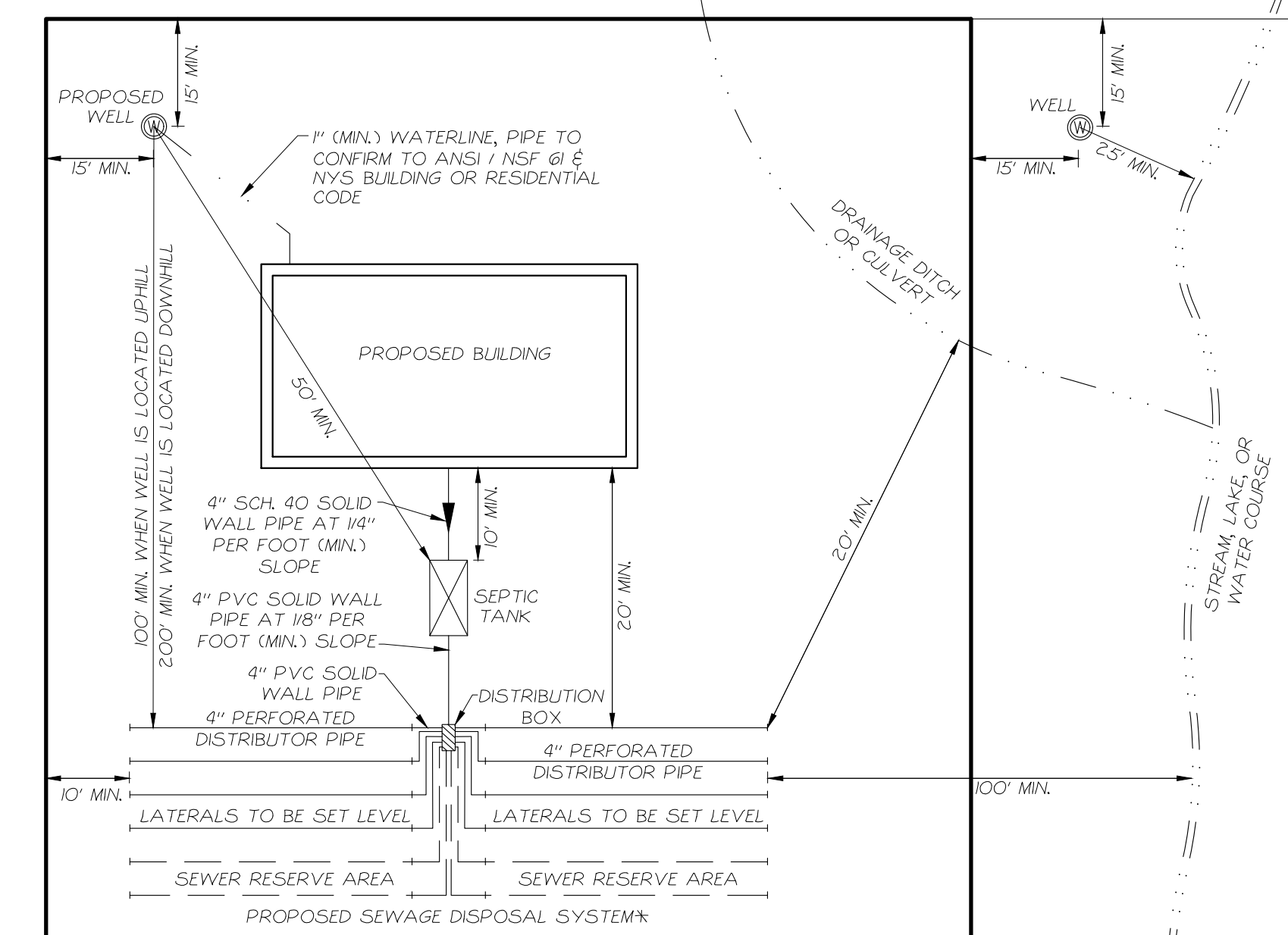
NOT TO SCALE

| FEATURES | WATERTIGHT SEPTIC TANK | SEWER LINE | ABSORPTION FIELDS OR UNLINED SAND FILTER (INCLUDING REPLACEMENT AREA) | ABSORPTION FIELDS LOCATED IN GRAVEL SOILS (INCLUDING REPLACEMENT AREA) | SEEPAGE PITS (INCLUDING REPLACEMENT AREA) |
|--|------------------------|------------|---|--|---|
| DRILLED WELL (PUBLIC WATER SUPPLY) (A) | 100' | 50' | 200' | 200' | 200' |
| DRILLED WELL (PRIVATE WATER SUPPLY) (B) | 50' | 50' | 100' | 200' | 150' |
| WATERLINE (PRESSURE) (C) | 10' | 10' | 10' | 10' | 10' |
| WATERLINE (SUCTION) | 50' | 50' | 100' | 100' | 150' |
| DUG WELL / SPRING (D) | 75' | 50' | 150' | 200' | 150' |
| SURFACE WATER (E) | 50' | 2.5' | 100' | 100' | 100' |
| RESERVOIR (PRIVATE WATER SUPPLY) (F) | 50' | 50' | 100' | 100' | 100' |
| RESERVOIR (PUBLIC WATER SUPPLY) (F) | 100' | 100' | 200' | 200' | 200' |
| INTERCEPTOR DRAIN - OPEN DRAINAGE DIVERSION TO GROUNDWATER | 2.5' | 2.5' | 50' (G) | 50' (G) | 50' (G) |
| STORMWATER MANAGEMENT - INFILTRATION | 2.5' | 2.5' | 50' (G) | 50' (G) | 50' (G) |
| STORMWATER MANAGEMENT - SURFACE WATER DISCHARGE (G) | 50' | 2.5' | 100' | 100' | 100' |
| CULVERT (TIGHT PIPE) | 2.5' | 10' | 35' | 35' | 35' |
| CULVERT OPENING | 2.5' | 2.5' | 50' | 50' | 50' |
| CATCH BASIN | 2.5' | NA | 50' | 50' | 50' |
| SWIMMING POOL (IN-GROUND) | 20' | 10' | 35' | 35' | 50' |
| FOUNDATION | 10' | NA | 20' | 20' | 20' |
| PROPERTY LINE | 10' | 10' | 10' | 10' | 10' |
| TOP OF EMBANKMENT | 2.5' | 2.5' | 50' | 50' | 50' |
| WETLAND (NYSDEC) (H) | 100' | 100' | 100' | 100' | 100' |

- (A) REFER TO PUBLIC HEALTH LAW PART 5-4, APPENDICES 5-B & 5-D
- (B) REFER TO PUBLIC HEALTH LAW PAR 5-4, APPENDIX 5-B
- (C) REFER TO PUBLIC HEALTH LAW PART 5-4, APPENDIX 5-A
- (D) WHEN WASTEWATER TREATMENT SYSTEMS ARE LOCATED UP-GRADE AND IN THE DIRECT PATH OF SURFACE RUNOFF TO A WELL, THE CLOSEST PART OF THE TREATMENT SYSTEM SHOULD BE AT LEAST 200 FEET AWAY FROM THE WELL.
- (E) IF THERE IS A DIRECT DISCHARGE TO SURFACE WATER, USE THE SURFACE WATER SEPARATION DISTANCES; IF A WATER SUPPLY USE THE RESERVOIR (WATER SUPPLY) DISTANCES.
- (F) REFER TO LOCAL WATERSHED RULES AND REGULATIONS FOR POSSIBLE SUPERSEEDING SPECIFICATIONS.
- (G) SEPARATION DISTANCE MAY BE REDUCED TO 35' IF THE BOTTOM OF THE DRAIN IS ABOVE THE FINISHED GRADE OF THE SUBSURFACE SOIL TREATMENT SYSTEM, KEEPING THE DRAIN WATER AND WASTEWATER SEPARATE.
- (H) A REDUCED SEPARATION DISTANCE, IF ANY, IS DETERMINED THROUGH THE PERMIT REVIEW PROCESS WITH THE NYSDEC.

Minimum Separation Distances From Existing Or Proposed Features

AS PER NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION "DESIGN STANDARDS FOR INTERMEDIATE SIZED WASTEWATER TREATMENT SYSTEMS", PUBLISHED MARCH 5, 2014



Generic Plot Plan

* THE "GENERIC PLOT PLAN" IS INTENDED FOR ILLUSTRATION PURPOSES ONLY. FOR SPECIFIC DESIGN INFORMATION ON THE PROPOSED SEWAGE DISPOSAL SYSTEM, SEE THE SEWAGE DISPOSAL SYSTEM REQUIREMENTS TABLE, DETAILS, AND NOTES ON THIS SHEET.

General Notes:

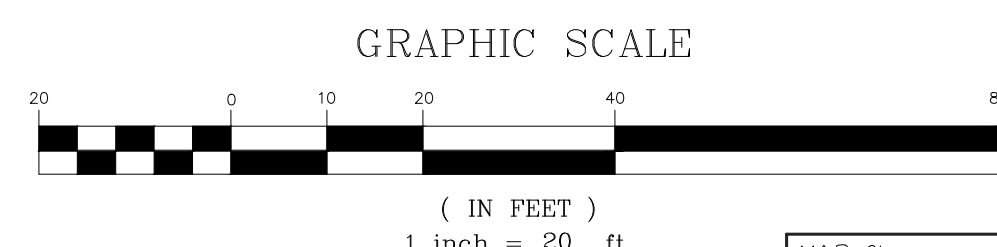
- 1) PIPE JOINTS TO BE SEALED WITH ASPHALTIC MATERIAL OR EQUIVALENT.
- 2) ALL 4" OUTLET PIPES (SOLID WALL) LEAVE DISTRIBUTION BOX AT SAME ELEVATION ON A MINIMUM SLOPE OF 1/8" PER FOOT UP TO A DISTRIBUTOR LATERAL.
- 3) SEWAGE DISPOSAL SYSTEMS LOCATED OF NECESSITY UPGRADE IN THE GENERAL PATH OF DRAINAGE TO A WELL MUST BE SPACED 200' OR MORE AWAY.
- 4) NO DRIVEWAY, ROADWAY, PARKING AREA OR ABOVE GROUND SWIMMING POOL IS TO BE CONSTRUCTED OVER ANY PORTION OF THE SEWER SYSTEM. HEAVY EQUIPMENT SHALL BE KEPT OUT OF THE ABSORPTION FIELD AREA.
- 5) ALL DISTRIBUTOR LINES (PERFORATED) SHALL BE OF EQUAL LENGTH.
- 6) ALL TREES TO BE CUT & REMOVED FROM SEWAGE DISPOSAL AREA IN A MANNER THAT WILL NOT DISTURB THE VIRGIN SOIL LAYER.
- 7) MAXIMUM GROUND SLOPE OF TILE FIELD AREA SHALL NOT EXCEED 15%.
- 8) NO BASEMENT FIXTURES ARE PERMITTED WITHOUT A SPECIAL DESIGN FOR SEWAGE DISPOSAL.
- 9) NO COMPONENT PART OF ANY SEWAGE DISPOSAL SYSTEM SHALL BE LOCATED OR MAINTAINED WITHIN 100' OF ANY SPRING, RESERVOIR, BROOK, MARSH OR ANY OTHER BODY OF WATER.
- 10) NO ROOF, CELLAR OR FOOTING DRAINS ARE TO BE DISCHARGED IN THE SEWAGE DISPOSAL SYSTEM.
- 11) FLOW EQUALIZERS SHALL BE USED FOR SYSTEMS WHOSE SIDE SLOPES ARE BETWEEN 10-15% AND ARE RECOMMENDED FOR ALL SYSTEMS.
- 12) SLOPE BETWEEN SEPTIC TANK OR PUMPING CHAMBER AND THE BUILDING SHALL BE POSITIVE AND UNINTERRUPTED, AS TO ALLOW SEPTIC GASSES TO DISCHARGE THROUGH THE STACK VENT.
- 13) THE SEWER PIPE RUNNING FROM THE BUILDING TO THE SEPTIC TANK MUST BE LAID ON SUITABLY COMPACTED EARTH OR VIRGIN SOIL WITH THE FIRST WATERTIGHT JOINT LOCATED AT LEAST 3' FROM THE BUILDING. THE PIPE SHALL BE SCH 40 PVC OR SCH 80 PVC.
- 14) THE DESIGN AND LOCATION OF SANITARY FACILITIES (WELL, SEPTIC TANK, AND LEACH FIELD) SHALL NOT BE CHANGED. ANY RELOCATION OF THE SEPTIC SYSTEMS OR WELLS SHOWN, TO AREAS OTHER THAN AS SHOWN ON THE APPROVED PLANS, MUST BE APPROVED BY THE DESIGN ENGINEER.
- 15) ALL WELLS AND SEPTIC SYSTEMS WITHIN 200 FEET THAT IMPACT SEPARATION DISTANCES FOR THE PROPOSED WELLS AND SEPTIC SYSTEMS ARE SHOWN ON THE PLANS.
- 16) THERE SHALL BE NO REGRADING, EXCEPT AS SHOWN ON THE APPROVED PLANS, IN THE AREA OF THE ABSORPTION FIELDS.
- 17) HEAVY EQUIPMENT SHALL BE KEPT OFF THE AREA OF THE ABSORPTION FIELDS EXCEPT DURING THE ACTUAL CONSTRUCTION. THERE SHALL BE NO UNNECESSARY MOVEMENT OF CONSTRUCTION EQUIPMENT IN THE ABSORPTION FIELD AREA BEFORE, DURING, OR AFTER CONSTRUCTION. EXTREME CARE MUST BE TAKEN DURING THE ACTUAL CONSTRUCTION SO AS TO AVOID ANY LIQUID COMPACTION THAT COULD RESULT IN A CHANGE OF THE ABSORPTION CAPACITY OF THE SOIL ON WHICH THE DESIGN LOAD WAS BASED.
- 18) THIS SYSTEM WAS NOT DESIGNED TO ACCOMMODATE GARBAGE GRINDERS, JACUZZI TYPE SPA TUBS OVER 100 GALLONS, OR WATER CONDITIONERS. AS SUCH, THESE ITEMS SHALL NOT BE INSTALLED UNLESS THE SYSTEM IS REDESIGNED TO ACCOUNT FOR THEM.
- 19) SEPTIC TANKS SHOULD BE INSPECTED PERIODICALLY AND PUMPED EVERY 2-3 YEARS.
- 20) DISTRIBUTION BOXES SHOULD BE INSPECTED PERIODICALLY TO ASSURE THAT THEY ARE LEVEL AND OPERATING PROPERLY.

Sewage Disposal System Requirements

| DESIGN FLOW RATE (GPD) | SEPTIC TANK SIZE (GALLONS) | DISTRIBUTION BOX MODEL NUMBER | TYPE OF SYSTEM | DESIGN STABILIZED PERCOLATION RATE (MIN.) | MIN. LENGTH OF ABSORPTION TRENCH (L.F.) | PROPOSED LENGTH OF ABSORPTION TRENCH (L.F.) | SEWAGE DISPOSAL SYSTEM DESIGN |
|------------------------|----------------------------|-------------------------------|----------------|---|---|---|-------------------------------|
| 100 | 1,000 | DB-12 | A.T. | 21-30 | 84 | 120 | 4 ROWS @ 30 L.F. |

NOTES:
1) A.T. = ABSORPTION TRENCH TYPE SYSTEM

- 2) THE ANTICIPATED SEWAGE GENERATION RATE IS 15 GALLONS PER DAY (GPD) BASED UPON A SINGLE EMPLOYEE AT 15 GPD PER EMPLOYEE. A DESIGN FLOW RATE OF 100 GPD HAS BEEN USED AS A CONSERVATIVE FLOW RATE.



"UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S EMBOSSED SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2, OF THE NEW YORK STATE EDUCATION LAW."
"ONLY COPIES FROM THE ORIGINAL TRACING OF THIS SURVEY MAP MARKED WITH THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED VALID, TRUE COPIES."
"CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYORS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS. SAID CERTIFICATIONS SHALL RUN ONLY TO THOSE NAMED INDIVIDUALS AND/OR INSTITUTIONS FOR WHOM THE SURVEY WAS PREPARED. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INDIVIDUALS, INSTITUTIONS, THEIR SUCCESSORS AND/OR ASSIGNS, OR SUBSEQUENT OWNERS."

| NO. | DATE | REVISION | BY |
|-----|---------|--------------------|-----|
| 1 | 2-11-22 | DETAILED SITE PLAN | ZAP |
| | | | |

LAWRENCE MARSHALL PE #087107

Sewage Disposal System Details for Site Plan for U-Haul Self-Storage

MNTM
Mercurio-Norton-Tarolli-Marshall
ENGINEERING-LAND SURVEYING
PO BOX 166, 45 MAIN STREET, PINE BUSH, NY 12566
P: (845) 744-3620 F: (845) 744-3805 MNTM@MNTM.CO

THIS MAP IS INCOMPLETE AND INVALID WITHOUT ALL SHEETS IN THE PLAN SET.
TAX MAP PARCEL: 20-2-2
TOWN OF NEWBURGH
COUNTY OF ORANGE
STATE OF NEW YORK
DRAFTED BY: LIM
DATE: 2021 SEPT 8
PROJECT: 4762
SHEET: 7 / 10

Deep Soils Testing Results

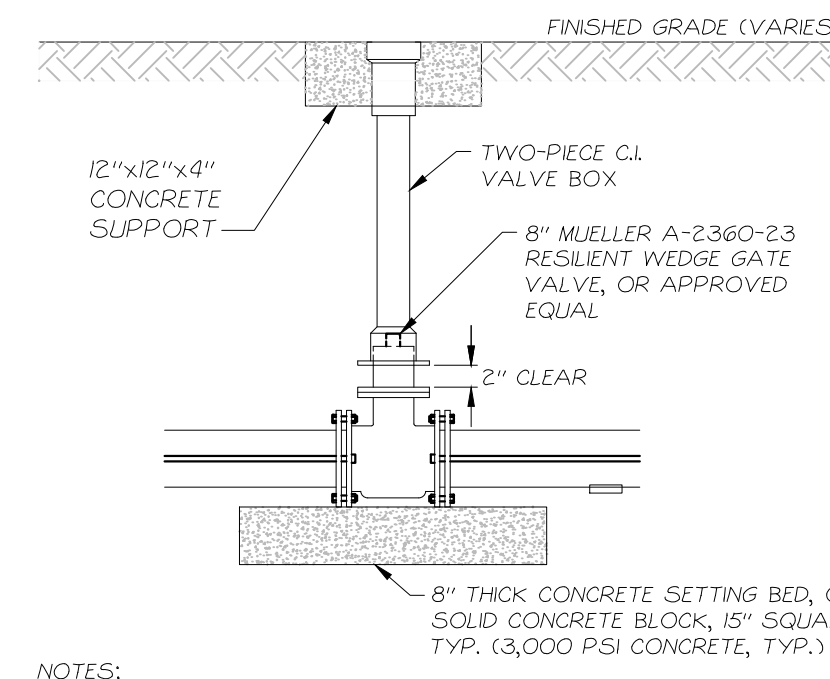
| TEST HOLE # | 5 | 6 | 7 | 8 | 8 | 9 | 10 | 11 | |
|--------------------|---|--|---|---|---|--|---|---|---|
| TESTING DATE: | 11-5-21 | 11-5-21 | 11-5-21 | 11-5-21 | 11-5-21 | 11-5-21 | 11-5-21 | 11-5-21 | |
| TESTER: | RTS | RTS | RTS | RTS | RTS | RTS | RTS | RTS | |
| DEEP TEST SOIL LOG | 0' TOP SOIL 3" 1' SILTY GRAVEL LOAM 2' 24" 3' 42" 4' GRAVELLY SAND LOAM 5' GRAVELLY LOAM WITH SAND 6' 84" 7' WET GRAVEL LOAM 8' | 0' TOP SOIL 6" 1' SILTY GRAVEL LOAM 2' 42" 3' 42" 4' GRAVELLY LOAM WITH SAND 5' 60" 6' GRAVELLY LOAM WITH SAND 7' 84" 8' WET GRAVEL LOAM | 0' TOP SOIL 4" 1' SILTY GRAVEL LOAM 2' 39" 3' 48" 4' GRAVELLY LOAM WITH SAND 5' 60" 6' GRAVELLY LOAM WITH SAND 7' 84" 8' MOTTLING BEGINNING @ 36" | 0' TOP SOIL 6" 1' SILTY GRAVEL LOAM 2' 30" 3' SILTY GRAVEL LOAM 4' 48" 5' 60" 6' GRAVELLY LOAM WITH SAND 7' 84" 8' MOTTLING BEGINNING @ 36" | 0' TOP SOIL 6" 1' SILTY GRAVEL LOAM 2' 30" 3' SILTY GRAVEL LOAM 4' 48" 5' 60" 6' GRAVELLY LOAM WITH SAND 7' 84" 8' MOTTLING BEGINNING @ 36" | 0' TOP SOIL 4" 1' SILTY LOAM WITH SOME SAND 2' 30" 3' PACKED CLAYEY SILTY LOAM WITH TRACE MOTTLING IN CLAY POCKETS 4' 48" 5' 60" 6' GRAVELLY LOAM WITH SAND 7' 84" 8' MOTTLING BEGINNING @ 36" | 0' TOP SOIL 6" 1' SILTY LOAM WITH SOME SAND 2' 30" 3' GRAVELLY LOAM WITH TRACE MOTTLING IN CLAY POCKETS 4' 48" 5' 60" 6' GRAVELLY LOAM WITH SAND 7' 84" 8' MOTTLING BEGINNING @ 36" | 0' TOP SOIL 6" 1' SILTY LOAM WITH SOME SAND 2' 30" 3' GRAVELLY LOAM WITH TRACE MOTTLING IN CLAY POCKETS 4' 48" 5' 60" 6' GRAVELLY LOAM WITH SAND 7' 84" 8' MOTTLING BEGINNING @ 36" | 0' TOP SOIL 8" 1' SILTY LOAM WITH SOME SAND 2' 24" 3' SILTY LOAM WITH SOME SAND 4' 48" 5' 60" 6' GRAVELLY LOAM WITH SAND 7' 84" 8' MOTTLING BEGINNING @ 36" |
| NOTES: | *NO WATER OR ROCK UNLESS SO NOTED | | | | | | | | |

| TEST HOLE # | 12 | 13 |
|--------------------|---|---|
| TESTING DATE: | 2-10-22 | 2-10-22 |
| TESTER: | RTS | RTS |
| DEEP TEST SOIL LOG | 0' TOP SOIL 4" 1' SILT LOAM 2' 24" 3' HEAVY SILT LOAM W. COBBLES 4' 72" 5' 72" 6' 72" 7' 72" 8' | 0' TOP SOIL 6" 1' SILT LOAM 2' 24" 3' GRAVELLY SILT LOAM 4' 72" 5' 72" 6' 72" 7' 72" 8' |
| NOTES: | *TR. MOTTLING 54" - 72" | |

Percolation Testing Results

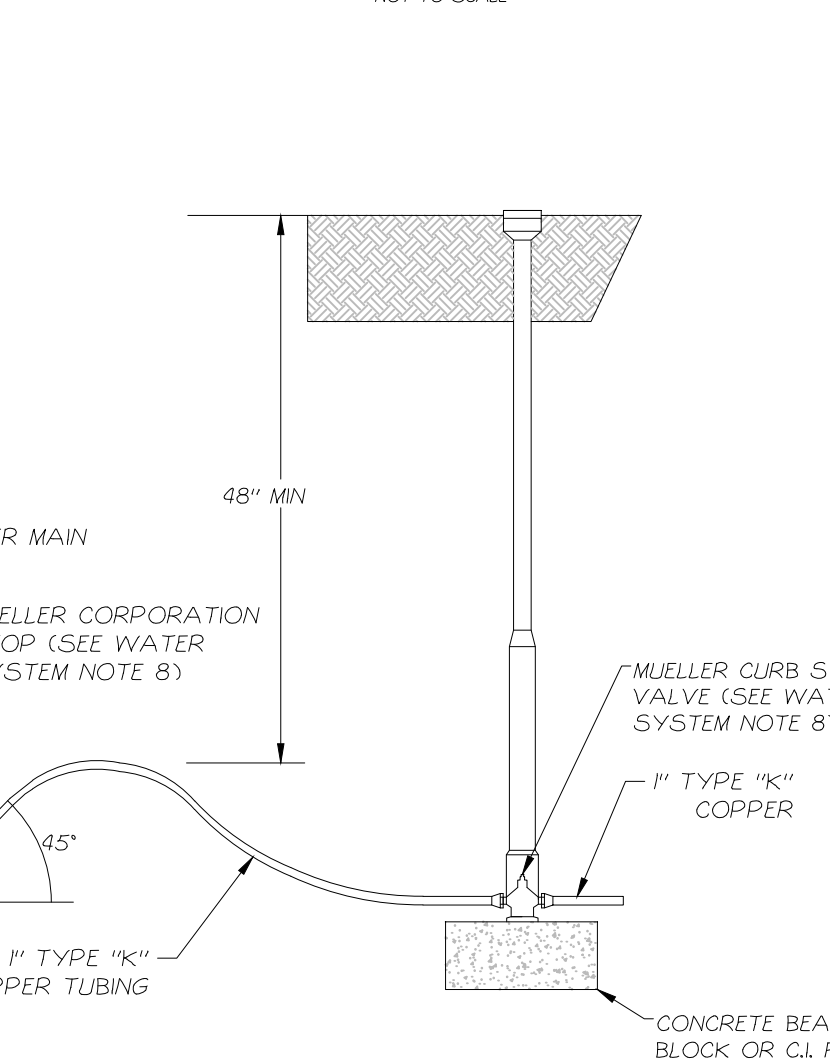
| TEST HOLE # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--|---------------------|-----------|-----------|-----------|----------|-----------|-----------|-----------|
| TESTING DATE: | 9-3-21 | 9-3-21 | 9-3-21 | 9-3-21 | 11-5-21 | 11-5-21 | 11-5-21 | 11-5-21 |
| DEPTH / TESTER: | 14" - RTS | 14" - RTS | 33" - RTS | 33" - RTS | 60" - RS | 60" - RTS | 78" - RTS | 78" - RTS |
| PERCOLATION TEST RESULTS *TESTING COMPLETED WITH A STOPWATCH *ELAPSED TIMES ARE IN MINUTES | RUN 1 ELAPSED TIME: | 2:12 | 8:00 | 0:27 | 0:26 | 0:51 | 4:30 | 7:26 |
| | RUN 2 ELAPSED TIME: | 2:42 | 10:50 | 0:27 | 0:28 | 0:53 | 6:00 | 8:25 |
| | RUN 3 ELAPSED TIME: | 3:00 | 12:01 | 0:27 | 0:28 | 0:56 | 6:32 | 9:02 |
| | RUN 4 ELAPSED TIME: | | | | | | | |
| | RUN 5 ELAPSED TIME: | | | | | | | |
| | RUN 6 ELAPSED TIME: | | | | | | | |
| | RUN 7 ELAPSED TIME: | | | | | | | |
| | STABILIZED RATE: | 3:00 | 12:01 | 11:00 | 11:00 | 11:00 | 11:00 | 6:32 |

| TEST HOLE # | 12 | 13 | 12 | 13 | |
|--|---------------------|----------|----------|----------|-------|
| TESTING DATE: | 11-16-21 | 11-16-21 | 11-16-21 | 11-16-21 | |
| DEPTH / TESTER: | 24" - WJ | 24" - WJ | 24" - WJ | 24" - WJ | |
| PERCOLATION TEST RESULTS *TESTING COMPLETED WITH A STOPWATCH *ELAPSED TIMES ARE IN MINUTES | RUN 1 ELAPSED TIME: | 4:06 | 15:33 | 4:06 | 15:33 |
| | RUN 2 ELAPSED TIME: | 4:50 | 24:43 | 4:50 | 24:43 |
| | RUN 3 ELAPSED TIME: | 5:09 | 26:00 | 5:09 | 26:00 |
| | RUN 4 ELAPSED TIME: | | | | |
| | RUN 5 ELAPSED TIME: | | | | |
| | RUN 6 ELAPSED TIME: | | | | |
| | RUN 7 ELAPSED TIME: | | | | |
| | STABILIZED RATE: | 5:09 | 26:58 | 5:09 | 26:58 |



NOTES:
 1.) ALL VALVES TO INCLUDE MEGA-LUG RESTRAINER GLANDS.
 2.) WATER MAIN VALVES FOR FOUR-INCH THROUGH FORTY-EIGHT-INCH SHALL BE RESILIENT WEDGE GATE VALVES CONFORMING TO ANSIIAWWA C509, LATEST REVISION, SUCH AS MUELLER MODEL A-2360-23 OR APPROVED EQUAL. ALL GATE VALVES SHALL OPEN LEFT (COUNTERCLOCKWISE).

Typical Water Valve Detail

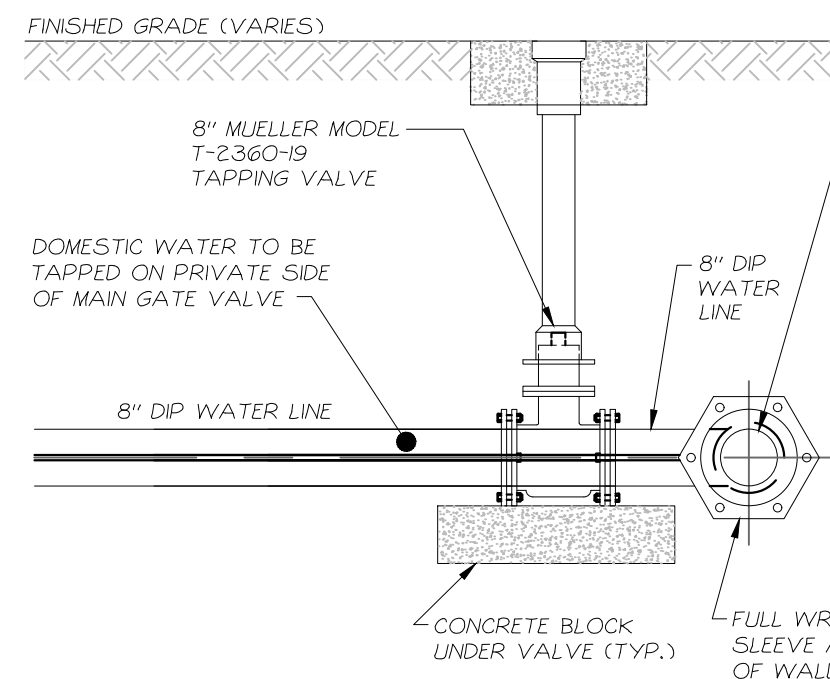


NOTES:
 1.) ALL CORPORATION STOP, CURB STOP, CURB BOX, AND SERVICE LINES SHALL MEET MUNICIPAL WATER DEPARTMENT REGULATIONS. SEE WATER SYSTEM NOTES.
 2.) THIS DETAIL APPLIES ONLY TO THE WATER SERVICE FOR OFFICE, MODEL, AND STORAGE BUILDINGS.

Water Service Detail

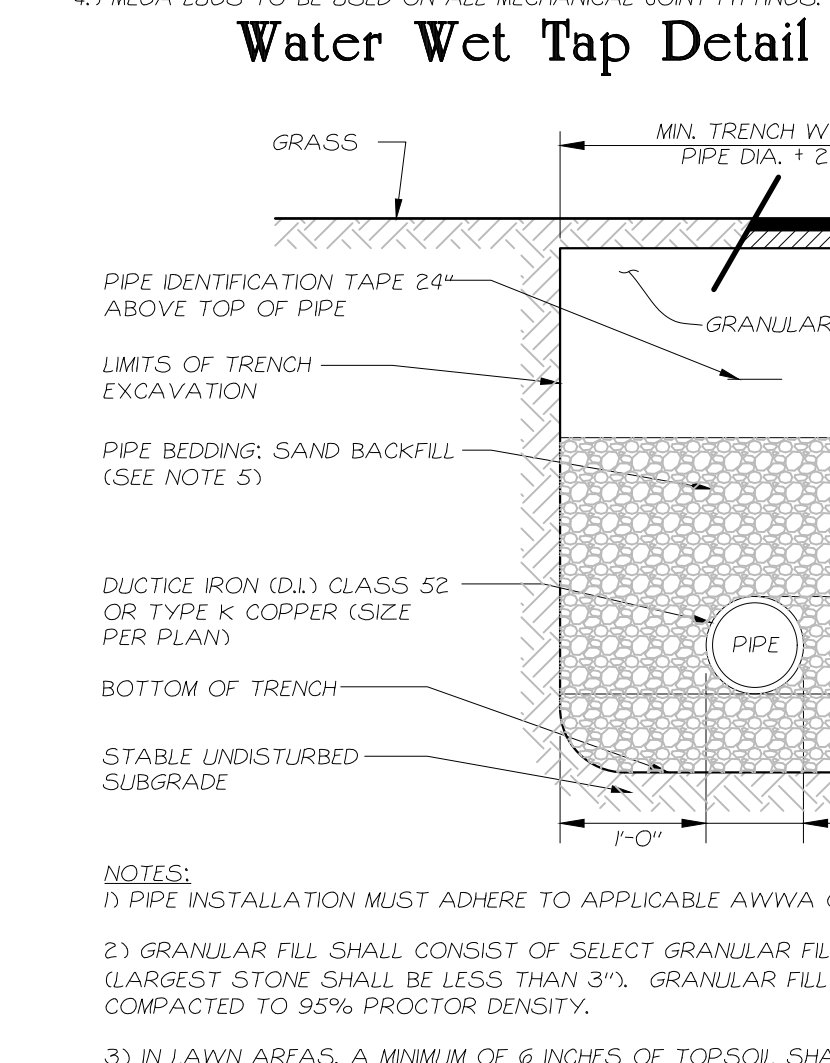
Water System Notes:

- CONSTRUCTION OF POTABLE WATER UTILITIES AND CONNECTION TO THE TOWN OF NEWBURGH WATER SYSTEM REQUIRES A PERMIT FROM THE TOWN OF NEWBURGH WATER DEPARTMENT. ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE NEW YORK STATE DEPARTMENT OF HEALTH, ORANGE COUNTY DEPARTMENT OF HEALTH, AND TOWN OF NEWBURGH.
- ALL WATER SERVICE LINES FOUR (4) INCHES AND LARGER IN DIAMETER SHALL BE CEMENT LINE CLASS 52 DUCTILE IRON PIPE CONFORMING TO ANSIIAWWA C151/A21.51 FOR DUCTILE IRON PIPE, LATEST REVISION. JOINTS SHALL BE EITHER PUSH-ON OR MECHANICAL JOINT AS REQUIRED.
- THRUST RESTRAINT OF THE PIPE SHALL BE THROUGH THE USE OF JOINT RESTRAINT. THRUST BLOCKS ARE NOT ACCEPTABLE, EXCEPT AS SHOWN FOR THE HYDRANT INSTALLATIONS. JOINT RESTRAINT SHALL BE THROUGH THE USE OF MECHANICAL JOINT PIPE WITH RETAINER GLANDS. ALL FITTINGS AND VALVES SHALL ALSO BE INSTALLED WITH RETAINER GLANDS FOR JOINT RESTRAINT. JOINT RESTRAINTS SHALL BE EBAA IRON MEGALUG SERIES 1700 FOR FLANGED FITTINGS AND EBAA IRON MEGALUG SERIES 1700 RESTRAINT HARNESSES FOR PIPES WITH PUSH ON JOINTS. MAKE AND MODEL MAY BE SUBSTITUTED WITH AN APPROVED EQUAL. THE USE OF A MANUFACTURED RESTRAINT JOINT PIPE IS ACCEPTABLE WITH PRIOR APPROVAL OF THE MUNICIPAL WATER DEPARTMENT.
- ALL FITTINGS SHALL BE CAST IRON OR DUCTILE IRON, MECHANICAL JOINT, CLASS 250 AND CONFORM TO ANSIIAWWA C101/A210 FOR DUCTILE AND GRAY IRON FITTINGS OR ANSIIAWWA C131/A21.53 FOR DUCTILE IRON COMPACT FITTINGS, LATEST REVISION.
- ALL VALVES 4 TO 12 INCHES SHALL BE RESILIENT WEDGE GATE VALVES CONFORMING TO ANSIIAWWA C509, LATEST REVISION, SUCH AS MUELLER MODEL A-2360-23 OR APPROVED EQUAL. ALL GATE VALVES SHALL OPEN LEFT (COUNTERCLOCKWISE).
- TAPPING SLEEVE SHALL BE MECHANICAL JOINT SUCH AS MUELLER H-815 OR EQUAL. TAPPING VALVES 4 TO 12 INCHES SHALL BE RESILIENT WEDGE GATE VALVES CONFORMING TO ANSIIAWWA C509, LATEST REVISION, SUCH AS MUELLER MODEL T-2360-19 OR APPROVED EQUAL. ALL TAPPING SLEEVES AND VALVES SHALL BE TESTED TO 150 PSI MINIMUM. TESTING OF THE TAPPING SLEEVE AND VALVE MUST BE WITNESSED AND ACCEPTED BY THE MUNICIPAL WATER DEPARTMENT PRIOR TO CUTTING INTO THE PIPE.
- HYDRANTS SHALL BE DRY-BARREL HYDRANTS, TYPE MUELLER SUPER CENTURION, IN ACCORDANCE WITH ANSIIAWWA C502. HYDRANTS SHALL HAVE A MAIN VALVE SIZE OPENING OF FIVE INCHES NOMINAL, ONE (1) FIVE-INCH STORZ DISHARGE, TWO (2) TWO-AND-A-HALF-INCH INST HOSE NOZZLES, A ONE-AND-ONE-HALF-INCH PENTAGON OPERATING NUT AND A SIX-INCH MECHANICAL JOINT INLET SHOW CONNECTION WITH ACCESSORIES. THE HYDRANT DIRECTION OF OPENING SHALL BE LEFT (COUNTERCLOCKWISE).
- ALL WATER SERVICE LINES TWO (2) INCHES IN DIAMETER AND SMALLER SHALL BE TYPE K COPPER TUBING. CORPORATION STOPS SHALL BE MUELLER H-5020N FOR 3/4 AND 1 INCH, MUELLER H-5000N OR B-25000N FOR 1 1/2 AND 2 INCH SIZES. CURB VALVES SHALL BE MUELLER H-502-2N FOR 3/4 AND 1 INCH AND MUELLER B-25200N FOR 1 1/2 AND 2 INCH SIZES. CURB BOXES SHALL BE MUELLER H-031N FOR 3/4 AND 1 INCH AND MUELLER H-0303N FOR 1 1/2 AND 2 INCH SIZES.
- ALL PIPE INSTALLATION SHALL BE SUBJECT TO INSPECTION BY THE MUNICIPAL WATER DEPARTMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL INSPECTIONS AS REQUIRED WITH THE LOCAL MUNICIPALITIES AND THE MUNICIPAL WATER DEPARTMENT. ALL DUCTILE IRON PIPES SHALL BE INSTALLED IN ACCORDANCE WITH AWWA STANDARD C600-17 OR LATEST REVISION.
- THE WATER MAIN SHALL BE TESTED, DISINFECTED AND FLUSHED IN ACCORDANCE WITH TOWN OF NEWBURGH, ORANGE COUNTY DEPARTMENT OF HEALTH, NEW YORK STATE DEPARTMENT OF HEALTH REQUIREMENTS AND AWWA STANDARD C634M OR LATEST REVISION REQUIREMENTS. ALL TESTING, DISINFECTION AND FLUSHING SHALL BE COORDINATED WITH THE TOWN OF NEWBURGH WATER DEPARTMENT. PRIOR TO PUTTING THE WATER MAIN IN SERVICE, SATISFACTORY SANITARY RESULTS FROM A CERTIFIED LAB MUST BE SUBMITTED TO THE TOWN OF NEWBURGH. THE TEST SAMPLES MUST BE COLLECTED BY A REPRESENTATIVE OF THE TESTING LABORATORY.
- A BACKFLOW PREVENTION DEVICE (BPD) IS REQUIRED TO BE DESIGNED AND INSTALLED ON THE DOMESTIC WATER SUPPLY LINE AS PART OF THE BUILDING PLUMBING PLANS. A DOUBLE CHECK VALVE SHALL BE DESIGNED AND INSTALLED ON THE FIRE SUPPRESSION LINE AS PART OF THE BUILDING PLUMBING PLANS. THE BACKFLOW PREVENTION DEVICE AND DOUBLE CHECK VALVE SHALL BE REVIEWED AND APPROVED BY THE ORANGE COUNTY DEPARTMENT OF HEALTH PRIOR TO INSTALLATION.
- THE FINAL LAYOUT OF THE PROPOSED WATER CONNECTION, INCLUDING ALL MATERIALS, SIZE AND LOCATION OF THE SERVICE AND ALL APPURTENANCES, IS SUBJECT TO THE REVIEW AND APPROVAL OF THE TOWN OF NEWBURGH WATER DEPARTMENT. NO PERMITS SHALL BE ISSUED FOR A WATER CONNECTION UNTIL A FINAL LAYOUT IS APPROVED BY THE RESPECTIVE DEPARTMENT.



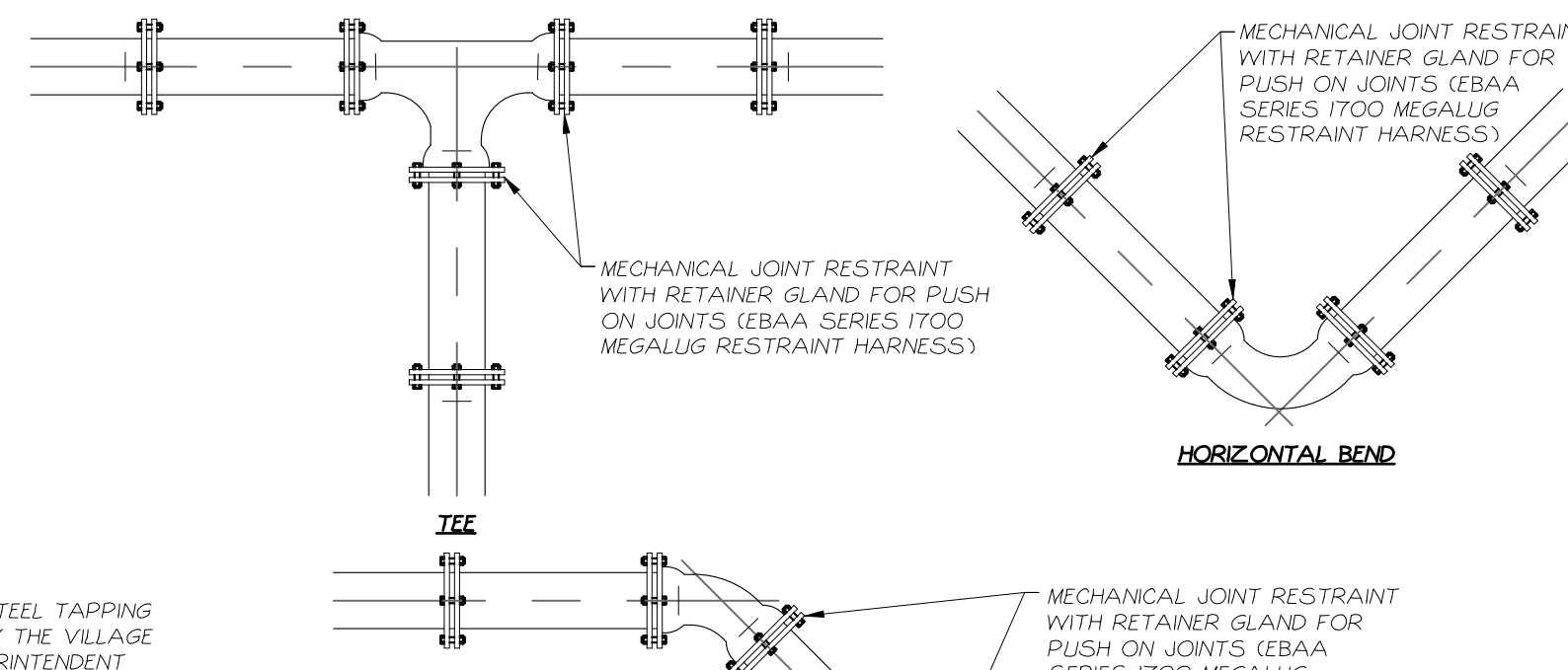
NOTES:
 1.) WET TAP TO BE PERFORMED BY CONTRACTOR WITH VILLAGE OF WALDEN WATER SUPERINTENDENT AND VILLAGE ENGINEER ON SITE.
 2.) CONTRACTOR TO CONTACT VILLAGE OF WALDEN WATER DEPARTMENT FOR ALL INSTALLATION REQUIREMENTS.
 3.) TAPPING SLEEVE SHALL BE SELECTED TO FIT EXISTING PIPE MATERIAL (CAST IRON, DUCTILE IRON, A.C.) AND OUTSIDE DIAMETERS.
 4.) MEGA LUGS TO BE USED ON ALL MECHANICAL JOINT FITTINGS.

Water Wet Tap Detail



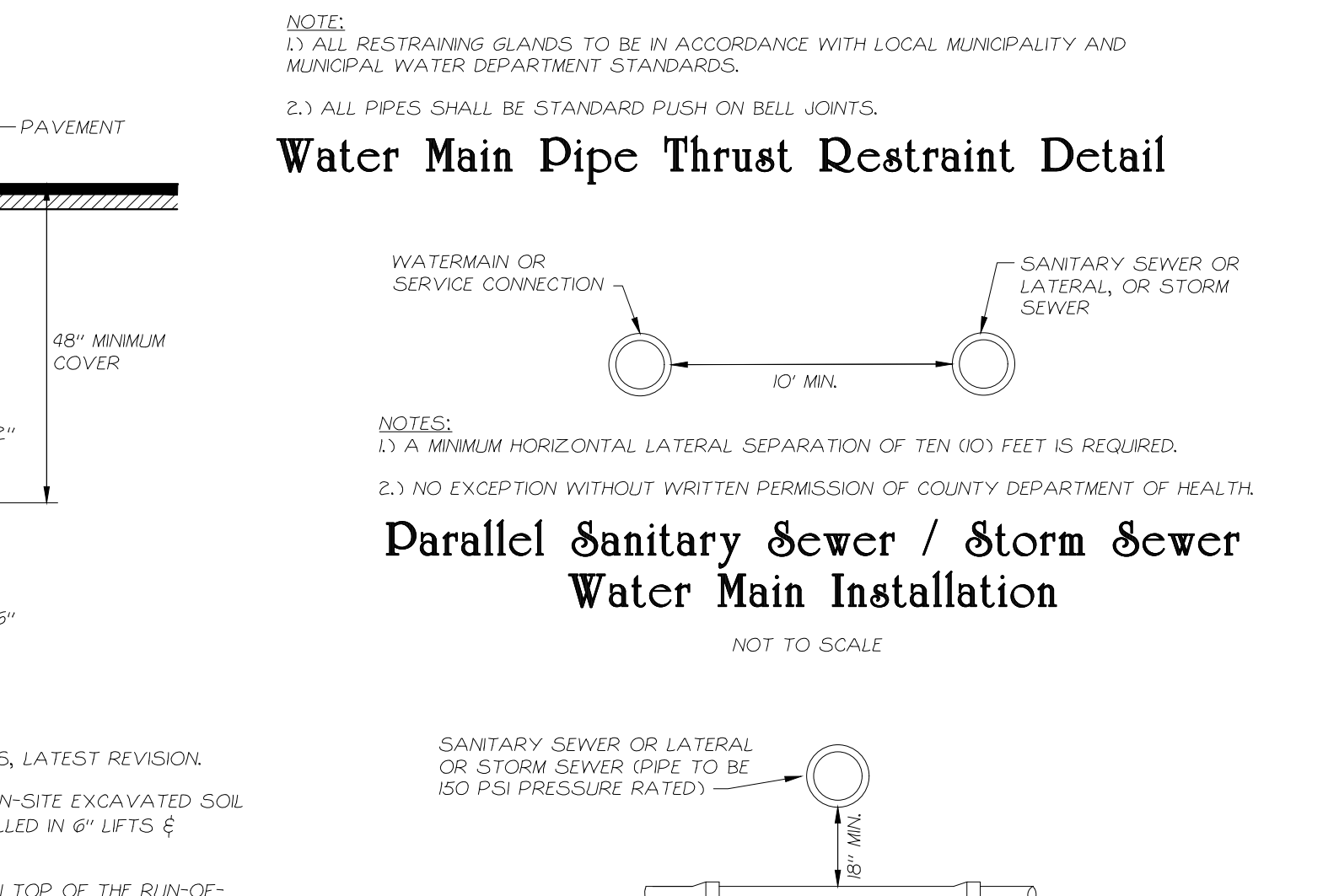
NOTES:
 1.) PIPE INSTALLATION MUST ADHERE TO APPLICABLE AWWA C600 STANDARDS, LATEST REVISION.
 2.) GRANULAR FILL SHALL CONSIST OF SELECT GRANULAR FILL OR SUITABLE ON-SITE EXCAVATED SOIL. LARGEST STONE SHALL BE LESS THAN 3". GRANULAR FILL SHALL BE INSTALLED IN 6" LIFTS & COMPACTED TO 95% PROCTOR DENSITY.
 3.) IN LAWN AREAS, A MINIMUM OF 6 INCHES OF TOPSOIL SHALL BE PLACED ON TOP OF THE RUN-OF-BANK GRAVEL, AND SHALL BE SEEDED AND MULCHED WITH SEED IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS.
 4.) IN PAVED AREAS, THE EXISTING PAVEMENT SHALL BE SAW CUT PRIOR TO REMOVAL. REPLACEMENT OF THE PAVEMENT SHALL BE COMPLETED WITH A MINIMUM OF 6" ITEM 4 LEVELING COURSE, 3" ASPHALT BINDER COURSE, AND 2" ASPHALT TOP COURSE.
 5.) PIPE BEDDING SHALL CONSIST OF SAND MEETING NYS DOT T03-06 CUSHION SAND SPECIFICATIONS AND COMPACTED TO 95% PROCTOR DENSITY IN 6" MAXIMUM LIFTS.

Typical Water Pipe Bedding Detail



NOTE:
 1.) ALL RESTRAINING GLANDS TO BE IN ACCORDANCE WITH LOCAL MUNICIPALITY AND MUNICIPAL WATER DEPARTMENT STANDARDS.
 2.) ALL PIPES SHALL BE STANDARD PUSH ON BELL JOINTS.

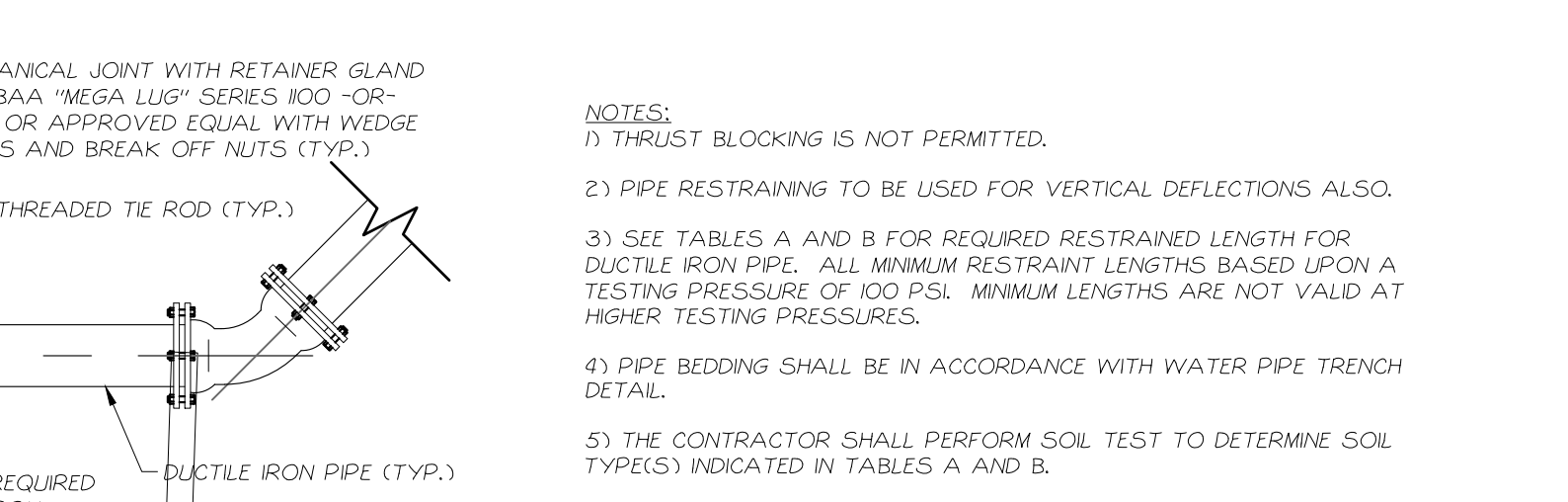
Water Main Pipe Thrust Restraint Detail



NOTES:
 1.) A MINIMUM HORIZONTAL LATERAL SEPARATION OF TEN (10) FEET IS REQUIRED.
 2.) NO EXCEPTION WITHOUT WRITTEN PERMISSION OF COUNTY DEPARTMENT OF HEALTH.
 3.) IN LAWN AREAS, A MINIMUM OF 6 INCHES OF TOPSOIL SHALL BE PLACED ON TOP OF THE RUN-OF-BANK GRAVEL, AND SHALL BE SEEDED AND MULCHED WITH SEED IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS.
 4.) IN PAVED AREAS, THE EXISTING PAVEMENT SHALL BE SAW CUT PRIOR TO REMOVAL. REPLACEMENT OF THE PAVEMENT SHALL BE COMPLETED WITH A MINIMUM OF 6" ITEM 4 LEVELING COURSE, 3" ASPHALT BINDER COURSE, AND 2" ASPHALT TOP COURSE.
 5.) PIPE BEDDING SHALL CONSIST OF SAND MEETING NYS DOT T03-06 CUSHION SAND SPECIFICATIONS AND COMPACTED TO 95% PROCTOR DENSITY IN 6" MAXIMUM LIFTS.

Parallel Sanitary Sewer / Storm Sewer Water Main Installation

Storm / Sanitary Sewer - Water Main Crossing



NOTES:
 1.) THRUST BLOCKING IS NOT PERMITTED.
 2.) PIPE RESTRAINING TO BE USED FOR VERTICAL DEFLECTIONS ALSO.
 3.) SEE TABLES A AND B FOR REQUIRED RESTRAINED LENGTH FOR DUCTILE IRON PIPE. ALL MINIMUM RESTRAINED LENGTHS BASED UPON A TESTING PRESSURE OF 100 PSI. MINIMUM LENGTHS ARE NOT VALID AT HIGHER TESTING PRESSURES.
 4.) PIPE BEDDING SHALL BE IN ACCORDANCE WITH WATER PIPE TRENCH DETAIL.
 5.) THE CONTRACTOR SHALL PERFORM SOIL TEST TO DETERMINE SOIL TYPE(S) INDICATED IN TABLES A AND B.

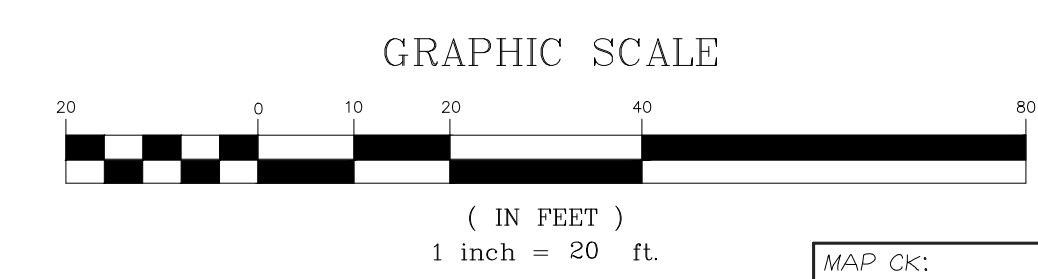
TABLE A - REQUIRED RESTRAINED LENGTH FOR 8" DUCTILE IRON PIPE (ALL VALUES IN FEET UNLESS OTHERWISE NOTED)

| PIPE SIZE | 8" | | | | | | | | | | | |
|------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------|-----------|----------|
| | 45 DEGREE | | | 22.5 DEGREE | | | 12.5 DEGREE | | | TEE (6X4) | TEE (6X6) | DEAD END |
| BEND ANGLE | H BEND | V BEND (LP) | V BEND (DN) | H BEND | V BEND (LP) | V BEND (DN) | H BEND | V BEND (LP) | V BEND (DN) | | | |
| CL | 5 | 5 | 11 | 3 | 6 | 2 | 1 | 3 | 1 | 3 | 19 | |
| ML | 6 | 6 | 12 | 3 | 6 | 2 | 2 | 3 | 1 | 8 | 27 | |
| GC, SC | 5 | 5 | 10 | 2 | 5 | 1 | 1 | 3 | 1 | 2 | 19 | |
| GM, SM | 5 | 5 | 10 | 3 | 2 | 5 | 2 | 1 | 3 | 1 | 5 | 24 |
| SIV, GW | 4 | 4 | 8 | 2 | 2 | 4 | 1 | 1 | 2 | 1 | 1 | 19 |
| SP | 5 | 5 | 10 | 3 | 2 | 5 | 2 | 1 | 3 | 1 | 4 | 23 |

TABLE B - REQUIRED RESTRAINED LENGTH FOR 6" DUCTILE IRON PIPE (ALL VALUES IN FEET UNLESS OTHERWISE NOTED)

| PIPE SIZE | 6" | | | | | | | | | | |
|------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------|----------|
| | 45 DEGREE | | | 22.5 DEGREE | | | 12.5 DEGREE | | | TEE (6X4) | DEAD END |
| BEND ANGLE | H BEND | V BEND (LP) | V BEND (DN) | H BEND | V BEND (LP) | V BEND (DN) | H BEND | V BEND (LP) | V BEND (DN) | | |
| CL | 4 | 4 | 8 | 2 | 2 | 4 | 1 | 1 | 2 | 1 | 14 |
| ML | 4 | 4 | 9 | 2 | 2 | 5 | 1 | 1 | 3 | 1 | 21 |
| GC, SC | 3 | 3 | 8 | 2 | 2 | 4 | 1 | 1 | 2 | 1 | 15 |
| GM, SM | 4 | 4 | 8 | 2 | 2 | 4 | 1 | 1 | 2 | 1 | 18 |
| SIV, GW | 3 | 3 | 6 | 2 | 2 | 3 | 1 | 1 | 2 | 1 | 15 |
| SP | 4 | 4 | 8 | 2 | 2 | 4 | 1 | 1 | 2 | 1 | 18 |

Water Main Pipe Restraint Tables



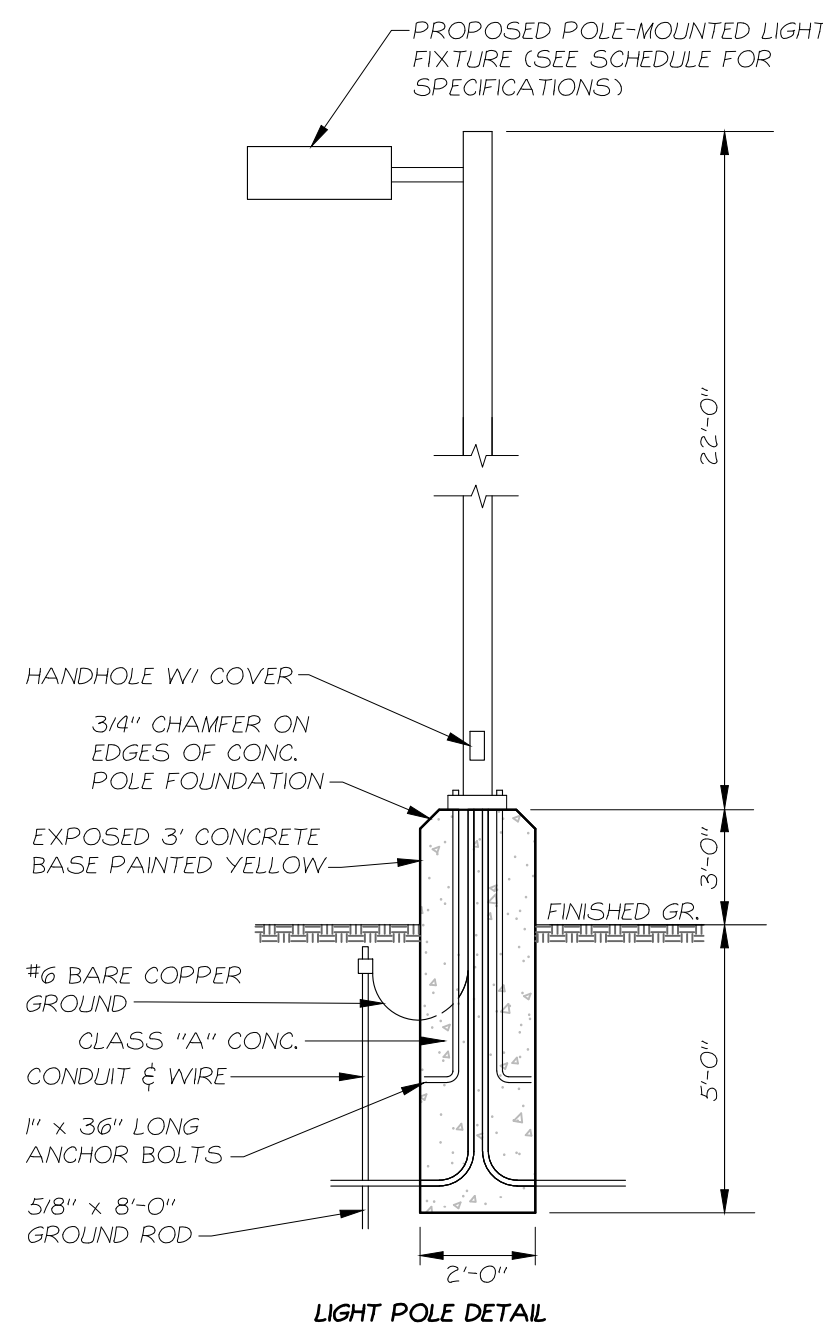
"UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S EMBOSSED SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2, OF THE NEW YORK STATE EDUCATION LAW."
 "ONLY COPIES FROM THE ORIGINAL TRACING OF THIS SURVEY MAP MARKED WITH THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED VALID, TRUE COPIES."
 "CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYORS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS. SAID CERTIFICATIONS SHALL RUN ONLY TO THOSE NAMED INDIVIDUALS AND/OR INSTITUTIONS FOR WHOM THE SURVEY WAS PREPARED. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INDIVIDUALS, INSTITUTIONS, THEIR SUCCESSORS AND/OR ASSIGNS, OR SUBSEQUENT OWNERS."

| NO. | DATE | DETAILED SITE PLAN | ZAP |
|-----|---------|--------------------|------------------------------|
| 1 | 2-11-22 | | |
| | | REVISION | BY |
| | | | LAWRENCE MARSHALL PE #087107 |

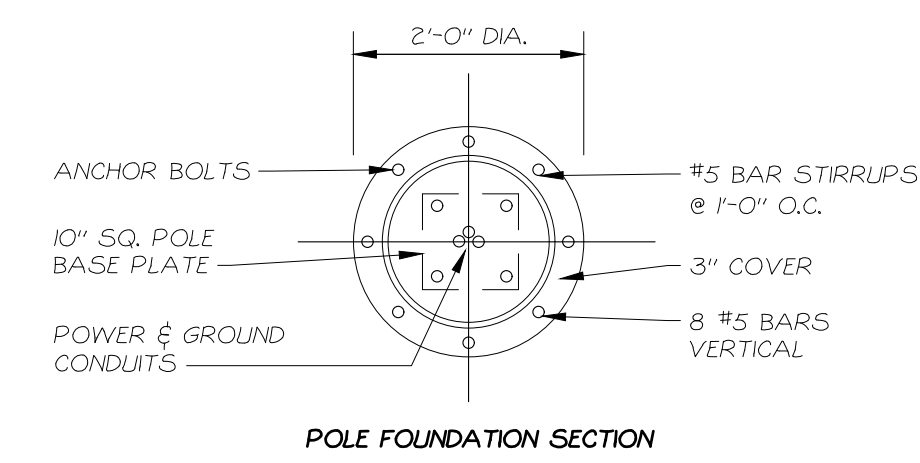
Soils Testing & Water Service Details for Site Plan for U-Haul Self-Storage

MNTM
 Mercurio-Norton-Tarolli-Marshall
 P.O. BOX 166, 45 MAIN STREET, PINE BUSH, NY 12566
 P: (845)744.3620 F: (845)744.3805 MNTM@MNTM.CO

THIS MAP IS INCOMPLETE AND INVALID WITHOUT ALL SHEETS IN THE PLAN SET.
 TAX MAP PARCEL: 00-2-2
 TOWN OF NEWBURGH
 COUNTY OF ORANGE
 STATE OF NEW YORK
 DRAFTED BY: LJM
 DATE: 2021 SEPT 8
 PROJECT: 4762
 SHEET: 8 / 10

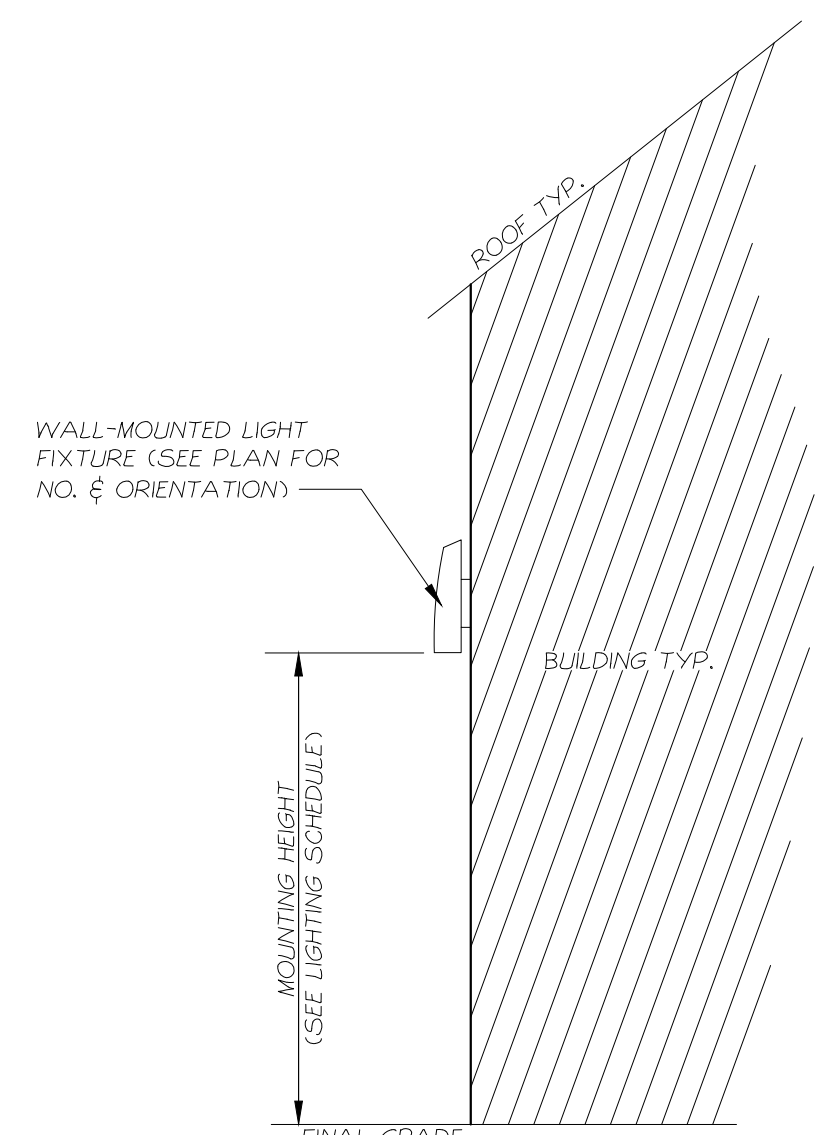


Light Pole Detail



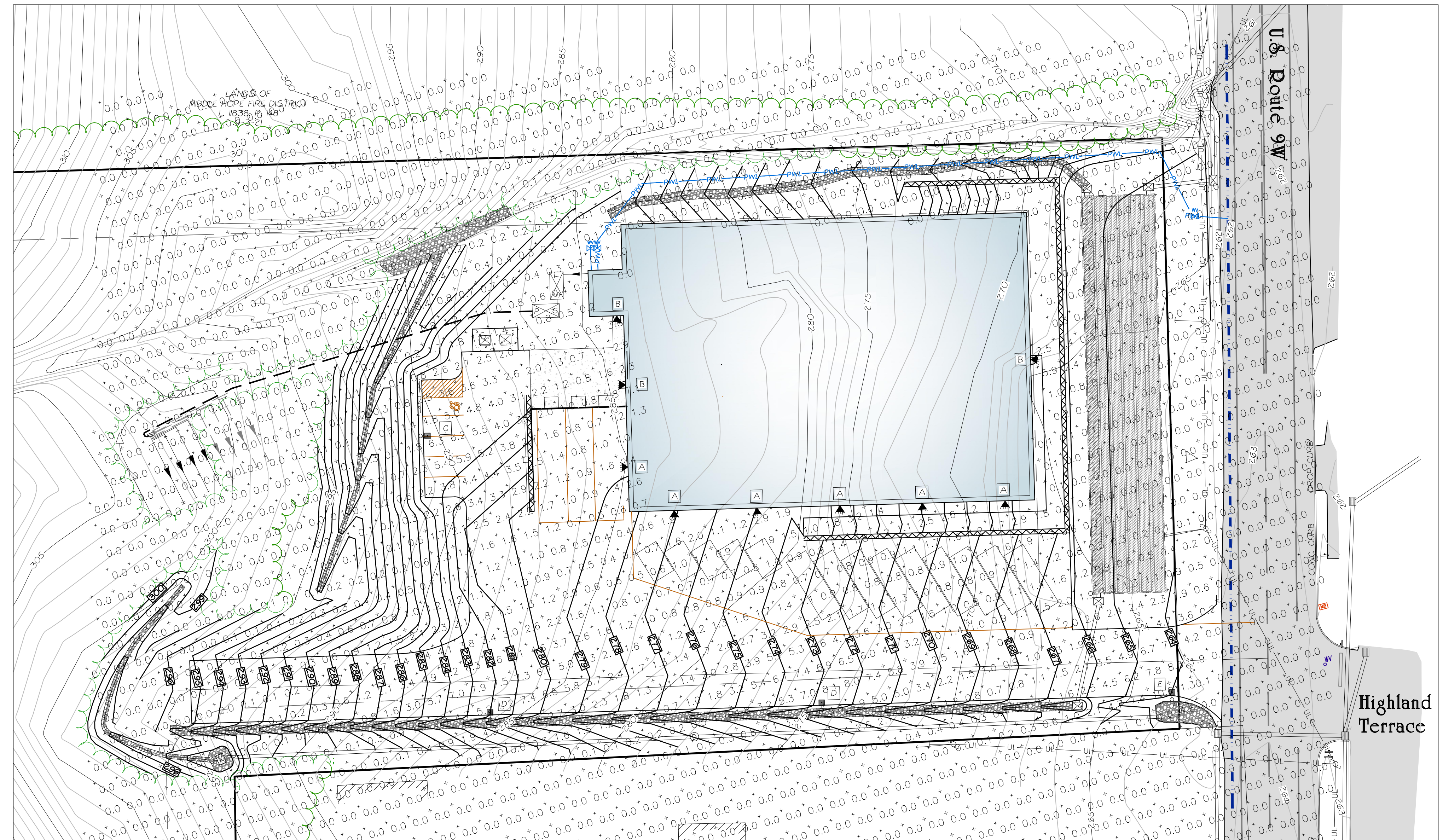
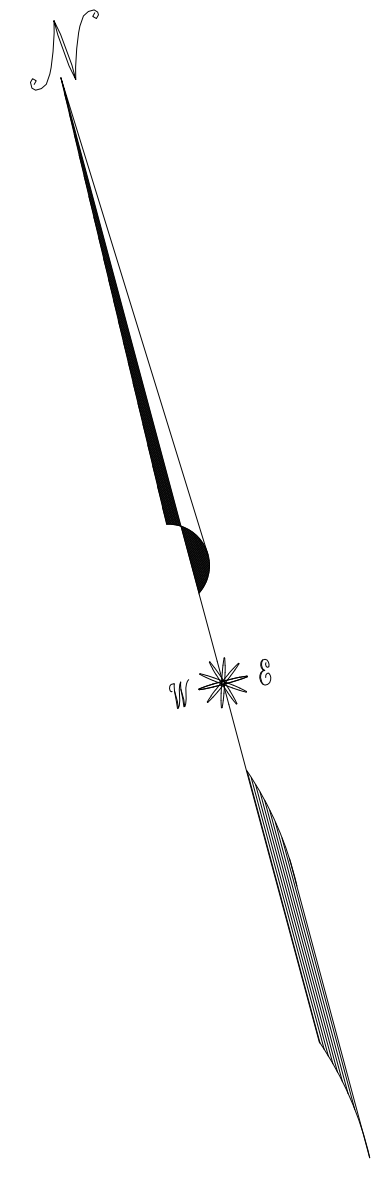
Pole Foundation Section

Light Pole Detail



Wall Mounted Fixture Detail

- 1) WALL MOUNTED LIGHT FIXTURES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS SPECIFICATIONS
- 2) ALL LIGHTING FIXTURES SHALL BE DOWNWARD FACING.



Lighting Detail

SCALE: 1" = 30'

Lighting Legend

- PROPOSED POLE MOUNTED FIXTURE (SEE LIGHTING SCHEDULE)
- ◀ PROPOSED WALL MOUNTED FIXTURE (SEE LIGHTING SCHEDULE)
- A LIGHT KEY

Lighting Schedule

| LIGHT | LABEL | MANUFACTURER | QUANTITY | MOUNTING LOCATION | MOUNTING HEIGHT | COLOR TEMP | LUMENS | BUG RATING |
|-------|--|-------------------|----------|-------------------|-----------------|------------|--------|------------|
| A | WST LED P1 40K VF MVOLT DDBXD | LITHONIA LIGHTING | 6 | WALL | 15-FT | 4000K | 1,639 | BO-UO-GO |
| B | WST LED P1 40K VF MVOLT DDBXD EL | LITHONIA LIGHTING | 3 | WALL | 10-FT | 4000K | 1,639 | BO-UO-GO |
| C | DSX2 LED P4 40K T4M MVOLT HS DDBXD SSS | LITHONIA LIGHTING | 1 | POLE | 25-FT | 4000K | 25,364 | B3-UO-G5 |
| D | DSX2 LED P4 40K BLC MVOLT DDBXD SSS | LITHONIA LIGHTING | 2 | POLE | 25-FT | 4000K | 27,374 | B2-UO-G4 |
| E | DSX2 LED P4 40K RCCO MVOLT DDBXD SSS | LITHONIA LIGHTING | 1 | POLE | 25-FT | 4000K | 20,369 | B2-UO-G4 |

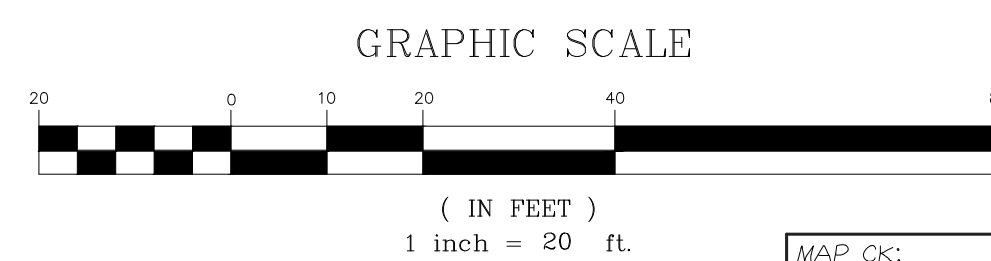
Lighting Notes:

- 1) ALL LIGHT INTENSITIES PROVIDED BY: RC LURE, 1122 NORTH 7TH STREET, PHOENIX, AZ 85006, (602) 871-9225, RCLURE.COM
- 2.) ALL LIGHTING FIXTURES SHALL BE DOWNWARD FACING.

CALCULATION SUMMARY

| LABEL | AVG | MAX | MIN |
|-------------------|-----|-----|-----|
| SITE FT-C @ GRADE | 0.6 | 1.3 | 0.0 |

*MAX LEVEL BELOW WALL-PACK FIXTURE ON FREE-STANDING SELF-STORAGE BUILDINGS.



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| NO. | DATE | REVISION | BY |
|-----|---------|--------------------|-----|
| 1 | 2-11-22 | DETAILED SITE PLAN | ZAP |
| | | | |

Lighting Detail Plan
for
U-Haul Self-Storage

MNTM
Mercurio-Norton-Tarolli-Marshall
ENGINEERING - LAND SURVEYING
PO BOX 166, 45 MAIN STREET, PINE BUSH, NY 12566
P: (845)744.3620 F: (845)744.3805 MNTM@MNTM.CO

THIS MAP IS INCOMPLETE AND INVALID WITHOUT ALL SHEETS IN THE PLAN SET.
 TAX MAP PARCEL: 20-2-2
 TOWN OF NEWBURGH
 COUNTY OF ORANGE
 STATE OF NEW YORK
 DRAFTED BY: ZAP
 DATE: 2022 FEB 8
 PROJECT: 4762
 SHEET: 10 / 10