NOTE:

This SWPPP/SWMR was prepared in accordance with Unified Sustainable Development Ordinance and with the New York State Stormwater Management Design Manual. This SWPPP/SWMR must be kept on the job site and available for use of contractors & sub-contractors. A Pre-Construction meeting must be held prior to commencing any excavation with the Albany Department of Water. Maintenance Plan is attached and includes both temporary and permanent facilities maintenance. This SWPPP/SWMR, together with all required plans, completed inspection forms and a log of activities including any mitigation of items noted on inspection forms must be kept on the job site and available for inspection by regulatory authorities. SWPPP inspections must be completed by a qualified professional and forwarded electronically to the MS4 Coordinator at the City of Albany Department of Water & Water Supply within 24 hours after inspection is completed.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)/ STORM WATER MANAGEMENT REPORT (SWMR)

Lofts at Pine Hills
237 Western Avenue

CITY OF ALBANY
COUNTY OF ALBANY
STATE OF NEW YORK

Applicant: Lofts at Pine Hills LLC

PREPARED BY:

HERSHBERG & HERSHBERG

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February 26, 2019
Revised April 18, 2019
May 23, 2019
September 5, 2019
August 27, 2021
October 28, 2021

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INTRODUCTION

Hershberg & Hershberg, Consulting Engineers and Land Surveyors, were retained by Lofts at Pine Hills, LLC (hereinafter the "Applicant") with an address of PO Box 16281, Albany, NY 12212 as site engineer for the completion of a development plan to be known as The Lofts at Pine Hills located at 237 Western Avenue.

DESCRIPTION OF EXISTING SITE:

PARCEL AREA

The existing site consists of 9 properties known as 233 and 237 Western Avenue, (Tax Map Parcels # 65.61-5-41.1,42), 177, 179, 181, 183, 185, and 187 (Tax Map Parcels 65.61-5-26,27,28,29,30,31) and Rear 694 State Street (Tax Map Parcel #65.61-5-14) which the applicant proposes to consolidate to create Proposed 237 Western Avenue with a site area of 70,794 SF or 1.62 Acres.

EXISTING COVERAGE STATISTICS			
Description	**Area (SF)**	**Area (acres)**	**%**
Green Area	28,097	0.64	39.6
Building Area	18,768	0.43	26.5%
Paved Area	23,929	0.55	33.9%
Total Area	70,794	1.62	100.0%

Fig. No. 1 – Existing Site Statistics

PARCEL ZONING

The site lies entirely in the MU-FM: Mixed-Use, Form Based Midtown District.

An aerial photo of the site is shown below.

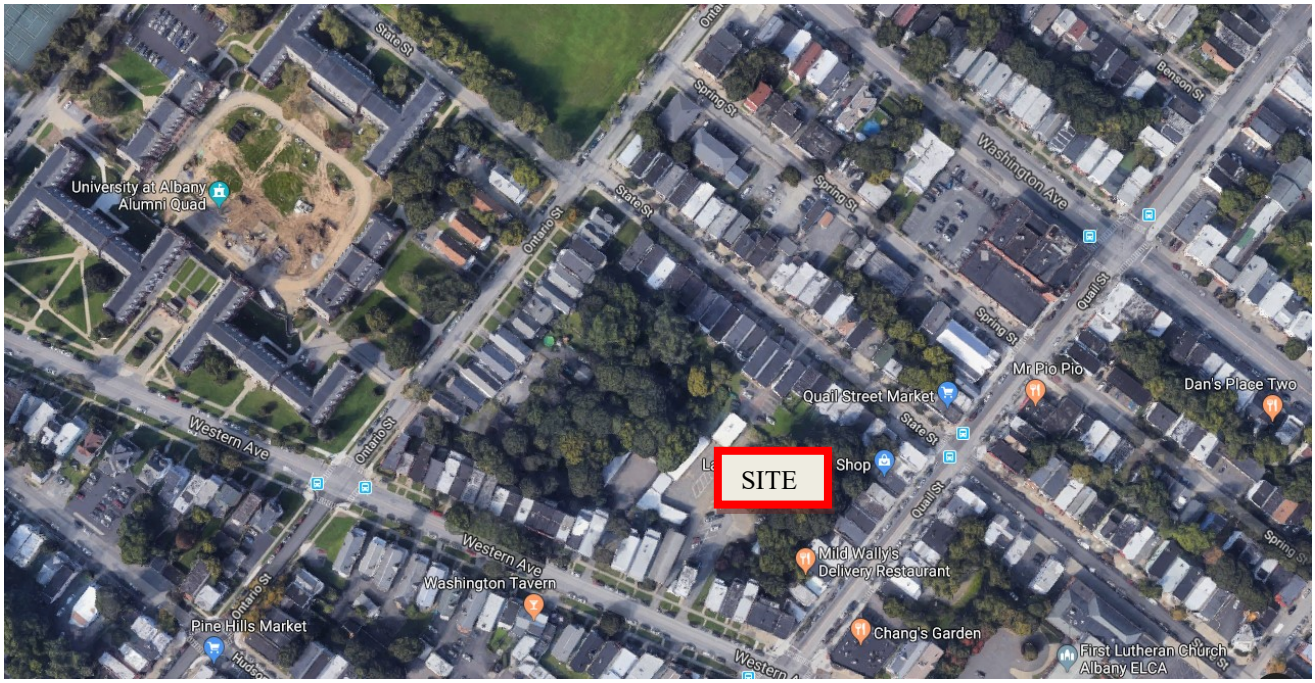


Fig. No. 2 - Aerial Photo of Site

WATERCOURSES

There are no watercourses on the surface of the site. There is a 4'6" circular brick combined sewer that runs through the middle of the site.

EXISTING WETLANDS

There are no Federal wetlands (Waters of the United States) or New York State Freshwater Wetlands within or adjacent to the site.

Fig. No. 3 - From National Wetland Inventory

FLOOD PLAIN

The site to be developed lies primarily Zone X (Area of Minimal Flooding) as shown on Flood Insurance Rate Map reproduced below:

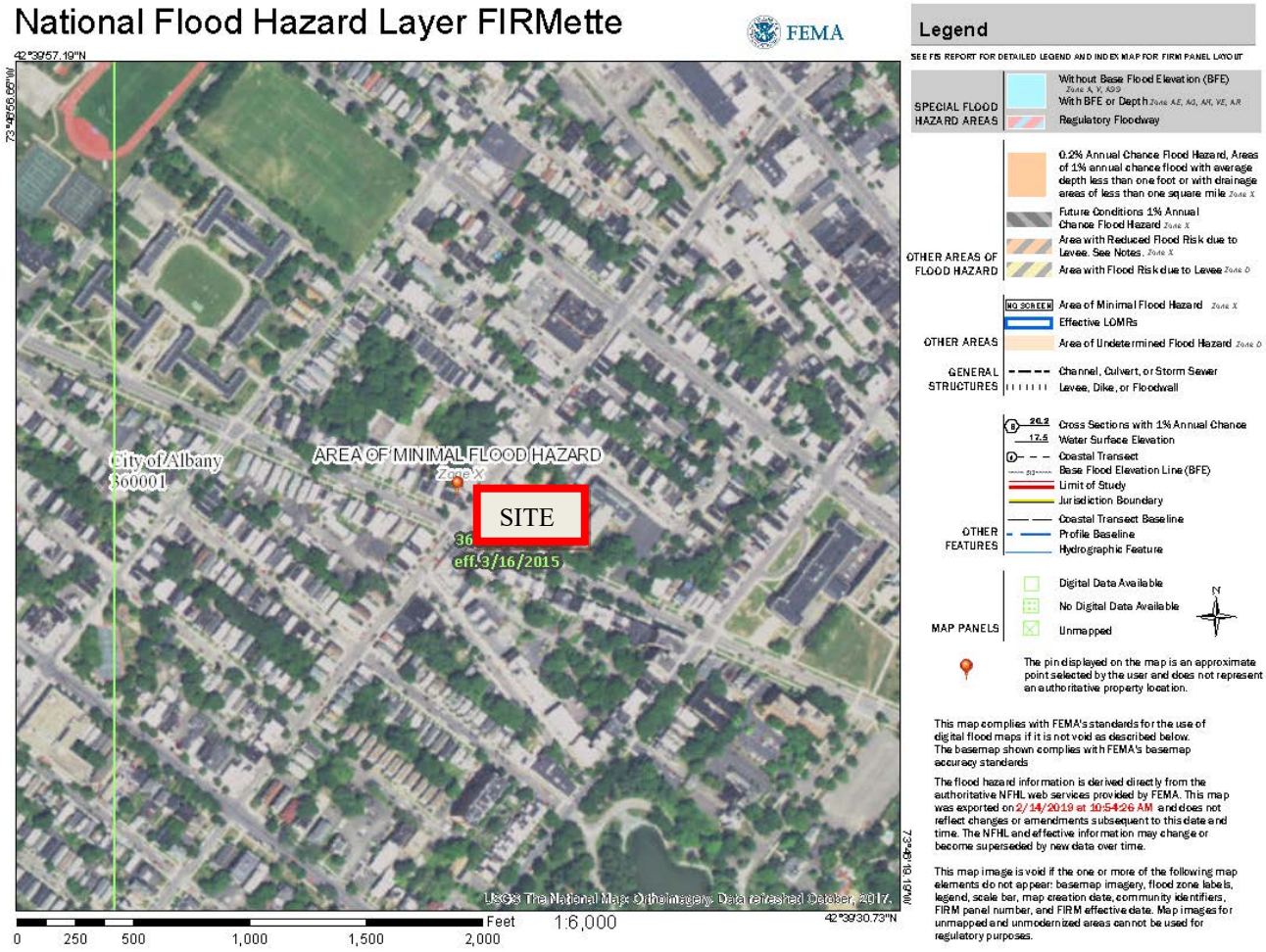


Fig. No. 4 – Firmette from FEMA Map Center

HISTORIC OR ARCHEOLOGICAL RESOURCES

The entire site has been previously graded, developed and disturbed. There are no buildings on the site which are listed on the State or Federal register of historic places.

LISTED, ENDANGERED OR THREATENED SPECIES

NYSDEC Environmental Resource Mapper shows no rare plants or animals or any significant natural community in the area of the project

EXISTING USAGE

The site is currently occupied by multi-family dwellings.

EXISTING SOILS

The project area is located in an area of Udorthents, clayey-Urban land complex, and Urban land- Udorthents complex. Both soils have no Hydrologic Class listed, so a Hydrologic Class C is assumed. A Geotechnical Report was completed and is contained in Appendix No. 11.

Fig. No. 5 – Soils Map

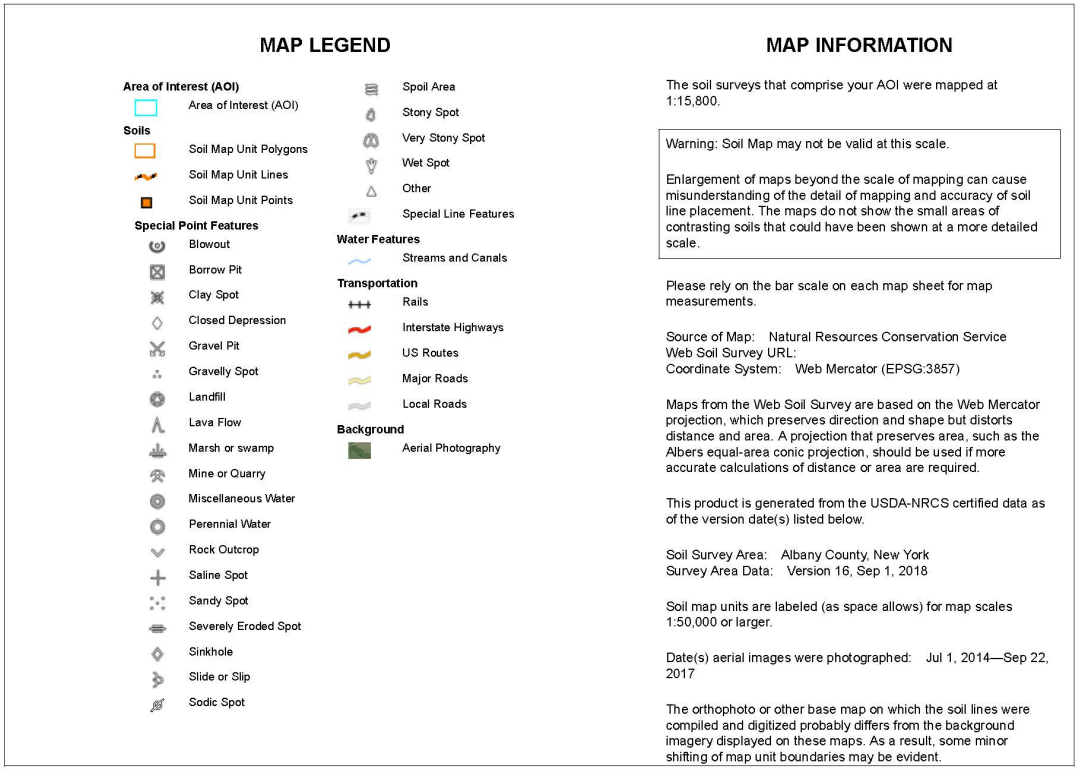


Fig. No. 6 - Map Legend

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Uh	Udorthents, clayey-Urban land complex	1.2	74.2%
Ut	Urban land-Udorthents complex, 0 to 8 percent slopes	0.4	25.8%
Totals for Area of Interest		**1.6**	**100.0%**

Fig. No. 7 - Map Unit Legend

Albany County, New York

Uh—Udorthents, clayey-Urban land complex

Map Unit Setting

National map unit symbol: 9pj2
Mean annual precipitation: 36 to 41 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, clayey, and similar soils: 40 percent
Urban land: 30 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Clayey

Typical profile

H1 - 0 to 18 inches: silty clay
H2 - 18 to 72 inches: stratified silt loam to clay

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.2 inches)

Description of Urban Land

Typical profile

H1 - 0 to 6 inches: variable

Minor Components

Scio

Percent of map unit: 10 percent
Hydric soil rating: No

Hudson

Percent of map unit: 10 percent
Hydric soil rating: No

Rhinebeck

Percent of map unit: 7 percent
Hydric soil rating: No

Madalin

Percent of map unit: 3 percent
Landform: Depressions
Hydric soil rating: Yes

Ut—Urban land-Udorthents complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9pjb
Mean annual precipitation: 36 to 41 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 50 percent
Udorthents and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Typical profile

H1 - 0 to 6 inches: variable

Description of Udorthents

Typical profile

H1 - 0 to 4 inches: channery loam
H2 - 4 to 70 inches: channery loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 5.4 inches)

Minor Components

Unnamed soils, moderately well

Percent of map unit: 10 percent

Unnamed soils, poorly

Percent of map unit: 10 percent

Fig. No. 8 – Excerpts from Description of Soils from Albany County Soil Survey

WATERSHED DESCRIPTION

The majority of the site drains toward the center of the site toward a catch basin that is tributary to the 4'6" circular brick combined sewer. Portions oof the site also drain towards Western Avenue and Quail Street's storm water system. The site also receives drainage from adjacent properties on Quail Street and Western Avenue.

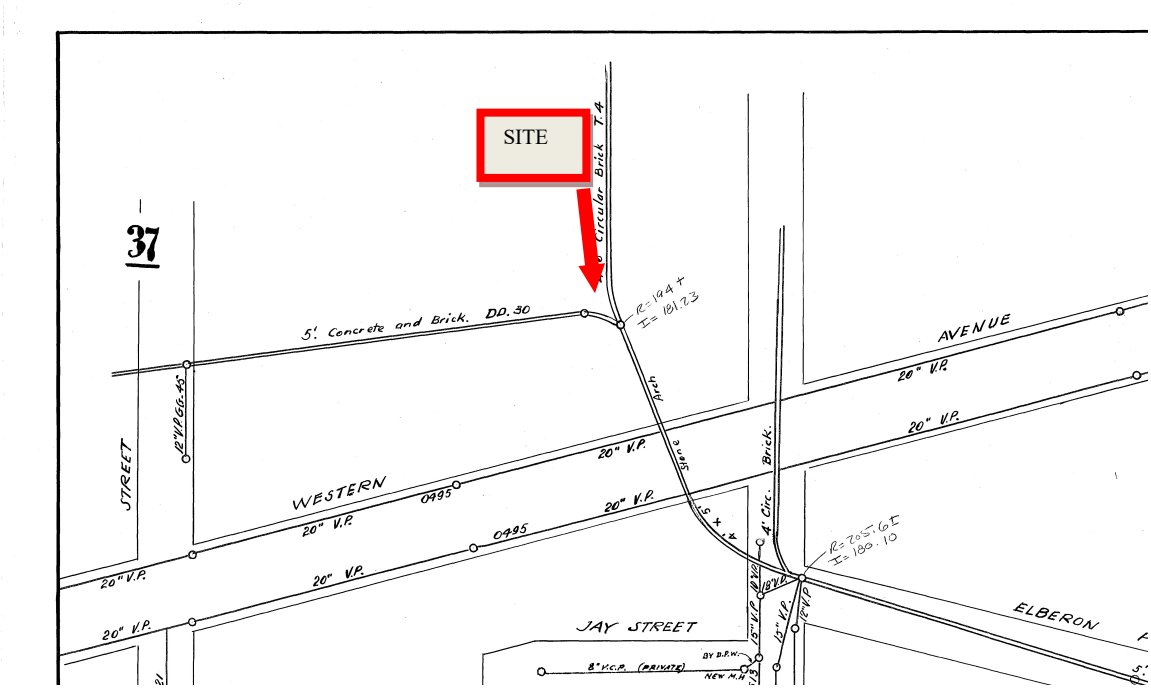


Fig. No. 9 – Portion of Sewer Atlas Sheet 035

SITE TOPOGRAPHY

The site slopes toward the center of the site in all directions at a maximum grade of 210.0 ± at Quail Street to the rim of the catch basin internal to the site at a grade of 196.6 ±.

EXISTING DRAINAGE

The Pre-Development Tributary Map (See Appendix #2) establishes 1 existing tributary area.

Tributary A – This area represents 237 Western Avenue which consists of the existing buildings to be demolished, asphalt area, and grass areas. This area is all tributary to the combined sewer in the middle of the site. Since it is tributary to a combined sewer, this area will be modeled as all grass. This area contains 2.25 acres which will be modeled as all pervious area. The CN is 74 and a time of concrentraion of 6.9 minutes.

DESCRIPTION OF INTENDED SITE DEVELOPMENT AND USE

The Applicant proposes to construct two 3-story mixed use buildings with 83 residential units for multi-family housing, and approximately 6,240 SF ± for commercial use. The site will include 69 total parking spaces, lighting, landscaping, and a stormwater management system.

DESIGN CONSIDERATIONS:

The design of the SWPPP for the subject site considered the following critical factors:

1. Compliance with Section 375-4(G)(11) of the Unified Sustainable Development Ordinance entitled STORMWATER MANAGEMENT

   (a) All development and redevelopment in the City shall comply with the requirements of Article 14 of Chapter 133 (Stormwater Management and Erosion Control) of the City Code, and with Chapter 299 (Sewers) of the City Code.

   (b) Each application for development or redevelopment shall be referred to the Department of Water and Water Supply for a determination of whether the existing sanitary and storm sewer infrastructure is adequate in size, location, connectivity, and construction quality to accommodate expected flows of both sanitary sewer and stormwater from the proposed facility. If the Albany Department of Water and Water Supply determines that the existing sanitary and/or storm sewer infrastructure is not adequate to accommodate expected sanitary and stormwater flows from the proposed development, the City may require that the applicant modify the proposed development and/or install or contribute a proportional share of the overall cost to the installation of required storm and sanitary sewer infrastructure before the proposed development is approved, and the applicant may be required to pay its proportionate share of those costs.

   (c) All development and redevelopment within the City with a proposed area of disturbance greater than or equal to one-quarter (1/4) of an acre in size shall comply with the latest version of the New York State Department of Environmental Conservation Stormwater Management

Design Manual that are written as applicable to properties with areas of disturbance of one (1) acre in size or larger.

(d) The maximum allowable design peak-flow stormwater discharge into the combined sewer system shall be limited to the calculated peak-flow discharge of the **10-year storm for un-development site conditions**, as determined by a Professional Engineer, and to be reviewed and accepted by the Department of Water and Water Supply.

2. During construction comply with the *New York State Standards and Specifications for Erosion and Sediment Control* dated July, 2016.

3. The permanent system complies with the New York State Stormwater Management Design Manual (hereinafter NYSSWDM), last revised January, 2015 with the exception of the consideration of the 10-year undeveloped site as opposed to the redevelopment standard.

4. The outflow from the proposed system to the drainage system is decreased so that the post development outflow at 100-year storm (7.55 CFS) is less than or equal to the pre-existing conditions of an entirely pervious site for the 10-year storm (7.55 CFS)

5. The storm system can accommodate the storm water for a 1-, 10-, and 100-year storm.

6. The storm drainage system should accommodate the drainage from the site during a 100-year storm without any damage to personal property.

SELECTED METHOD OF TREATMENT & STORAGE:

The design of the SWPPP includes the following elements of treatment and storage:

Tributary Areas 1 and 2 represent approximately 22,285 SF of roof drainage that will be stored on the rooftop (blue roof). Roof drains will direct roof drainage to the storm water basins on Quail and Western. The stormwater vault was installed as part of the Quail Street Green Infrastructure Project, which ties stormwater into the 5' storm sewer on Elberon Place. The 5' storm sewer is tributary to Washington Park Lake. These areas have a CN of 98 and a Tc of 1.3 and 1.6 minutes, respectively. Tributary Areas 3 and 4 represent the remainder of the site, which includes retaining walls, asphalt parking areas, concrete sidewalk, and grass lawn. The storm sewer system will be stored in 48" pipes and then discharged into a hydrodynamic separator, which ties into the combined sewer system that runs throughout the site. The CN for areas 3 and 4 are 75 and 81, with a Tc of 2.9 and 1.2 minutes, respectively. The runoff that enters the combined sewer at the 100-year storm will be less than the 10-year storm for un-developed conditions.

CALCULATED FLOWS FROM THE SITE

The following table is prepared from the comparisons between the Un-developed and the proposed conditions as detailed on the HydroCAD®10.00 contained in Appendix 5.

10/15/2021

Pre & Post Development Run-off Summary							
		1 YEAR STORM		10 YEAR STORM		100 YEAR STORM	
PRE	*POST*	PRE	*POST*	PRE	*POST*	PRE	*POST*
RA		2.21		7.55		15.28	
	R1		2.04		4.70		7.46
RB		0.00		0.00		0.00	
	R2		0.02		0.04		0.09
TOTAL		2.21		7.55		15.28	
	TOTAL		2.06		4.74		7.55

Fig. No. 10 – Calculated Flows from the site

WATER QUALITY VOLUME

Water Quality Volume (WQ_v) is computed based upon the following formula:[1]

$$WQ_v = \frac{(P)\,(R_v)\,(A)}{12}$$

Where WQ_v = water quality volume (acre-feet)

P = 90% rainfall event[2] (1.20 inches)

R_v = 0.05 + 0.009 I, where I is percent impervious cover

A = site area in acres

[1] **Ibid.** Table 4-1, Page 4-3

[2] **Ibid.**, Page 4-2, Figure 4.1

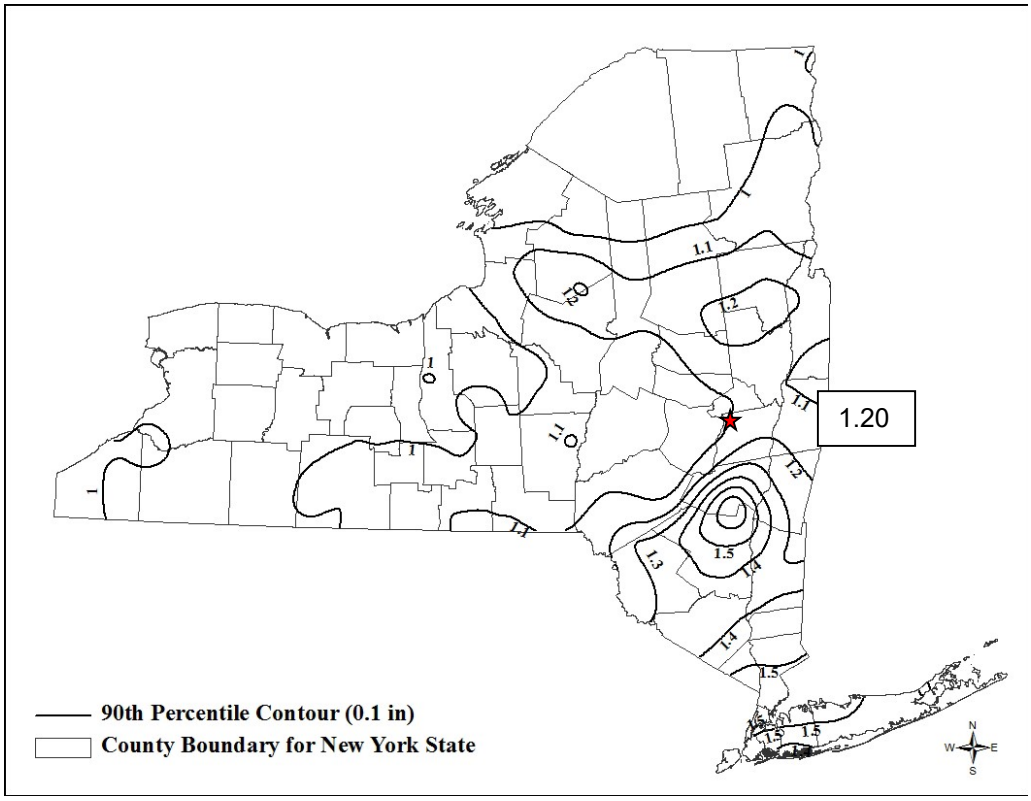


Fig. No. 11 – NYSDEC 90th Percentile Contour

The Water Quality Volume (WQ_v) is computed in Appendix #7. The total WQv for the site is 5,410 cubic feet or 0.124 acre-feet. The Water Quality Volume will be met by using a hydrodynamic separator for roof drainage and sheet flow from the parking lot.

PROPOSED SITE COVERAGE STATISTICS

The proposed site coverage statistics are shown below in figure 12.

PROPOSED COVERAGE STATISTICS			
Description	**Area (SF)**	**Area (acres)**	**%**
Green Area	14,828	0.33	20.9%
Building Area	22,270	0.51	31.5%
Paved Area	33,696	0.77	47.6%
Total Area	70,794	1.62	100.0%

Fig. No. 12 – Proposed Coverage Statistics

CAPACITY OF COMBINED SEWER SYSTEM TO ACCEPT FLOWS

Portion of the site is served by a combined 4'x5' concrete and brick sewer main. See portion of Sheet 036 in Fig. No. 13 below.

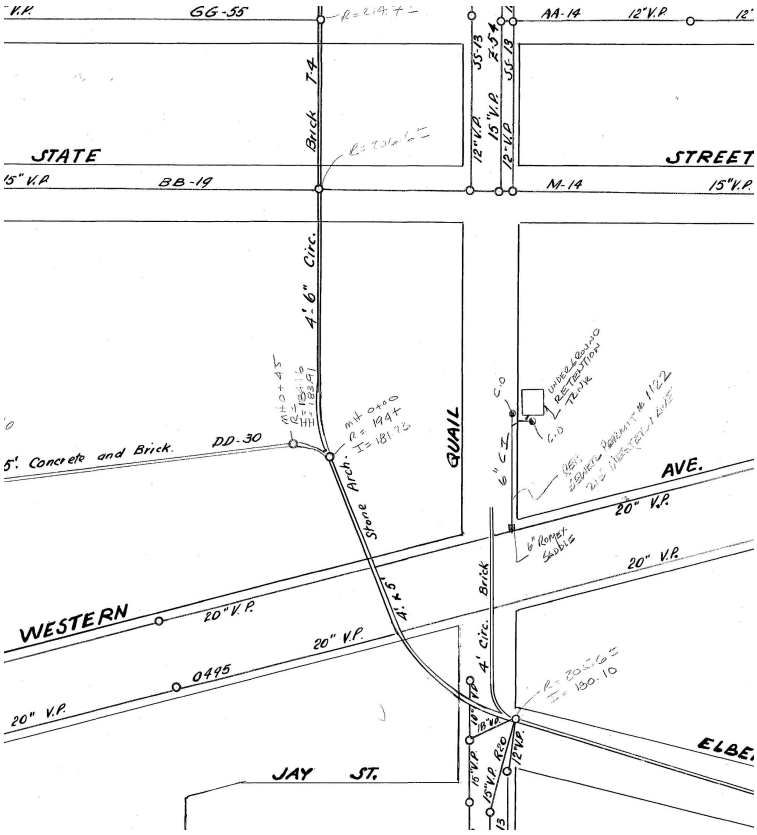


Fig. No. 13 – Portion of Sewer Atlas Sheet No. 036

By instituting the storm water management system, the flow to the combined sewer main will be reduced at the 10-year storm from 7.55 CFS to 4.70 CFS a

reduction of 2.85 CFS and at the 100-year storm from 15.28 CFS to 7.46 CFS, a reduction of 7.82 CFS.

CONSTRUCTION SEQUENCING & SEDIMENTATION AND EROSION CONTROL DURING CONSTRUCTION

The construction sequence for this project is shown below. Approximate timing is indicated where applicable in red following steps.

Prior to commencement of any work this SWPPP

- ✓ Assure that copy of SWMR & SWPPP is on the site. ON COMMENCEMENT
- ✓ Establish Qualified Individual who will be performing site inspection. ON COMMENCEMENT
- ✓ Inspections must be performed by the qualified professional must be submitted to the MS4 Coordinator. FROM COMMENCEMENT UNTIL PROJECT COMPLETE
- ✓ Establish Trained Contractor who will be on site. At least one Trained Contractor must be on site whenever ground disturbing activities are being undertaken. ON COMMENCEMENT
- ✓ Establish contact person for Contractor/Subcontractor. ON COMMENCEMENT
- ✓ **IN CASE OF ANY SPILLS OF MATERIALS ON SITE, EXECUTE SPILL**
- ✓ **RESPONSE PLAN CONTAINED IN APPENDIX #7**

Construction Sequence

- ✓ Install traffic controls as required. PRIOR TO THE START OF ANY CONSTRUCTION
- ✓ Install construction fencing as required. PRIOR TO THE START OF ANY CONSTRUCTION

- ✓ Install silt fence or other controls as indicated on the plan. PRIOR TO COMMENCEMENT OF ANY GRADING – FENCE TO REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED.
- ✓ Commence work on site.
- ✓ Grade and prepare stabilized construction access. PRIOR TO COMMENCEMENT OF ANY GRADING – STABILIZED CONSTRUCTION ACCESS TO REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED.
- ✓ Establish fueling area. Relocate when required. MAINTAIN A FUELING AREA FOR EQUIPMENT UNTIL NO LONGER REQUIRED.
- ✓ The existing pavement must be kept swept clean to avoid tracking materials onto any streets. CONTINUOUSLY FROM INCEPTION TO COMPLETION OF STABILIZATION OR UNTIL PROJECT IS COMPLETE.
- ✓ Maintain this area clean of debris and verify condition and safety of storage of materials listed below. Requires daily inspection. CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.
- ✓ Any construction materials, chemicals or construction debris must be stored in sealed receptacles, trailers or buildings. Any storage piles of materials meant for installation (i.e., sand, etc.) must be surrounded by sedimentation fence. The list of anticipated materials stored on site during construction is provided below and must be updated if any additional materials are utilized: CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.
    - ❑ Select Fill
    - ❑ Fencing Materials
    - ❑ Pipes
    - ❑ Pipe Solvents
    - ❑ Concrete Structures
    - ❑ Reinforcing Steel
    - ❑ Brick
    - ❑ Concrete Additives

- Concrete Sealers

✓ MSDS sheets must be available on site for all materials used or imported to the site. CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.

✓ Any chemical spills must be contained immediately on site and reported to NYSDEC. CONTINUOUSLY FROM INCEPTION TO FILING OF NOTICE UNTIL PROJECT IS COMPLETE.

✓ Oil and grease spills from equipment shall be treated immediately. CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.

✓ Direct drainage to storage system. PRIOR TO REMOVAL OF TEMPORARY PERIMETER SWALE AND CHECK DAMS.

✓ Complete construction of Project.

✓ Obtain approval of Project completion from the Department of Water & Water Supply,

HOUSEKEEPING SECTION

During construction any construction materials, chemicals or construction debris must be stored in sealed receptacles, trailers or buildings. Any storage piles of materials meant for installation (i.e., sand, etc.) must be surrounded by sedimentation fence. The list of anticipated materials stored on site during construction is provided below and must be updated if any additional materials are utilized:

- Select Fill
- Fencing Materials
- Pipes
- Pipe Solvents
- Concrete Structures
- Reinforcing Steel

- Brick
- Concrete Additives
- Concrete Sealers

MSDS sheets must be available on site for all materials used or imported to the site.

Any chemical spills must be contained immediately on site and reported to NYSDEC.

IN CASE OF ANY SPILLS OF MATERIALS ON SITE, EXECUTE SPILL RESPONSE PLAN CONTAINED IN APPENDIX #7

Oil and grease spills from equipment shall be treated immediately. Vehicle fueling must take place in designated area. Relocate designated fueling area when required.

COMBINED SEWER OVERFLOW BEST MANAGEMENT PRACTICES

NYSDEC issued a City of Albany Combined Sewer Overflow SPDES Permit, DEC ID 4-0i01-00012/00001 SPDES NY0025747 on November 30, 2018 (see Attachment #1) It included fifteen Best Management Practices which are reviewed below:

1. CSO Operation/Maintenance/Inspection – Not Applicable to this project although maintenance and inspection of Storm Water Management System is covered by maintenance agreement.

2. Maximum Use of Collection System for Storage – Not Applicable

3. Industrial Pretreatment — There are industrial discharges and no toxic substances which will be discharged to the combined sewer.

4. Maximize Flow to POTW-Not applicable.

5. Wet Weather Operating Plan -Not applicable

6. Prohibition of Dry Weather Overflow – Dry weather overflows from the combined sewer system (CSS) are prohibited. Sewer outfalls from the site are separated into storm and sanitary sewer laterals. Dry weather flow can be accommodated from the site as shown by observation of the Big C CSO Smart Cover readings below. On this graph the minimum value of dry weather flow was estimated as 23.5 inches. The high-level advisory is 46.5 inches. The high-level alarm is 48.5 inches. There will be no impact on dry weather flow from this site as this project will not include any change in sanitary flow.

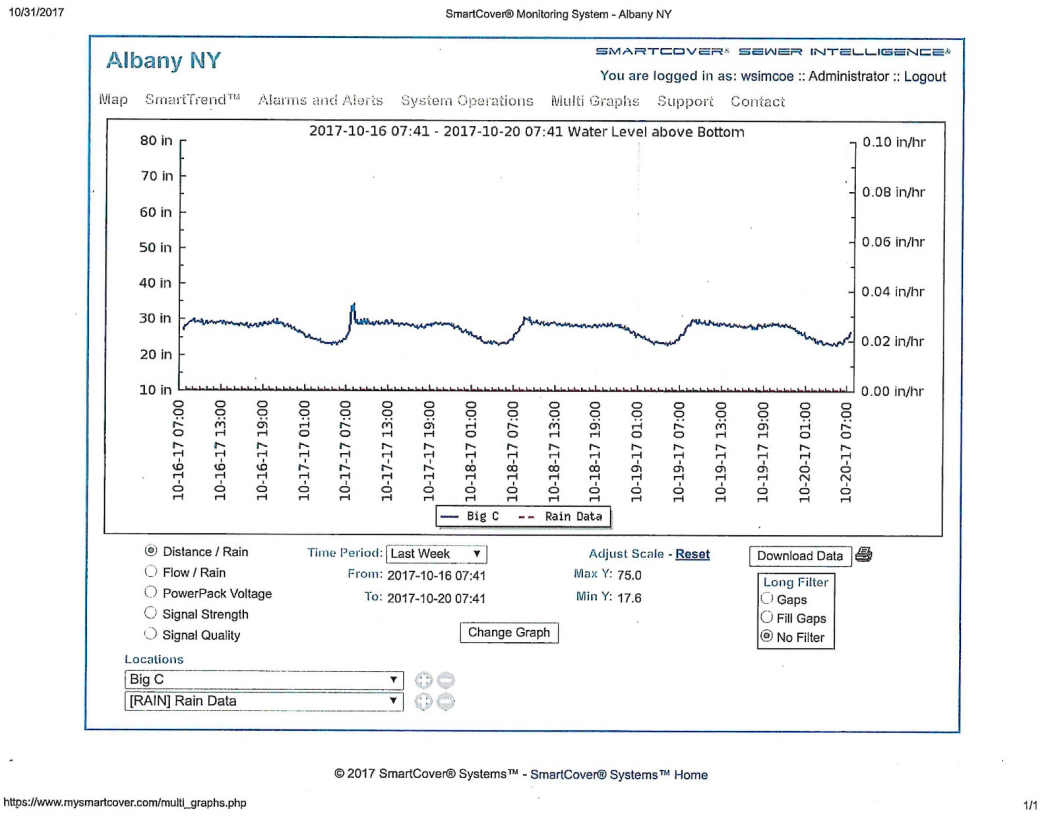


Fig. No. 14- Smart Cover readings from “Big C” CSO

7. Control of Floatable and Settleable Solids - The Applicant will not permit the deposition of oil/grease or toilet litter.

8. Combined Sewer System Replacement – Not applicable.

9. Sewer/Extension – Sewer/extension, when approved by the Department, should be accomplished using separate sewers. Sewer outfalls from the site are separated into storm and sanitary sewer laterals without interconnections. No new source of storm water shall be connected to any separate sanitary sewer in the collection system. There is no increase in sanitary flow from this project and this is not considered a sewer extension.

10. Sewage Backups - There have been or discharges of raw sewage onto the ground surface from surcharging manholes have been documented in this area of the Beaver Creek Sewer. Since the combined flow to the combined sewer is reduced for all storms from the 1 year to the 100-year storm frequencies this project will not make potential surcharging/back-up problems any worse and will lead to a slight reduction in incidence.

11. Septage and Hauled Waste - Not Applicable.

12. Control of Run-off - The impacts of run-off from development and re-development in areas served by combined sewers shall be reduced by requiring compliance with the New York Standards for Erosion and Sediment Control and the quantity control requirements included in the New York State Stormwater Management Design Manual. The combined flow to the combined sewer system is reduced for all storms from the 1 year to the 100-year storm frequencies for this project.

13. Public Notification - Not Applicable.

14. Characterization and Monitoring -Not Applicable

15. Annual report - Not Applicable.

DESCRIPTION OF NEED FOR WINTER CONDITION

The construction sequence for this project may require work between November 15th and April 1st of any year when construction is ongoing. Some unstabilized soil areas may exist on November 15th. This Section is issued for use in the event that such conditions exist. The **STANDARD AND SPECIFICATIONS FOR WINTER STABILIZATION** (reproduced below) will apply to this project area. Accommodations for wintertime conditions are addressed below.

STANDARD AND SPECIFICATIONS FOR WINTER STABILIZATION

Definition & Scope

A temporary site specific, enhanced erosion and sediment control plan to manage runoff and sediment at the site during construction activities in the winter months to protect off-site water resources.

Conditions Where Practice Applies

This standard applies to all construction activities involved with ongoing land disturbance and exposure between November 15th to the following April 1st.

Design Criteria

1. Prepare a snow management plan with adequate storage for snow and control of melt water, requiring cleared snow to be stored in a manner not affecting ongoing construction activities.

2. Enlarge and stabilize access points to provide for snow management and stockpiling. Snow management activities must not destroy or degrade installed erosion and sediment control practices.

3. A minimum 25 foot buffer shall be maintained from all perimeter controls such as silt fence. Mark silt fence with tall stakes that are visible above the snow pack.

4. Edges of disturbed areas that drain to a waterbody within 100 feet will have 2 rows of silt fence, 5 feet apart, installed on the contour.

5. Drainage structures must be kept open and free of snow and ice dams. All debris, ice dams, or debris from plowing operations, that restrict the flow of runoff and meltwater, shall be removed.

6. Sediment barriers must be installed at all appropriate perimeter and sensitive locations. Silt fence and other practices requiring earth disturbance must be installed before the ground freezes.

7. Soil stockpiles must be protected by the use of established vegetation, anchored straw mulch, rolled stabilization matting, or other durable covering. A barrier must be installed at least 15 feet from the toe of the stockpile to prevent soil migration and to capture loose soil.

8. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures should be initiated by the end of the next business day and completed within three (3) days. Rolled erosion control blankets must be used on all slopes 3 horizontal to 1 vertical or steeper.

9. If straw mulch alone is used for temporary stabilization, it shall be applied at double the standard rate of 2 tons per acre, making the application rate 4 tons per acre. Other manufactured mulches should be applied at double the manufacturer's recommended rate.

10. To ensure adequate stabilization of disturbed soil in advance of a melt event, areas of disturbed soil should be stabilized at the end of each work day unless:

    a. work will resume within 24 hours in the same area and no precipitation is forecast or;

    b. the work is in disturbed areas that collect and retain runoff, such as open utility trenches, foundation excavations, or water management areas.

11. Use stone paths to stabilize access perimeters of buildings under construction and areas where construction vehicle traffic is anticipated. Stone paths should be a minimum 10 feet in width but wider as necessary to accommodate equipment.

Maintenance

The site shall be inspected frequently to ensure that the erosion and sediment control plan is performing its winter stabilization function. If the site will not have earth disturbing activities ongoing during the "winter season", **all** bare exposed soil must be stabilized by established vegetation, straw or other acceptable mulch, matting, rock, or other approved material such as rolled erosion control products. Seeding of areas with mulch cover is preferred but seeding alone is not acceptable for proper stabilization.

Compliance inspections must be performed and reports filed properly in accordance with the SWPPP for all sites under a winter shutdown.

WINTER CONDITIONS ITEMS TO BE ADDRESSED

1. Identify areas within the site to store snow which is tributary to the temporary perimeter swale. As work progresses this area may move but positive drainage tributary to the temporary perimeter swale must be maintained.

2. Widen stabilized construction access points to a minimum of 28 feet. Where pavement forms a portion of that route, maintain 50 feet of stone pavement meeting the detail as shown on the SWPPP plan. Stockpile a minimum of 25 cubic yard of stone for the purposes of establishing stone access point after snow storms.

3, Where any areas at the street grade or within two feet of the street grade remain disturbed overnight, stabilize those areas using 6” of broken stone.

4. Where equipment or vehicles are traversing the bottom of the excavation, establish paths using 6” of broken stone.

5. At any point on the perimeter where drainage from accumulated snow or ice will drain away from the site protect these areas with fiber rolls or polyethylene coated check dam materials (Filtrexx, Erosion eel or equal).

6. If work is to cease for more than 3 days, stabilize all disturbed soils.

WINTER CONDITIONS SUMMARY:

The following is a summary of the required work if wintertime as presented by the preparer of this report:

1. The temporary system and control measures proposed herein and as shown on the plans comply with the *New York State Standards and Specifications for Erosion and Sediment Control* dated July, 2016.
2. The winter stabilization complies with Standard and Specifications for Winter Stabilization as described *New York State Standards and Specifications for Erosion and Sediment Control* dated July, 2016.

SUMMARY:

The following is a summary of the findings of this study as presented by the preparer of this report:

1. The 100-year design storm as fully developed will not exceed the runoff from the 10-year storm from the site considered as 100% pervious
2. The storm drainage system will accommodate the drainage from the site for the 1, 10 & 100-year design storm.
3. Damage to personal property or adjacent will not occur when subjected by the 100-year storm as a result of this storm water management system.
4. The maintenance plan if followed will result in a storm water management system that can be readily maintained.
5. The permanent system complies with Section 375-4(G)(11) of the Unified Sustainable Development Ordinance entitled STORMWATER MANAGEMENT.

CONCLUSION & CERTIFICATION:

It is the conclusion of the Engineer that the erosion and sediment control system, as designed, and the permanent storage and treatment system will function adequately to store the stormwater prior to discharge. Also, the Engineer certifies that the project will not adversely impact adjacent or downstream properties or the downstream sewer collection system.

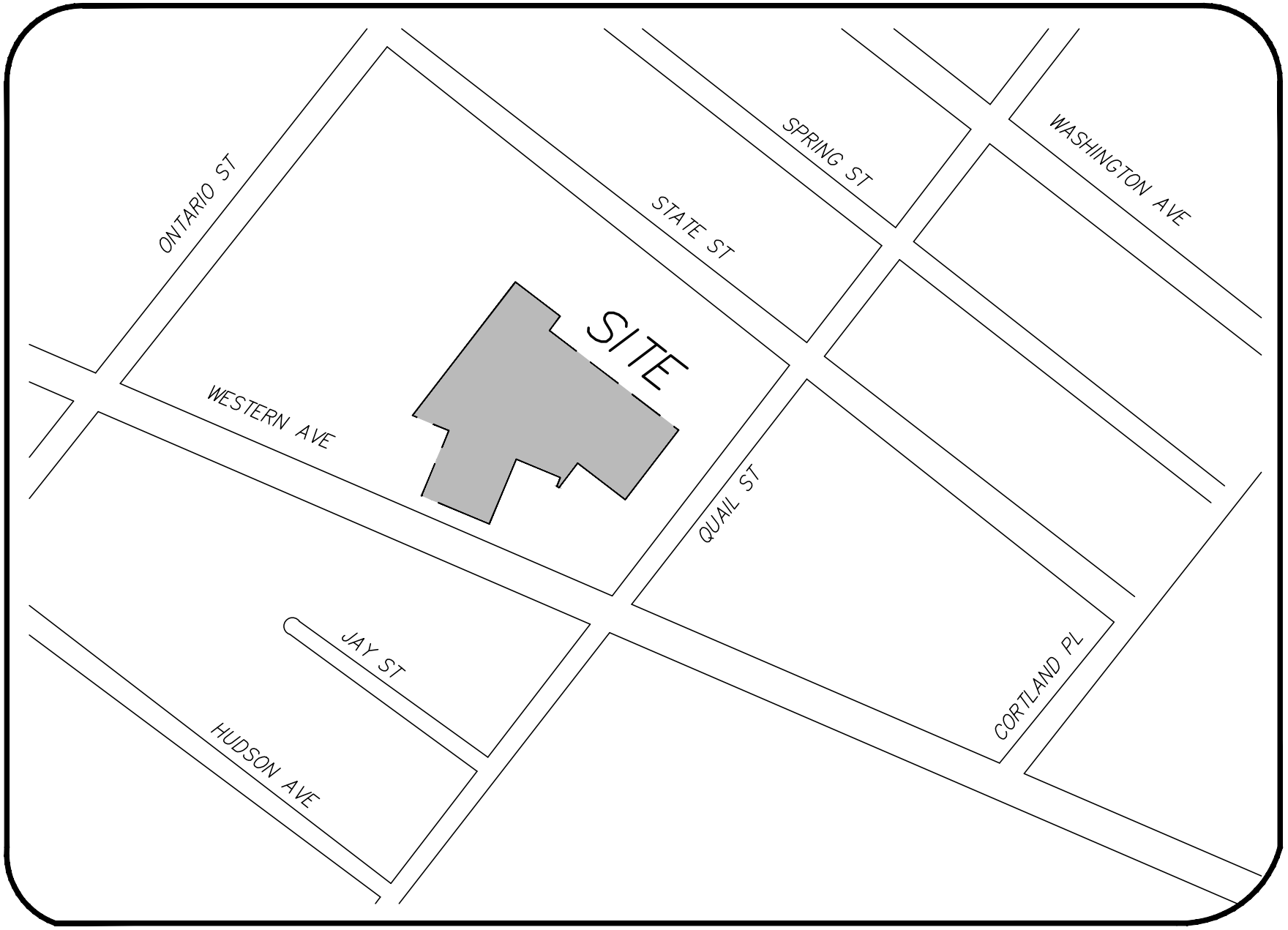
Prepared by:

Daniel R. Hershberg, P.E. & L.S.
Lic. No. 44226

File:DRH/SWPPP/SWPPPSWMR20180312 rev 10.15.21.doc

APPENDIX #1

SITE LOCATION MAP

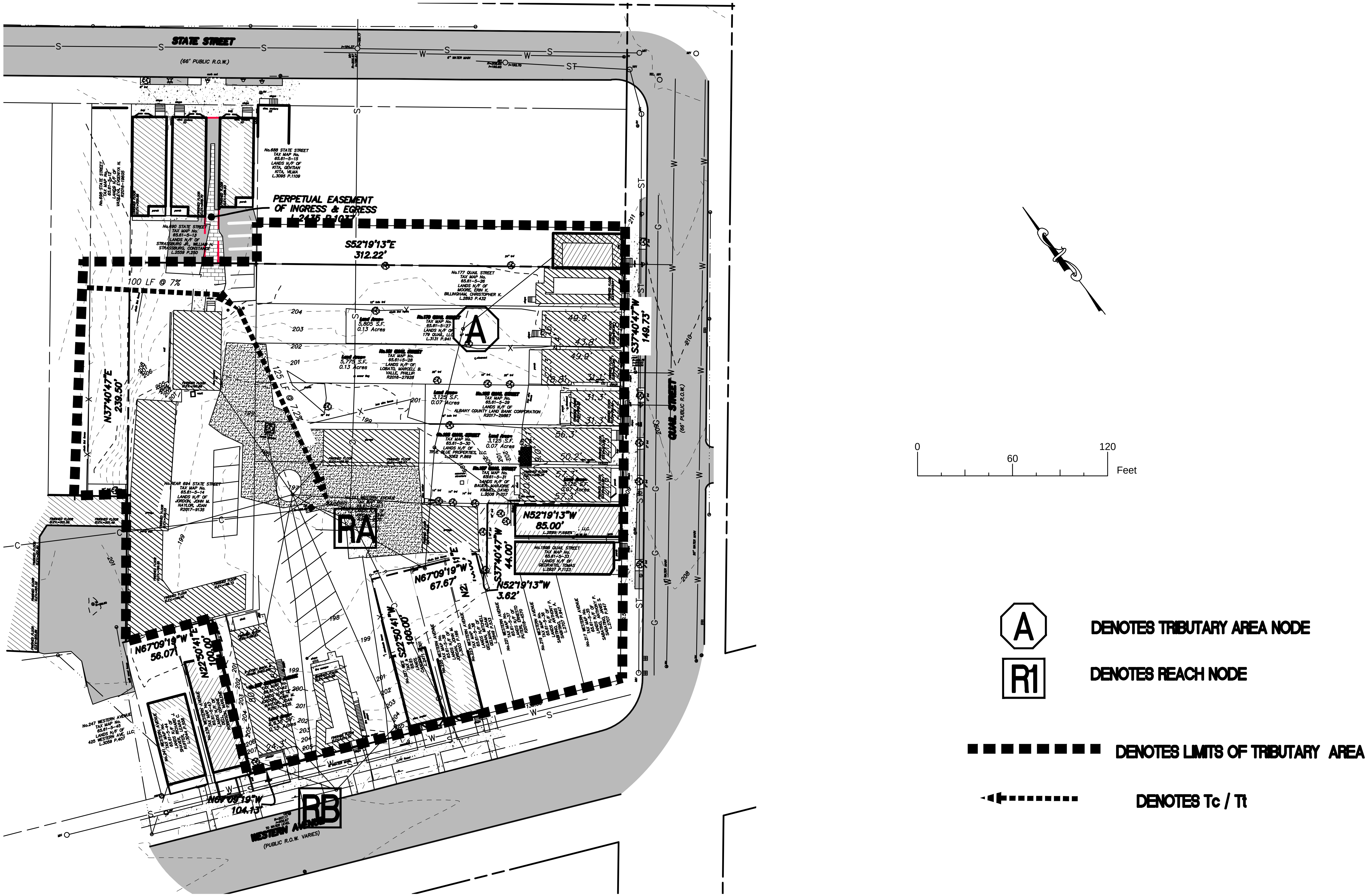


VICINITY MAP

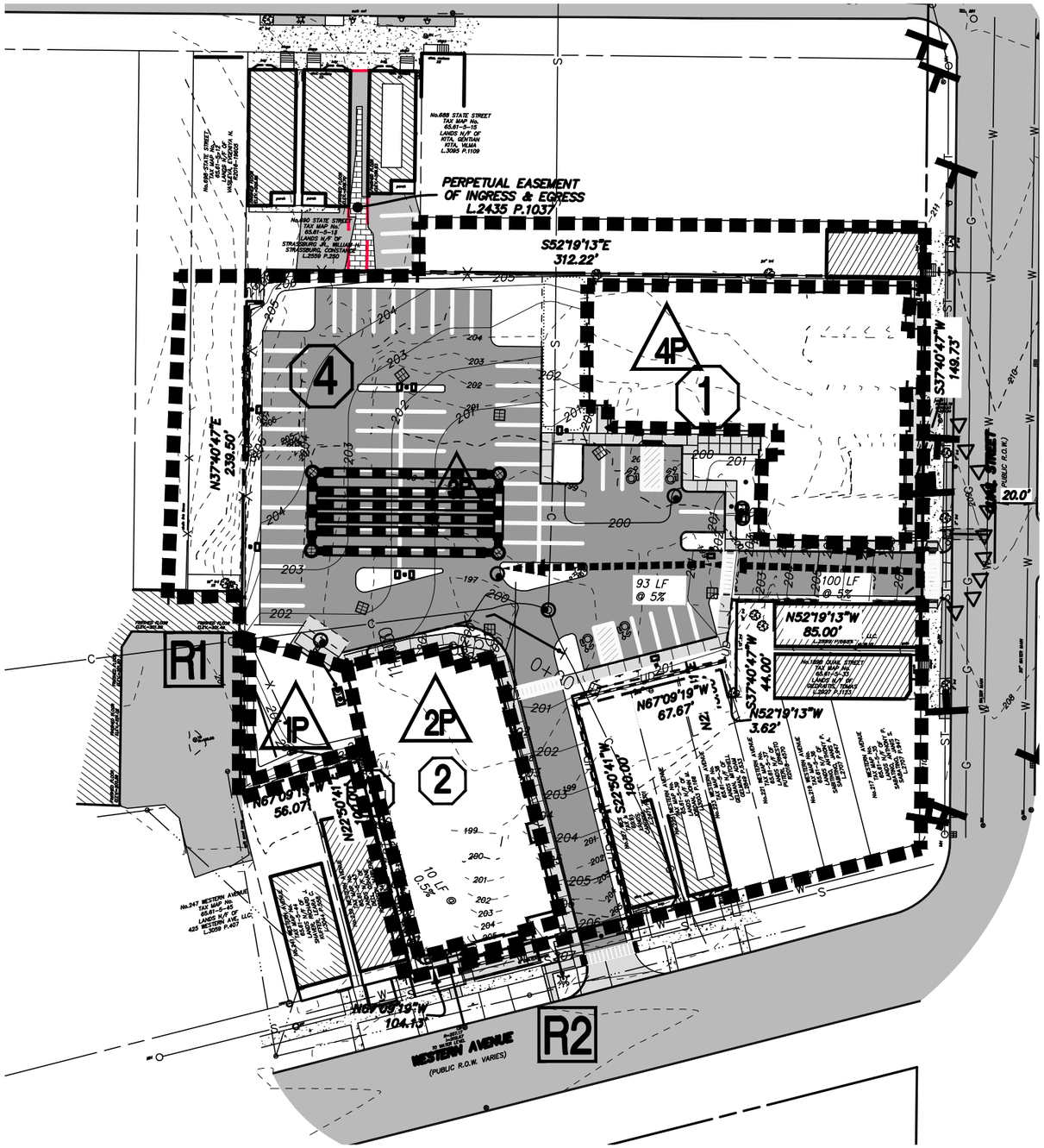
MAP NOT TO SCALE

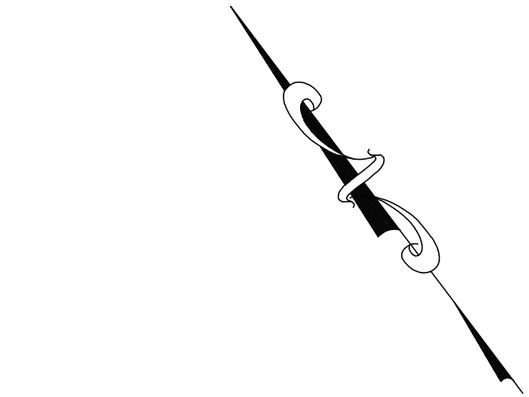
APPENDIX #2

TRIBUTARY AREA MAPS



PRE DEVELOPMENT TRIBUTARY AREA MAP 1"=60'





0 60 120 Feet

1 DENOTES TRIBUTARY AREA NODE

R1 DENOTES REACH NODE

1P DENOTES STORAGE NODE

DENOTES LIMITS OF TRIBUTARY AREA

DENOTES Tc / Tt

POST DEVELOPMENT TRIBUTARY AREA MAP 1"=60'

APPENDIX #3

MAINTENANCE PLAN

Facility Owner (Responsible Party):
Lofts at Pine Hills LLC
1 Noble Path
Albany, NY 12205

The facility owner will be responsible to provide capital funding for this facility. The source will be from infrastructure funds set aside for construction. On an annual basis the responsible party will budget funds to fund the annual operating and maintenance costs. The facility owner must maintain all drainage facilities, stormwater quantity control facilities and all stormwater quality control facilities in accordance with approved plans and with this maintenance manual. Complete inspection form and retain with SWPPP. Inspection may be performed by a Qualified Inspector or a Qualified Professional. The Qualified Inspector is defined in GP #0-15-002 as follows:

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, 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.*

The Qualified Professional is defined in GP #0-15-002 as follows:

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 in order to prepare a SWPPP that conforms to the Department's technical standard. 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.

The elements of this SWPPP which require inspection include:

Overall Function of Collection System
This inspection includes pipe from catch basins to the Hydrodynamic Separator which is connected to the infiltration basin. Also examine the quality of vegetation cover. If vegetation is not in healthy condition report to owner and schedule another site visit after vegetation is restored to required levels. If objectionable odors exist determine source and report to the owner for correction. Determine schedule for repair and perform an inspection upon repair.

Catch basins and pipes– Conduct an annual inspection for accumulated sediment. If sediment builds up in the catch basins to 6" use vacuum methods to clear these structures of sediment.

Vegetation cover within the tributary area. The inspection shall verify that on lawns or other seeded areas that vegetation covers a minimum of 90% of the exposed ground. Other areas such as mulch beds or landscaped areas shall be inspected to verify that proper mulching is in place.

Concrete structures. Inspection shall verify that structures and their metal frames & grates or metal covers are in good condition. Structures shall be opened to verify that structures are clean

Housekeeping Section – This section describes items requiring regular checking and should be conducted on a daily basis.

Daily inspection.
Debris cleanup – Remove and dispose of all debris encountered on parking area, on lawn areas or in area adjacent to public right-of-way.

Materials storage – Verify that all materials identified in the Housekeeping Section have been properly stored.

Winter Conditions and Transition Periods - Follow winter conditions for construction between November 15th and April 1st.. After April 1st during spring thaw, if ground remains unstabilized extend winter conditions. Prior to November 15th, if freezing occurs and ground remains unstabilized extend winter conditions.

Oil & Grease – Any visible oil and grease shall be treated with proper materials to capture residue. Remove any materials from the site. If possible, determine cause of accumulation of oil & grease and address these.

Monthly inspection or inspection after every significant rainfall (0.5 inches in 24 hours) shall determine whether the following benchmarks are reached in which case appropriate action shall be taken.

Condition of vegetation –Areas with seeded lawns should be maintained in accordance with good cultural practices. Mow and remove clippings if required. Dead or diseased plant material shall be replaced.

Semi-Annual inspection shall determine whether the benchmarks listen in the checklist are met.

Condition of vegetation in Green Roof – Remove any invasive species in green roof. Roof drains should be cleared of any vegetation or debris that clog the drain inlet.

Annual inspection shall determine whether the benchmarks listed in the checklist are met.

Structures and pipes – Inspect condition of all concrete structures for spalling or cracking. Repair or replace as required. Examine metal grates and repair or replaces as required.

Operation, Maintenance and Management Inspection Checklist
(Complete in 5 Pages)

Project: Lofts at Pine Hills Apartments
Location: 237 Western Avenue
City of Albany, Albany County, NY
Date: _____ Time: _____
Inspector: _____

MAINTENANCE ITEM	SATISFACTORY(S)/ UNSATISFACTORY(U)	COMMENTS

1. Hydrodynamic Separator (Monthly or after any significant storm event)

Contributing areas clean of debris ☐ **(S)** ☐ **(U)**

Swirl Chamber contains less than 3 C ☐ **(S)** ☐ **(U)**

(remove if greater)

2. Oil and Grease (Monthly)

Inspect water for evidence of oil & grease ☐ **(S)** ☐ **(U)**

Activities in drainage area minimize oil ☐ **(S)** ☐ **(U)**
and grease entry

3. Vegetation Control (Monthly)

Contributing drainage area stabilized ☐ **(S)** ☐ **(U)**

No evidence of erosion ☐ **(S)** ☐ **(U)**

Area mowed and clipping removed ☐ **(S)** ☐ **(U)**

4. Vegetation Control on Green Roof (Monthly)

Remove invasive species ☐ **(S)** ☐ **(U)**

Clear roof drain inlet of debris ☐ **(S)** ☐ **(U)**

Replant proper materials if any dead plant material or bare areas exist over 4 SF

☐ **(S)** ☐ **(U)**

Mow Pennsylvania Sedge during growing season

☐ **(S)** ☐ **(U)**

MAINTENANCE ITEM	SATISFACTORY(S)/ UNSATISFACTORY(U)	COMMENTS

Maintenance of Blue Roof

5. Cleanout (Check Monthly)

Roof areas clean of debris ☐ **(S)** ☐ **(U)**

Area around Roof Drains is clean ☐ **(S)** ☐ **(U)**

6. Pipe Connections (Check Quarterly)

Verify Pipes remain connected ☐ **(S)** ☐ **(U)**

Identify any leaks and repair ☐ **(S)** ☐ **(U)**

7. Overall Function of System (Check Annually)

Verify that roof drains are functioning ☐ **(S)** ☐ **(U)**

Surface Collection System

8. Structural Components (Annual)

No evidence of structural deterioration ☐ **(S)** ☐ **(U)**

All grates are in good condition ☐ **(S)** ☐ **(U)**

No evidence of spalling or cracking of structural parts ☐ **(S)** ☐ **(U)**

No evidence of damage to practice signs ☐ **(S)** ☐ **(U)**

MAINTENANCE ITEM	SATISFACTORY(S)/ UNSATISFACTORY(U)	COMMENTS

9. Overall Function of Facility (Annual)

No replacement of pipes or catch

Basins required ☐ **(S)** ☐ **(U)**

Evidence of flow bypassing facility ☐ **(S)** ☐ **(U)**

No noticeable odors outside of facility ☐ **(S)** ☐ **(U)**

Check vegetation Condition ☐ **(S)** ☐ **(U)**

Clean and Service Hydrodynamic Separator ☐ **(S)** ☐ **(U)**

(schedule annually)

10. Winter Conditions and Transition Periods (Daily)

Follow winter conditions for Construction between November 15th

and April 1st ☐ **(S)** ☐ **(U)**

After April 1st during spring thaw, If ground remains unstabilized

Extend winter conditions ☐ **(S)** ☐ **(U)**

Prior to November 15th, if freezing occurs and ground remains unstabilized

Extend winter conditions ☐ **(S)** ☐ **(U)**

11. NYSDEC Green Roof Level 1 Inspection (Annually)

Check condition of vegetation for any developing bare areas

On roof ☐ **(S)** ☐ **(U)**

Check for weeds or moss ☐ **(S)** ☐ **(U)**

Check for ponding between storm events ☐ **(S)** ☐ **(U)**

Check roof drains for clogging or damage ☐ **(S)** ☐ **(U)**

12. NYSDEC Green Roof Level 2 Inspection (Annually)

Remove and replace any plants that are dead ☐ **(S)** ☐ **(U)**

Test the soil media for pH , nutrient levels if vegetation is dying ☐ **(S)** ☐ **(U)**

Remove debris from underdrains if clogged by hand or with hose ☐ **(S)** ☐ **(U)**

Observe any damage to structures, and repair ☐ **(S)** ☐ **(U)**

Observe any leakage on roof ☐ **(S)** ☐ **(U)**

Date of Inspection _____

Comments:

_____
_____
_____
_____
_____

Actions to be Taken:

_____
_____
_____
_____
_____

APPENDIX #4

MAINTENANCE AGREEMENT

STORMWATER MANAGEMENT SYSTEM MAINTENANCE AGREEMENT
Western & Quail Apartments

THIS AGREEMENT ("Agreement") is made and entered into on the ___ day of , 2019 by and between Lofts at Pine Hills LLC with an address at 1 Noble Path, Albany, NY 12205 (hereinafter referred to as the "Facility Owner"), and

CITY OF ALBANY, a municipal corporation with an address at 24 Eagle Street, Albany, New York 12207 (hereinafter referred to as the "City").

WITNESSETH:

WHEREAS, the Facility Owner is the owner of the subject parcel of land in the City of Albany, County of Albany and State of New York as more particularly located at 237 Western Avenue, Albany New York.

WHEREAS, the City and the Facility Owner desire that the stormwater management system be built in accordance with the approved project documents and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components; and

WHEREAS, the City has requested this legally binding and enforceable maintenance agreement from the Facility Owner; and

WHEREAS, the Facility Owner is representing the following design documents, with their City approved revisions, as containing all necessary information to construct, operate and maintain the stormwater management system for the lifetime of the facility:

a. Plan set submitted to the City representing a stormwater management system including stormwater collection, conveyance and storage using structures designed and specified by Hershberg & Hershberg, Consulting Engineers, sealed by Daniel R. Hershberg, P.E., as the Engineer of Record. The plan sheets showing features associated with the stormwater management system are listed below.

Sheet#	Date	Drawing Title
C-1	1/9/19 Rev. 8/27/21	Existing Conditions
C-2	1/9/19 Rev. 8/27/21	Demolition Plan
C-3	1/9/19 Rev. 8/27/21	Site Plan
C-4	2/26/19 Rev. 8/27/21	Sewer Plan, Profile and Details
C-5	2/26/19 Rev. 8/27/21	Water Plan, Profile and Details
C-6	2/26/19 Rev. 8/27/21	SWPP Plan, Profile and Details
C-7	2/26/19 Rev. 8/27/21	Blue Roof Plan
C-8	2/26/19 Rev. 8/27/21	Erosion and Sediment Control Plan
C-9	2/26/19 Rev. 8/27/21	Erosion and Sediment Control Details
C-11	2/26/19 Rev. 8/27/21	Landscaping
C-12	2/26/19 Rev. 8/27/21	Details
C-13	5/22/19 Rev. 8/27/21	Details
C-14	1/9/19 Rev. 10/20/21	Maintenance and Protection of Traffic
C-15	1/9/19 Rev. 10/20821	Truck Routing Plan

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b. *STORM WATER POLLUTION PREVENTION PLAN (SWPPP) & STORM WATER MANAGEMENT REPORT (SWMR),* Western & Quail Apartments prepared by Hershberg & Hershberg, Consulting Engineers and Land Surveyors, dated February 13, 2019, Revised April 18, 2019, Revised May 22, 2019, Revised September 5, 2019, Revised August 17/ 2021

IN CONSIDERATION THEREOF, the parties agree as follow:

1. The Facility Owner shall be responsible for maintaining the storm water facility in a manner to prevent silt from becoming tributary to the City's storm water drainage system.

2. Operation and maintenance, including inspection and cleaning of the full storm water drainage system, shall be the responsibility of the Facility Owner.

3. In the event the Facility Owner fails to maintain the system in a manner to control storm water the City may order the system cleaned and bill the Facility Owner the full cost of this work at labor cost (direct labor plus 50% salary burden) and materials (at cost) if work is performed by the Department of Water & Water Supply; or the cost of a subcontractor plus 10% of the subcontractor's bill if the Department of Water & Water Supply obtains a subcontractor to perform the work. Invoices are payable to the Department of Water & Water Supply within ten (10) business days from the date of invoice. In the event payment for costs is not received within said ten (10) day period, the Department of Water & Water Supply shall have the right to file a lien in the amount of the invoice, together with reasonable costs of collection incurred in connection therewith, against the property of the Facility Owner.

4. The City has the right to access the premises for periodic inspections and to perform any maintenance of the stormwater system.

5. The Facility Owner shall disclose this Agreement to any successor or assignees in interest.

6. This Agreement is binding on the Facility Owner and any successor or assignees in interest hereof.

7. Facility Owner agrees to defend, indemnify, and save harmless the CITY and its officers, employees and agents, from and against all claims, actions, causes of action, injuries, damages, losses, liabilities, and expenses (including, without limitation, reasonable attorney's fees and court costs) arising out of, or in consequence of, any negligent or intentional act or omission of Facility Owner to the extent of its or their responsibility for such claims, actions, causes of action, injuries, damages, losses, liabilities, and expenses. The provisions of this Article shall survive any termination or expiration of this Agreement.

[Signatures on next page]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed by their duly authorized officers as of the day and year first above written.

CITY OF ALBANY, NEW YORK

BY:_____
KATHY M. SHEEHAN
MAYOR, CITY OF ALBANY

REHABILITATION SUPPORT SERVICES, INC.

BY_____-

STATE OF NEW YORK)
) ss.:
COUNTY OF ALBANY)

On the _ day of_____ , 201_, before me the undersigned, a Notary Public in and for said State, personally appeared _____ , personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public

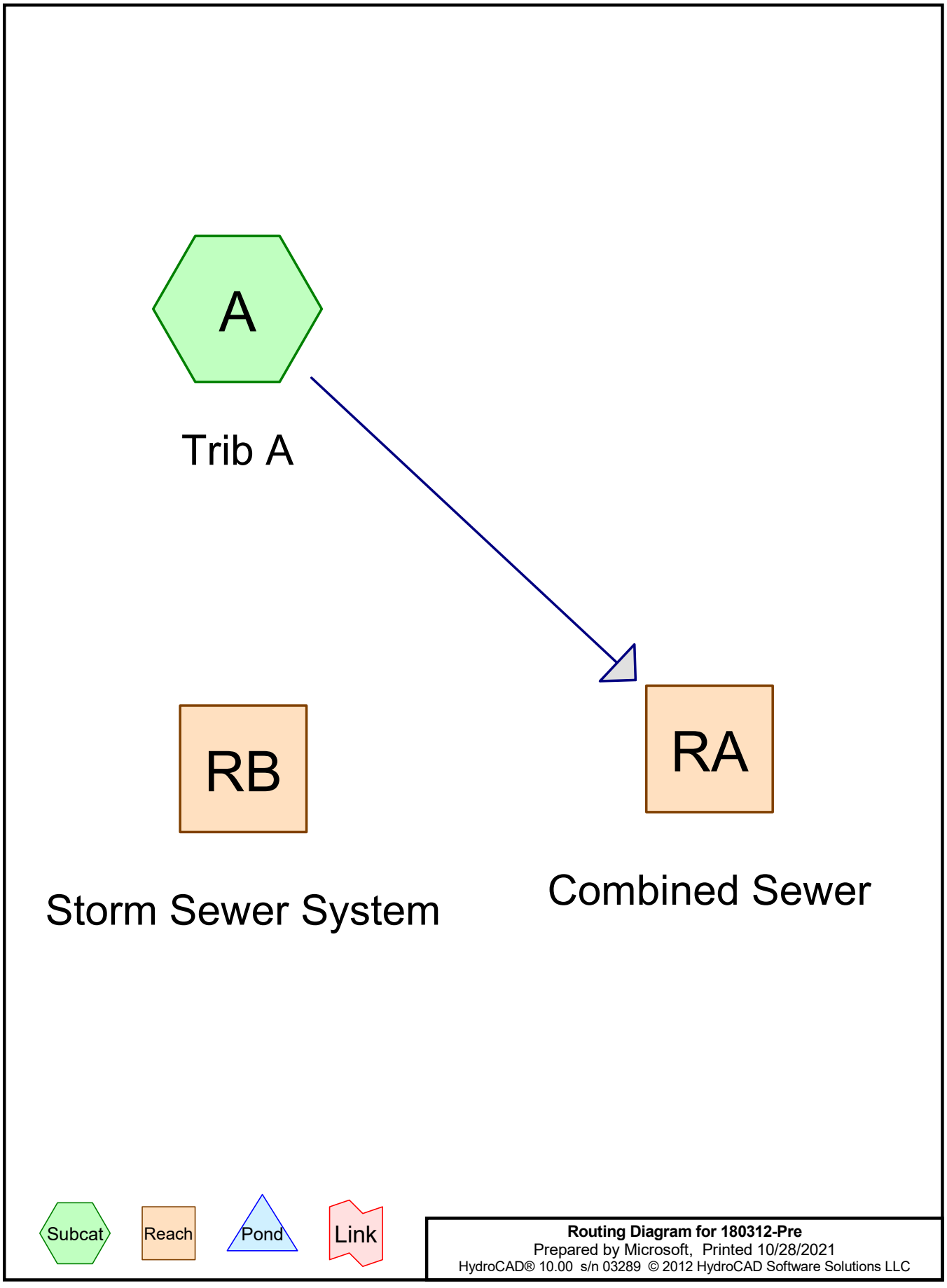
STATE OF NEW YORK)
) ss.:
COUNTY OF_____-)

On the _ day of_____ , 201_, before me the undersigned, a Notary Public in and for said State, personally appeared _____ , personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public

APPENDIX #5

HYDROCAD® 10.00 CALCULATIONS



Routing Diagram for 180312-Pre
Prepared by Microsoft, Printed 10/28/2021

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.252	74	>75% Grass cover, Good, HSG C (A)
2.252	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.252	HSG C	A
0.000	HSG D	
0.000	Other	
2.252		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	2.252	0.000	0.000	2.252	>75% Grass cover, Good	A
0.000	**0.000**	**2.252**	**0.000**	**0.000**	**2.252**	**TOTAL AREA**	

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

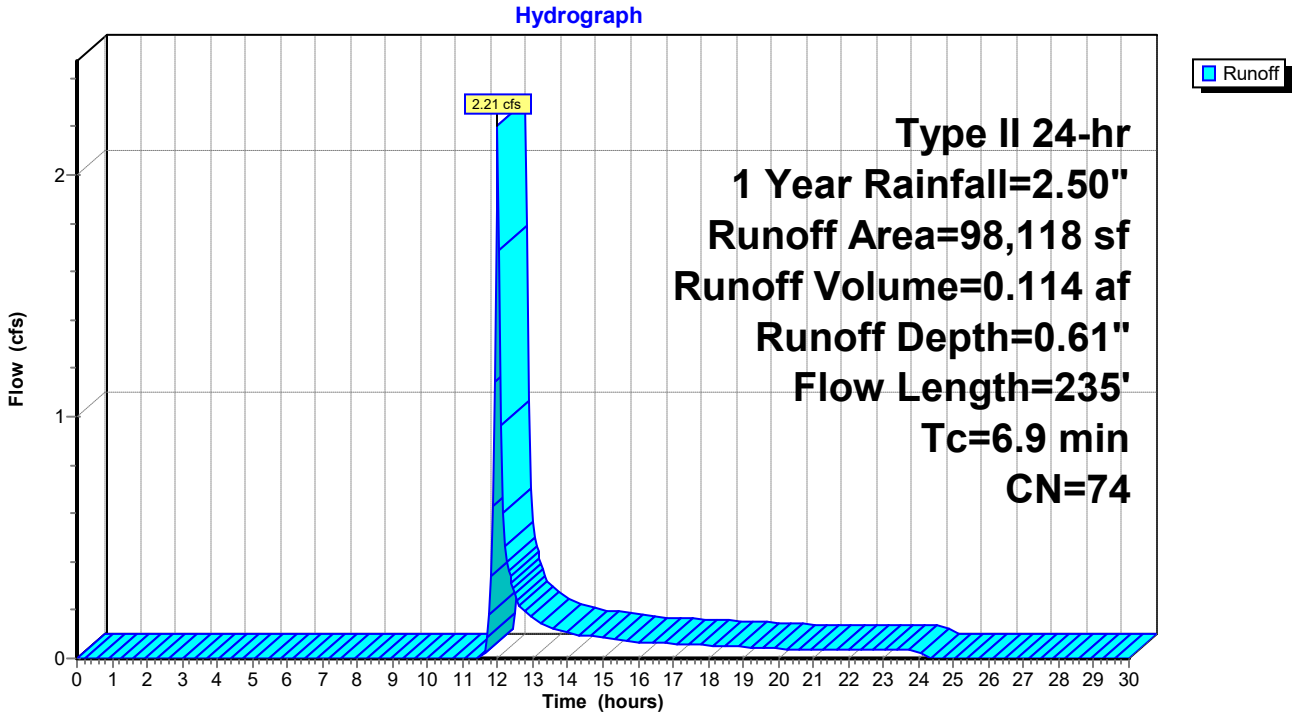
Subcatchment A: Trib A Runoff Area=98,118 sf 0.00% Impervious Runoff Depth=0.61"
Flow Length=235' Tc=6.9 min CN=74 Runoff=2.21 cfs 0.114 af

Reach RA: Combined Sewer Inflow=2.21 cfs 0.114 af
Outflow=2.21 cfs 0.114 af

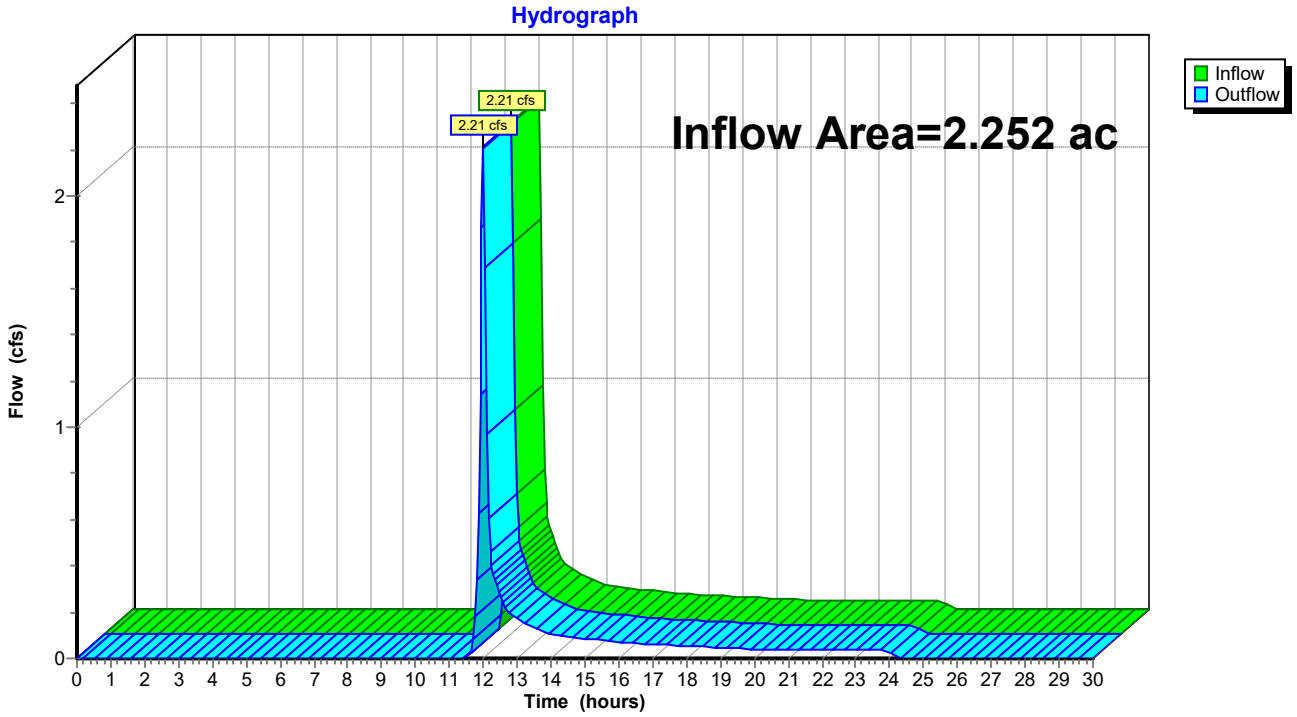
Reach RB: Storm Sewer System

Total Runoff Area = 2.252 ac Runoff Volume = 0.114 af Average Runoff Depth = 0.61"
100.00% Pervious = 2.252 ac 0.00% Impervious = 0.000 ac

Subcatchment A: Trib A



Reach RA: Combined Sewer



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

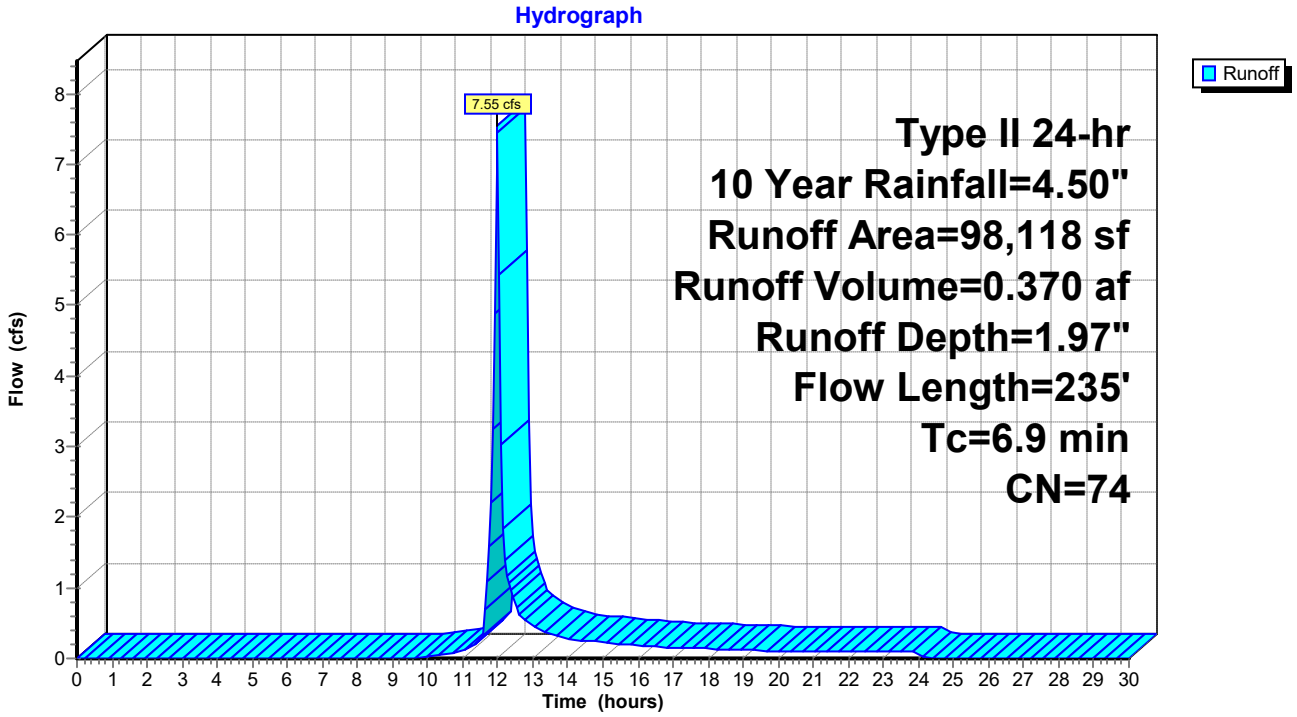
Subcatchment A: Trib A Runoff Area=98,118 sf 0.00% Impervious Runoff Depth=1.97"
Flow Length=235' Tc=6.9 min CN=74 Runoff=7.55 cfs 0.370 af

Reach RA: Combined Sewer Inflow=7.55 cfs 0.370 af
Outflow=7.55 cfs 0.370 af

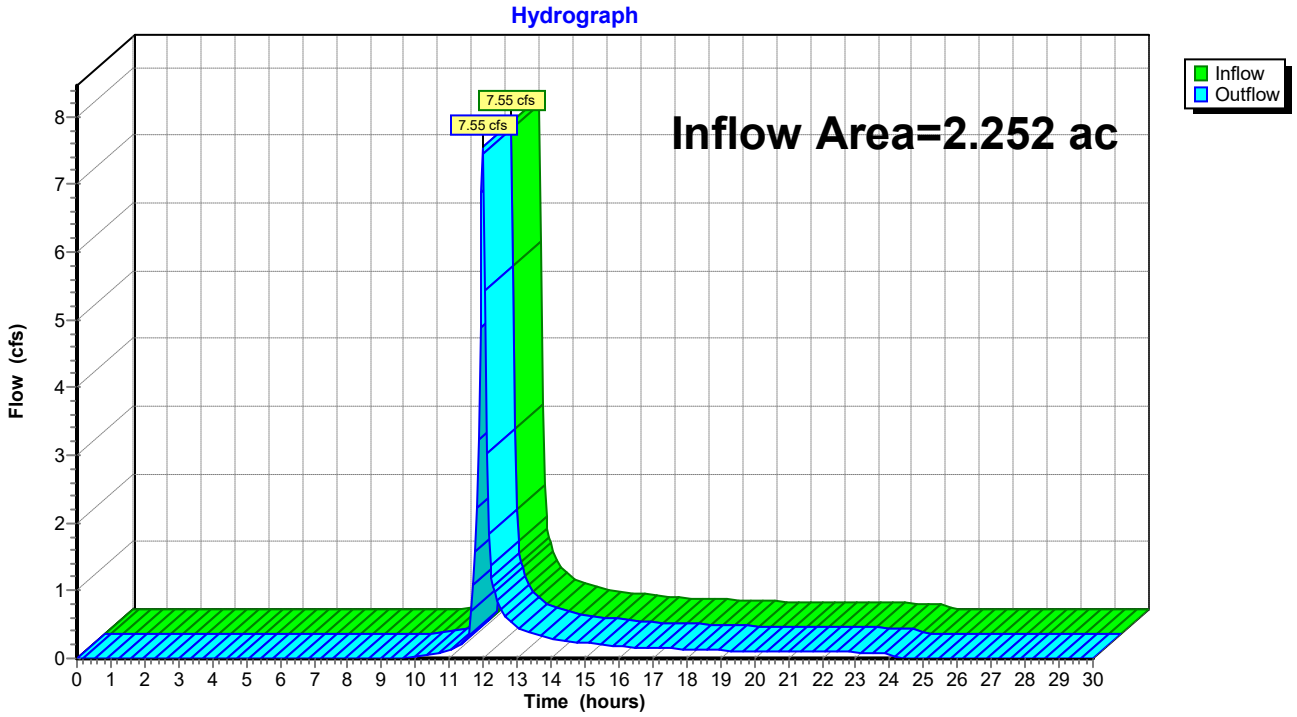
Reach RB: Storm Sewer System

Total Runoff Area = 2.252 ac Runoff Volume = 0.370 af Average Runoff Depth = 1.97"
100.00% Pervious = 2.252 ac 0.00% Impervious = 0.000 ac

Subcatchment A: Trib A



Reach RA: Combined Sewer



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

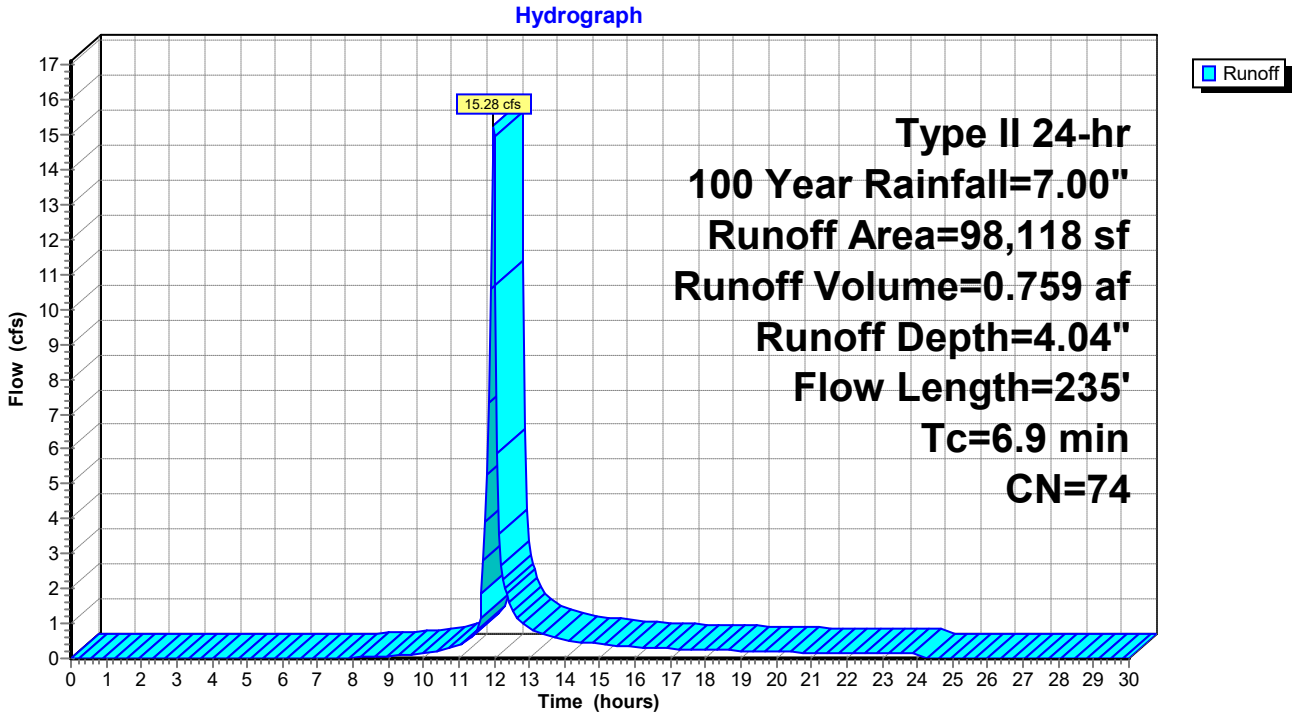
Subcatchment A: Trib A Runoff Area=98,118 sf 0.00% Impervious Runoff Depth=4.04"
Flow Length=235' Tc=6.9 min CN=74 Runoff=15.28 cfs 0.759 af

Reach RA: Combined Sewer Inflow=15.28 cfs 0.759 af
Outflow=15.28 cfs 0.759 af

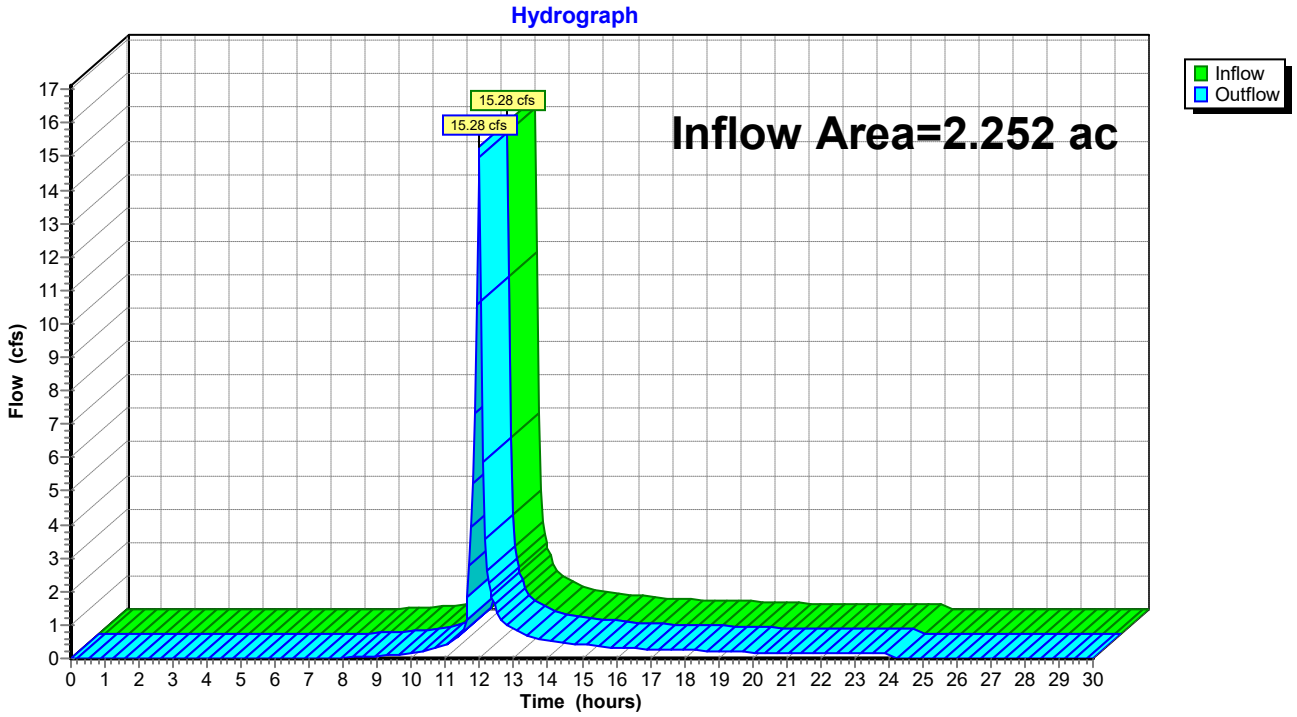
Reach RB: Storm Sewer System

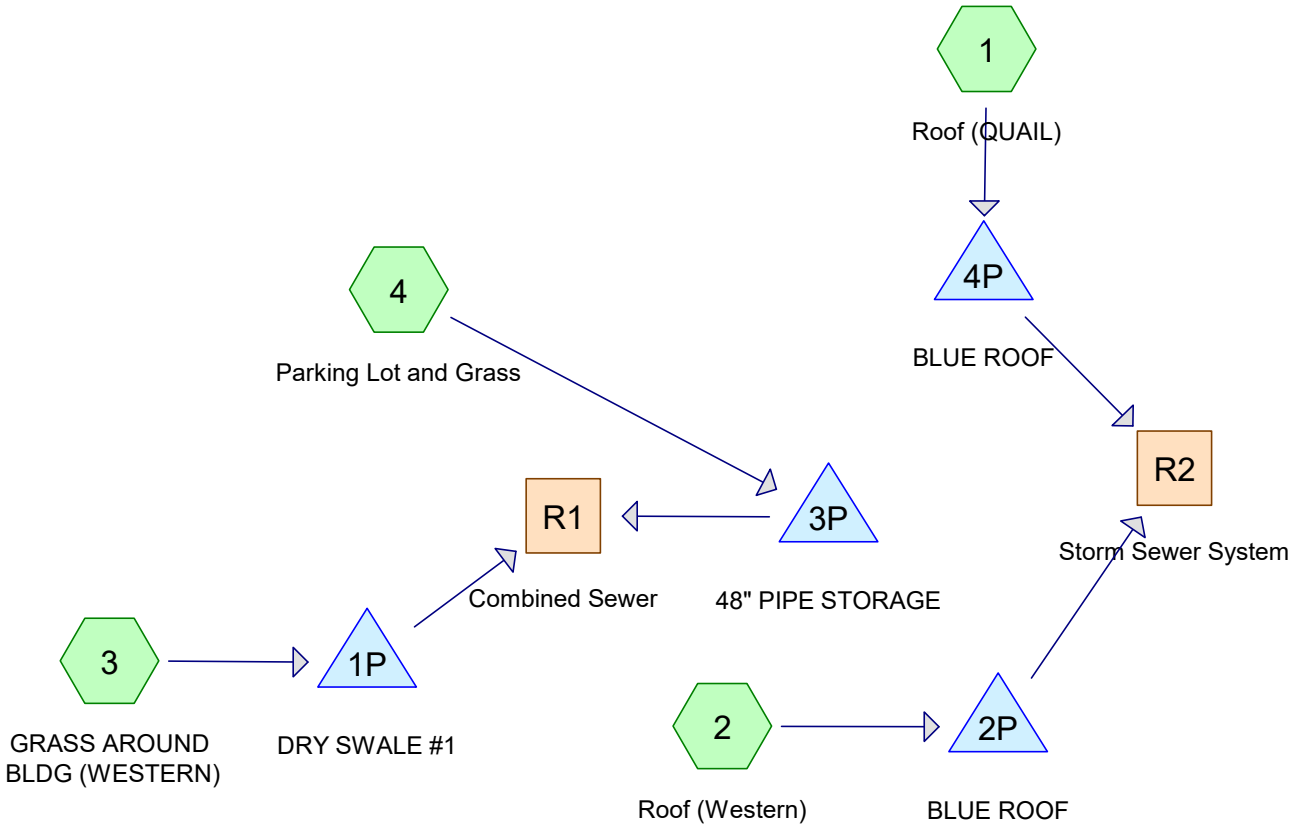
Total Runoff Area = 2.252 ac Runoff Volume = 0.759 af Average Runoff Depth = 4.04"
100.00% Pervious = 2.252 ac 0.00% Impervious = 0.000 ac

Subcatchment A: Trib A



Reach RA: Combined Sewer





Subcat Reach Pond Link

Routing Diagram for 180312-Post2
Prepared by Microsoft, Printed 10/28/2021

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.235	74	>75% Grass cover, Good, HSG C (3, 4)
0.504	98	Paved parking, HSG C (3, 4)
0.303	98	Roofs, HSG C (1)
0.211	98	Unconnected roofs, HSG D (2)
2.252	**85**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.041	HSG C	1, 3, 4
0.211	HSG D	2
0.000	Other	
2.252		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.235	0.000	0.000	1.235	>75% Grass cover, Good	3, 4
0.000	0.000	0.504	0.000	0.000	0.504	Paved parking	3, 4
0.000	0.000	0.303	0.000	0.000	0.303	Roofs	1
0.000	0.000	0.000	0.211	0.000	0.211	Unconnected roofs	2
0.000	**0.000**	**2.041**	**0.211**	**0.000**	**2.252**	**TOTAL AREA**	

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Roof (QUAIL) Runoff Area=13,180 sf 100.00% Impervious Runoff Depth=2.27"
Flow Length=50' Slope=0.0050 '/' Tc=1.3 min CN=98 Runoff=1.16 cfs 0.057 af

Subcatchment 2: Roof (Western) Runoff Area=9,205 sf 100.00% Impervious Runoff Depth=2.27"
Flow Length=64' Slope=0.0050 '/' Tc=1.6 min CN=98 Runoff=0.80 cfs 0.040 af

Subcatchment 3: GRASS AROUND BLDG Runoff Area=4,300 sf 4.65% Impervious Runoff Depth=0.65"
Flow Length=129' Slope=0.0050 '/' Tc=2.9 min CN=75 Runoff=0.12 cfs 0.005 af

Subcatchment 4: Parking Lot and Grass Runoff Area=71,433 sf 30.43% Impervious Runoff Depth=0.94"
Flow Length=193' Slope=0.0500 '/' Tc=1.2 min CN=81 Runoff=3.06 cfs 0.129 af

Reach R1: Combined Sewer Inflow=2.04 cfs 0.132 af
Outflow=2.04 cfs 0.132 af

Reach R2: Storm Sewer System Inflow=0.02 cfs 0.025 af
Outflow=0.02 cfs 0.025 af

Pond 1P: DRY SWALE #1 Peak Elev=198.68' Storage=74 cf Inflow=0.12 cfs 0.005 af
Outflow=0.03 cfs 0.004 af

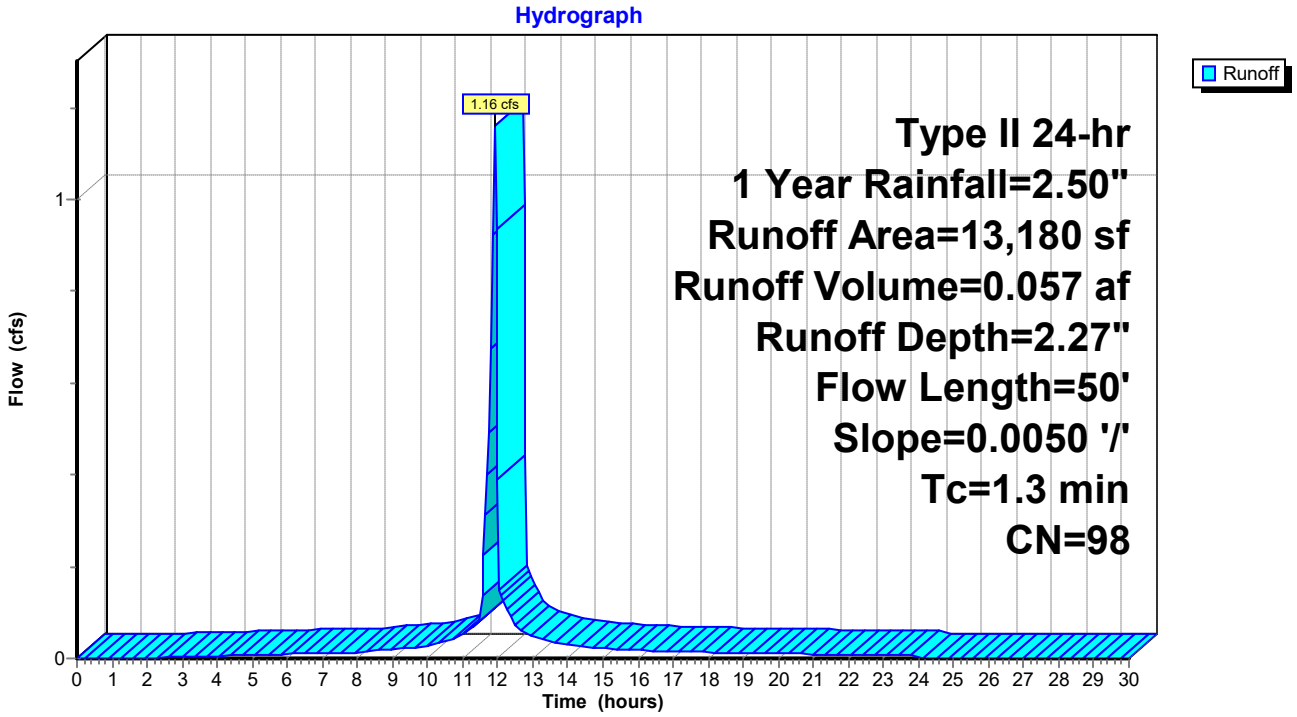
Pond 2P: BLUE ROOF Peak Elev=253.13' Storage=1,211 cf Inflow=0.80 cfs 0.040 af
Outflow=0.02 cfs 0.025 af

Pond 3P: 48" PIPE STORAGE Peak Elev=194.05' Storage=0.026 af Inflow=3.06 cfs 0.129 af
Outflow=2.03 cfs 0.128 af

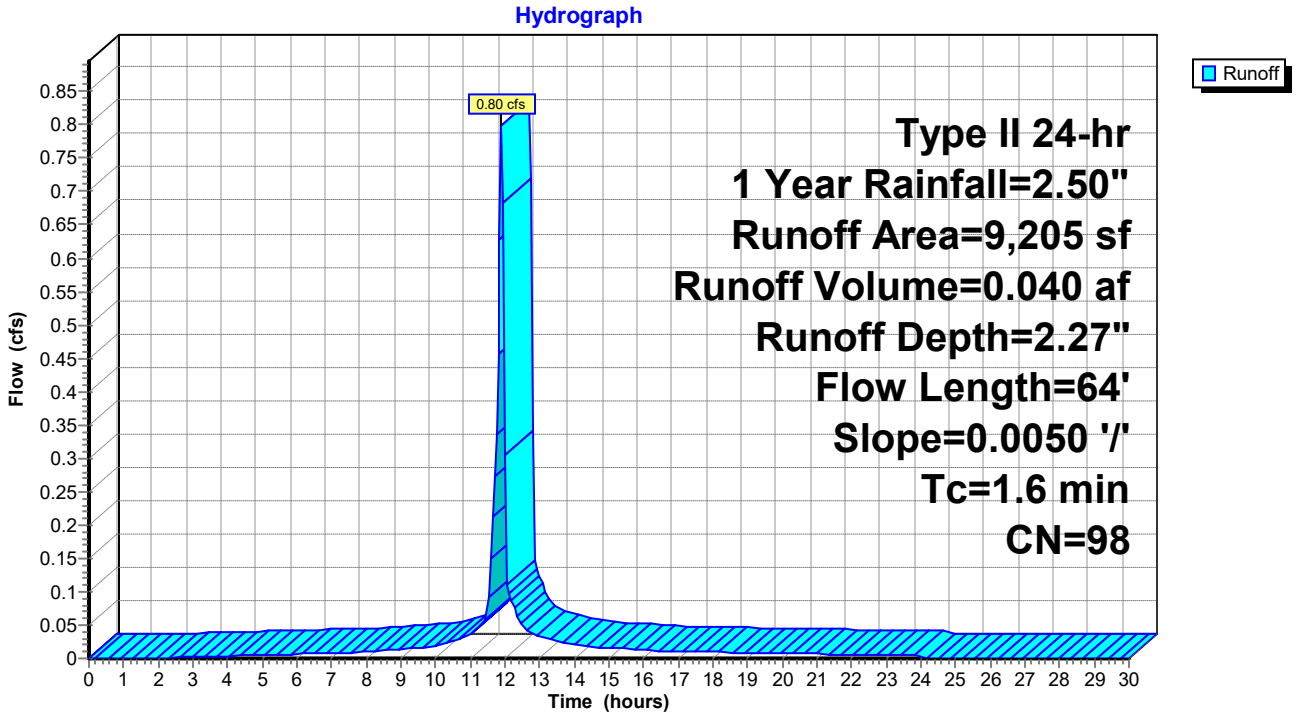
Pond 4P: BLUE ROOF Peak Elev=253.19' Storage=2,494 cf Inflow=1.16 cfs 0.057 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 2.252 ac Runoff Volume = 0.231 af Average Runoff Depth = 1.23"
54.83% Pervious = 1.235 ac 45.17% Impervious = 1.018 ac

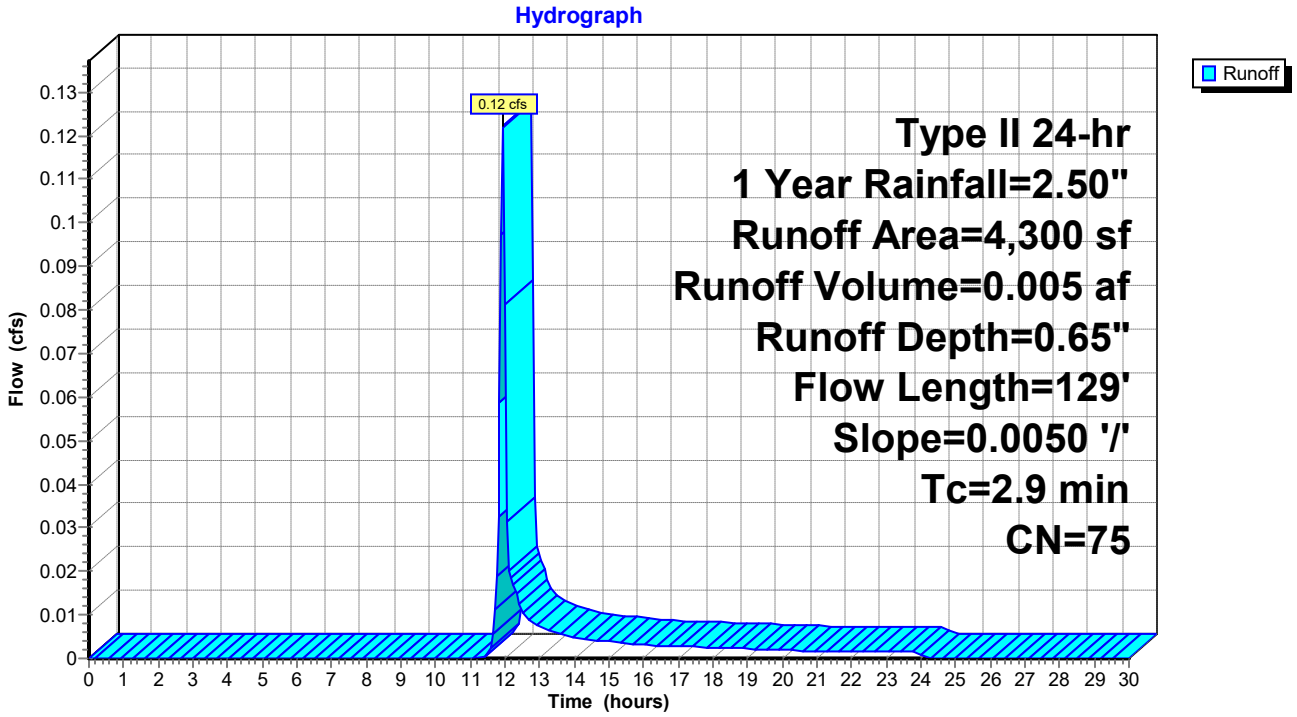
Subcatchment 1: Roof (QUAIL)



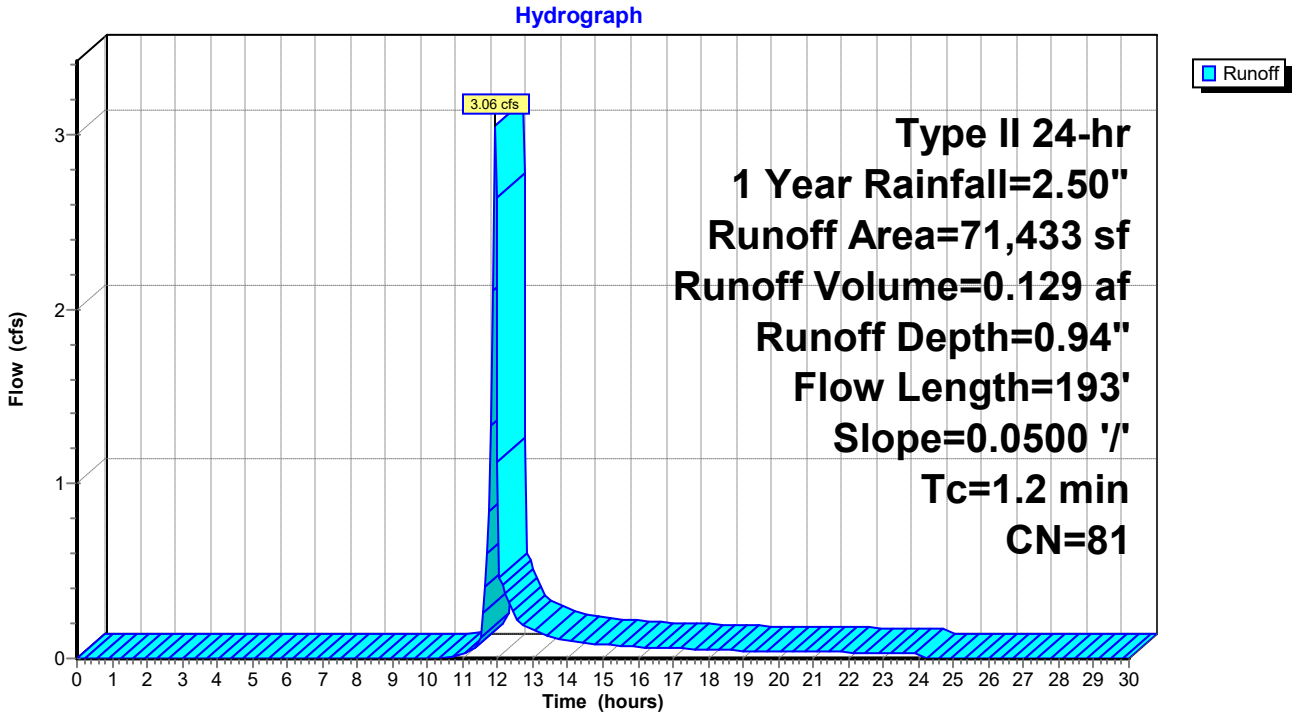
Subcatchment 2: Roof (Western)



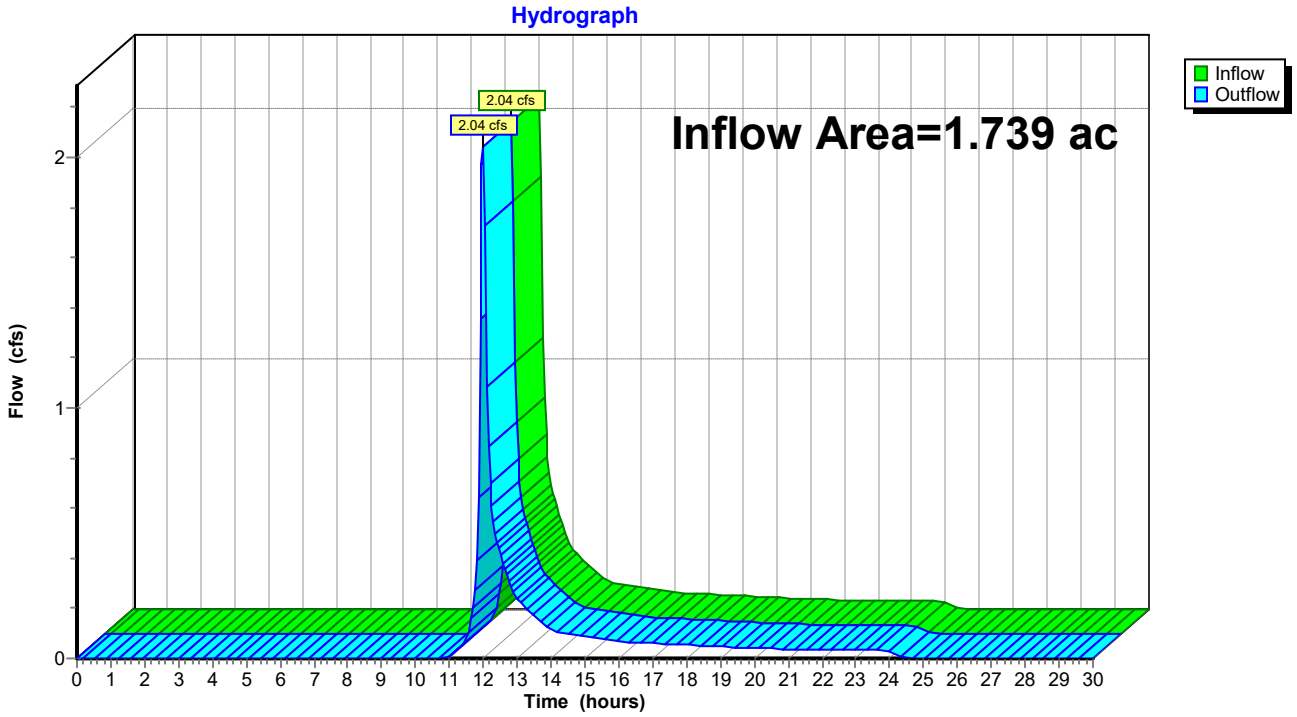
Subcatchment 3: GRASS AROUND BLDG (WESTERN)



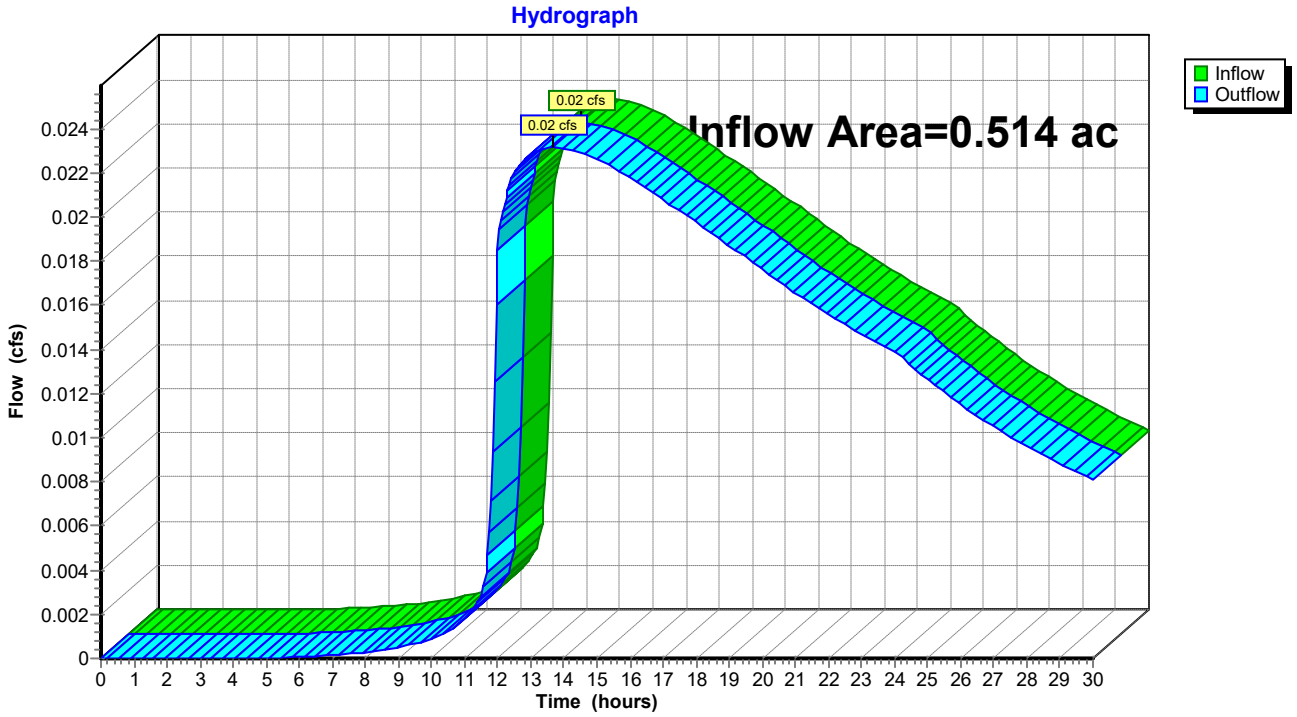
Subcatchment 4: Parking Lot and Grass



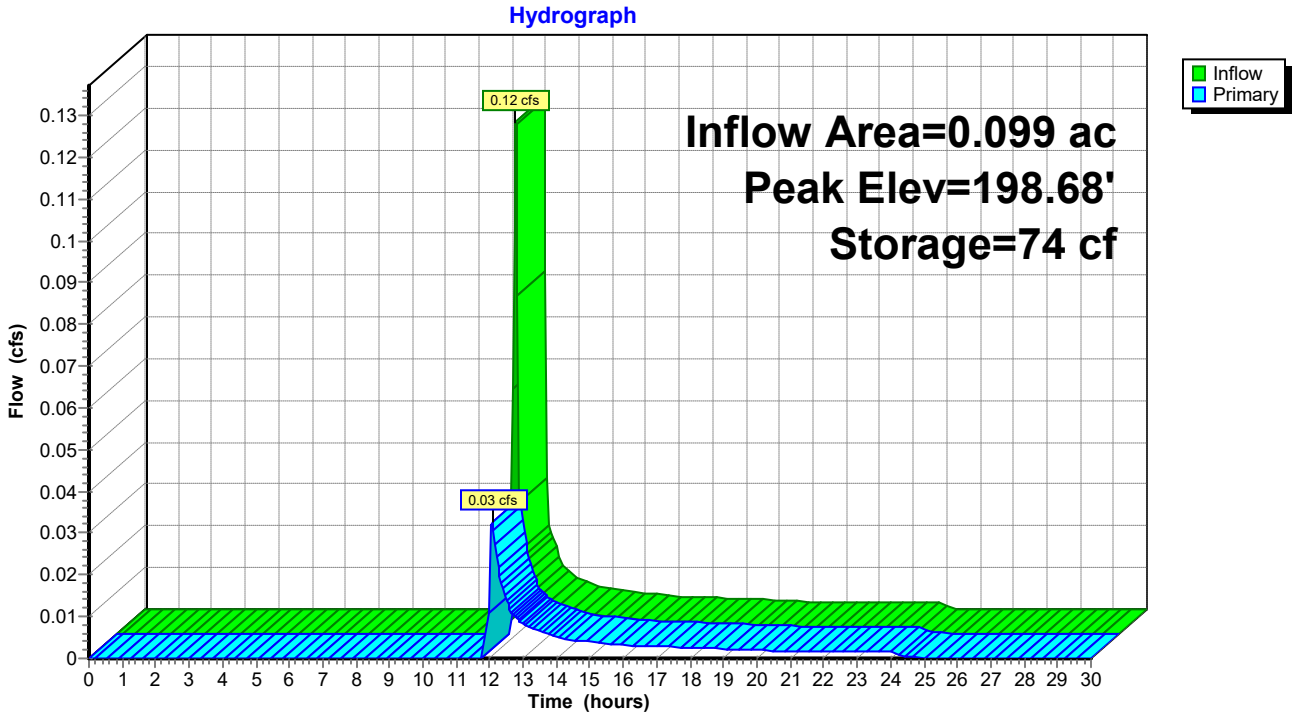
Reach R1: Combined Sewer



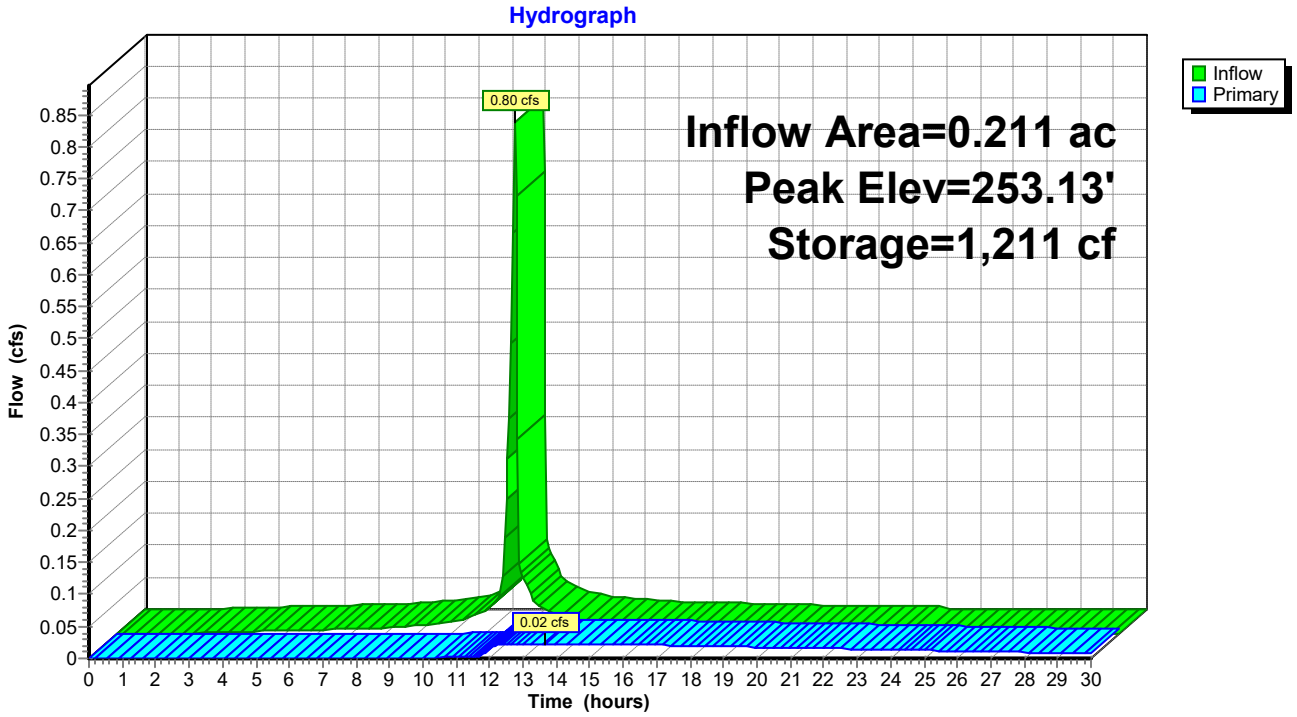
Reach R2: Storm Sewer System



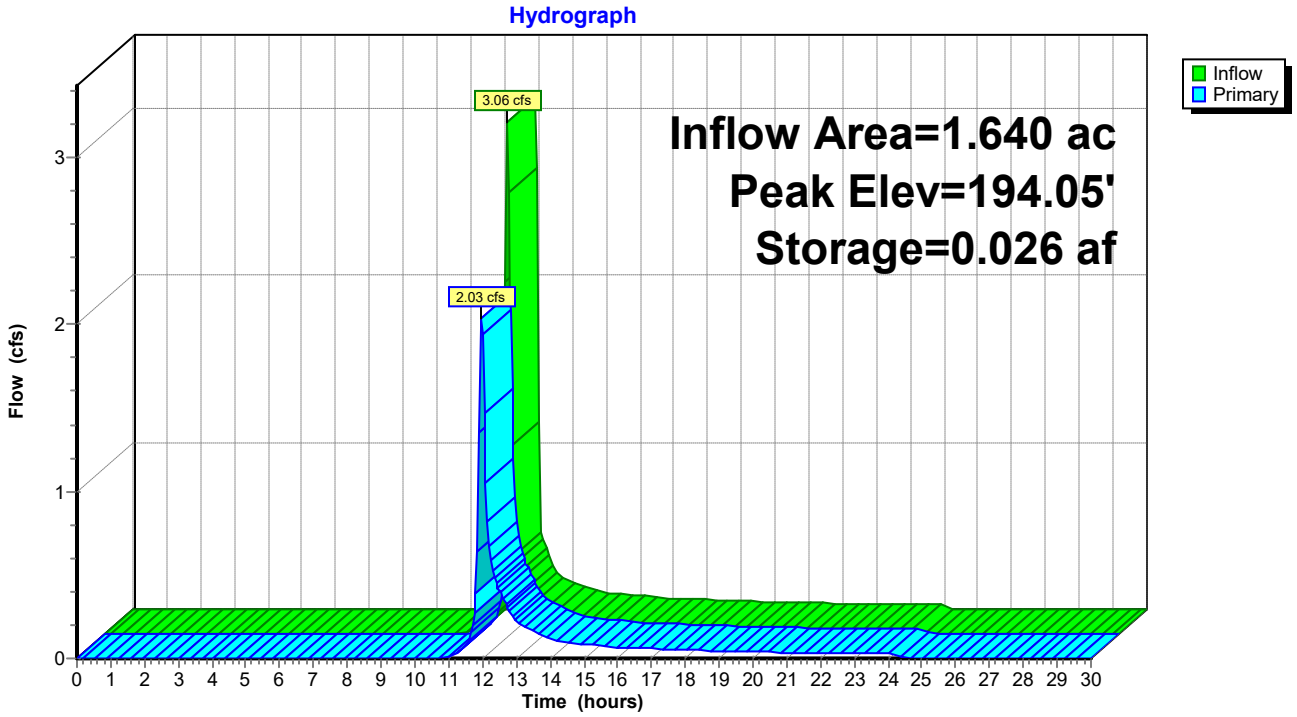
Pond 1P: DRY SWALE #1



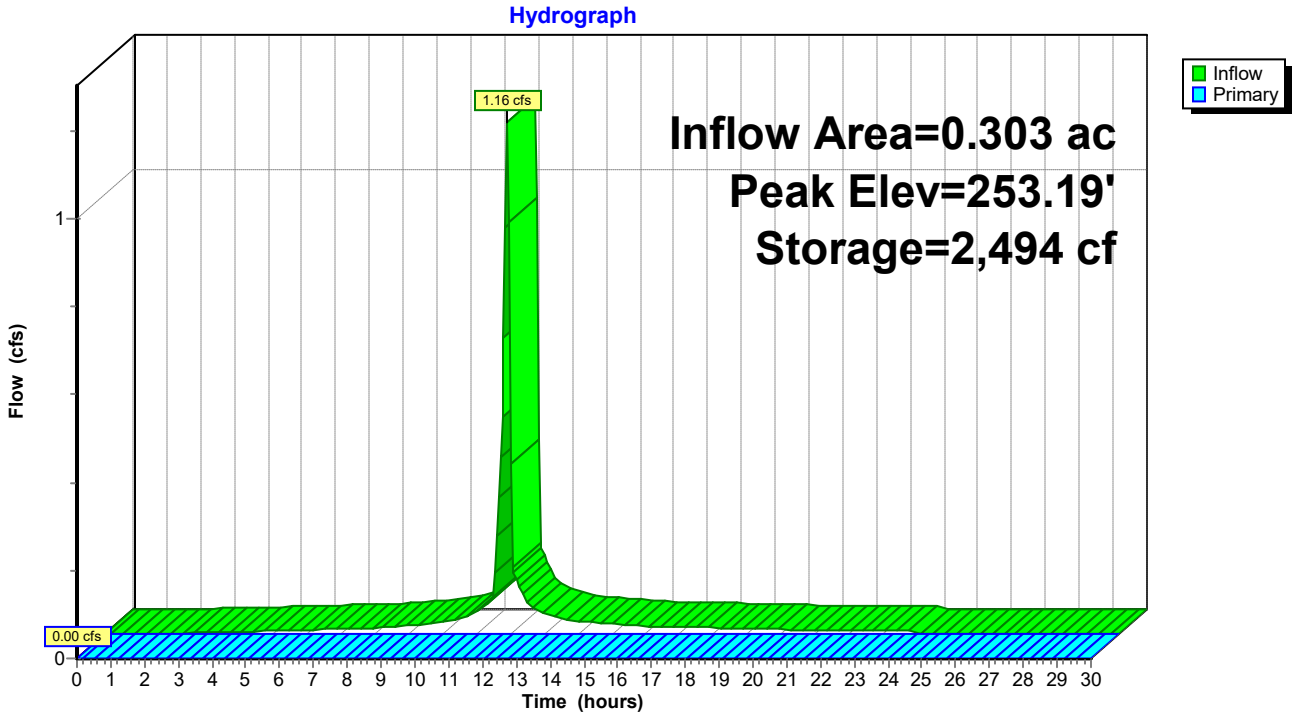
Pond 2P: BLUE ROOF



Pond 3P: 48" PIPE STORAGE



Pond 4P: BLUE ROOF



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Roof (QUAIL) Runoff Area=13,180 sf 100.00% Impervious Runoff Depth=4.26"
Flow Length=50' Slope=0.0050 '/' Tc=1.3 min CN=98 Runoff=2.12 cfs 0.108 af

Subcatchment 2: Roof (Western) Runoff Area=9,205 sf 100.00% Impervious Runoff Depth=4.26"
Flow Length=64' Slope=0.0050 '/' Tc=1.6 min CN=98 Runoff=1.46 cfs 0.075 af

Subcatchment 3: GRASS AROUND BLDG Runoff Area=4,300 sf 4.65% Impervious Runoff Depth=2.05"
Flow Length=129' Slope=0.0050 '/' Tc=2.9 min CN=75 Runoff=0.39 cfs 0.017 af

Subcatchment 4: Parking Lot and Grass Runoff Area=71,433 sf 30.43% Impervious Runoff Depth=2.55"
Flow Length=193' Slope=0.0500 '/' Tc=1.2 min CN=81 Runoff=8.16 cfs 0.348 af

Reach R1: Combined Sewer Inflow=4.70 cfs 0.363 af
Outflow=4.70 cfs 0.363 af

Reach R2: Storm Sewer System Inflow=0.04 cfs 0.055 af
Outflow=0.04 cfs 0.055 af

Pond 1P: DRY SWALE #1 Peak Elev=200.07' Storage=238 cf Inflow=0.39 cfs 0.017 af
Outflow=0.13 cfs 0.016 af

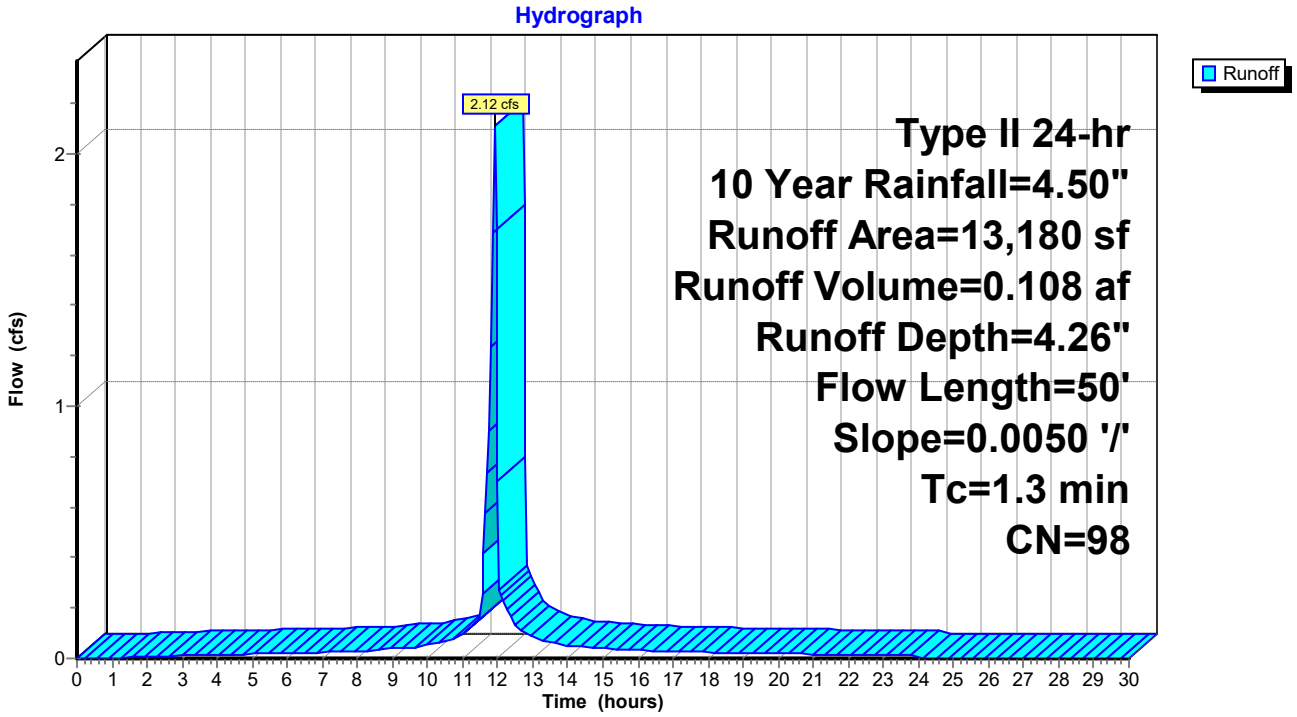
Pond 2P: BLUE ROOF Peak Elev=253.25' Storage=2,253 cf Inflow=1.46 cfs 0.075 af
Outflow=0.04 cfs 0.052 af

Pond 3P: 48" PIPE STORAGE Peak Elev=195.14' Storage=0.068 af Inflow=8.16 cfs 0.348 af
Outflow=4.58 cfs 0.348 af

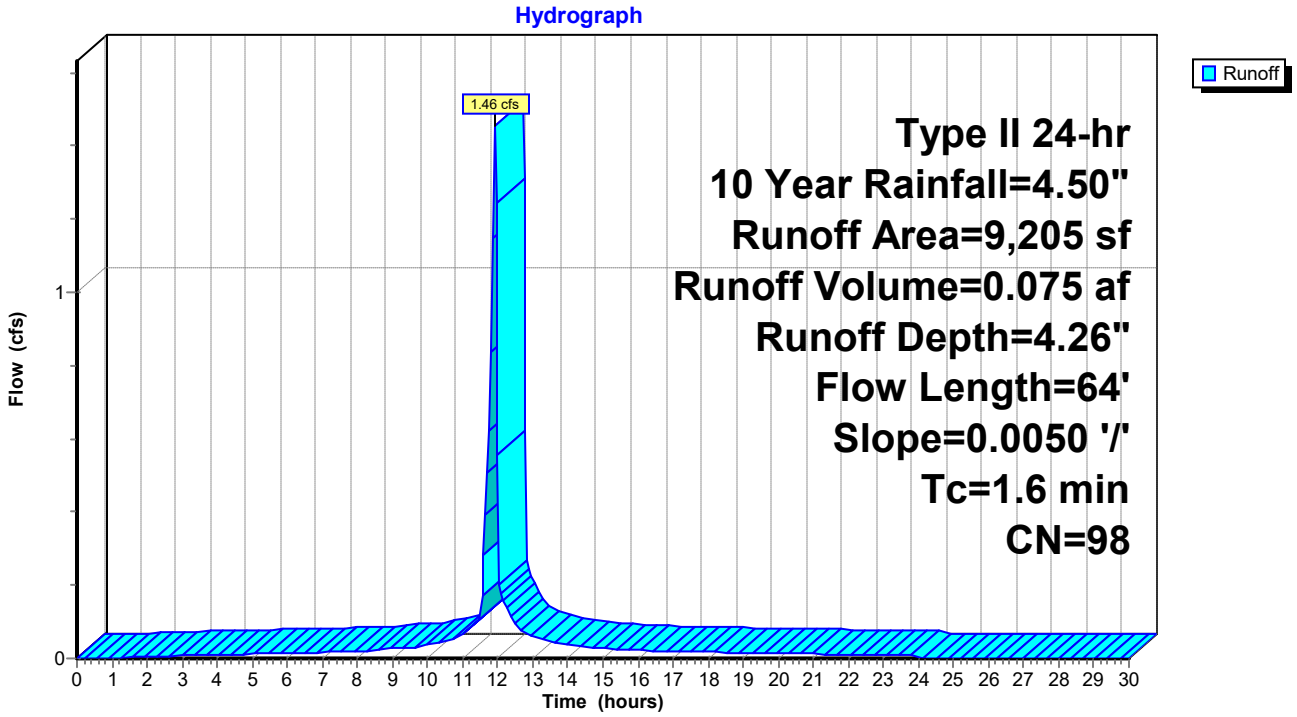
Pond 4P: BLUE ROOF Peak Elev=253.35' Storage=4,618 cf Inflow=2.12 cfs 0.108 af
Outflow=0.00 cfs 0.003 af

Total Runoff Area = 2.252 ac Runoff Volume = 0.548 af Average Runoff Depth = 2.92"
54.83% Pervious = 1.235 ac 45.17% Impervious = 1.018 ac

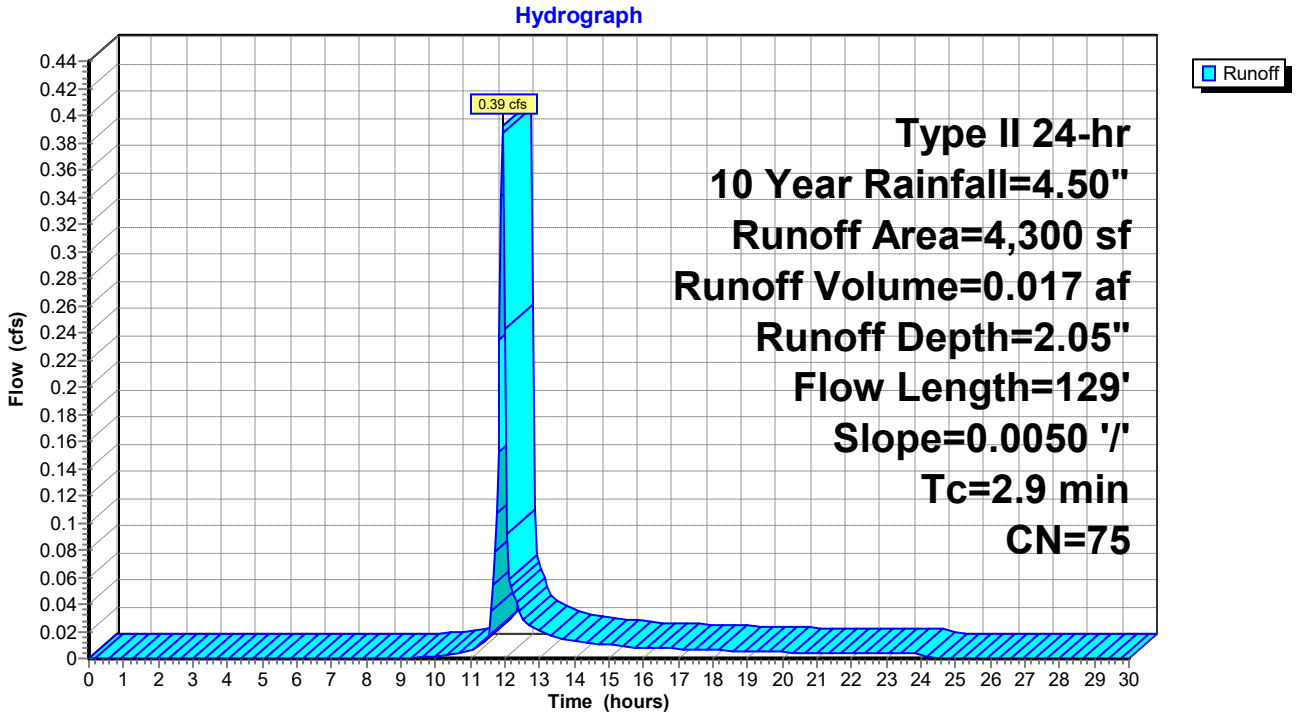
Subcatchment 1: Roof (QUAIL)



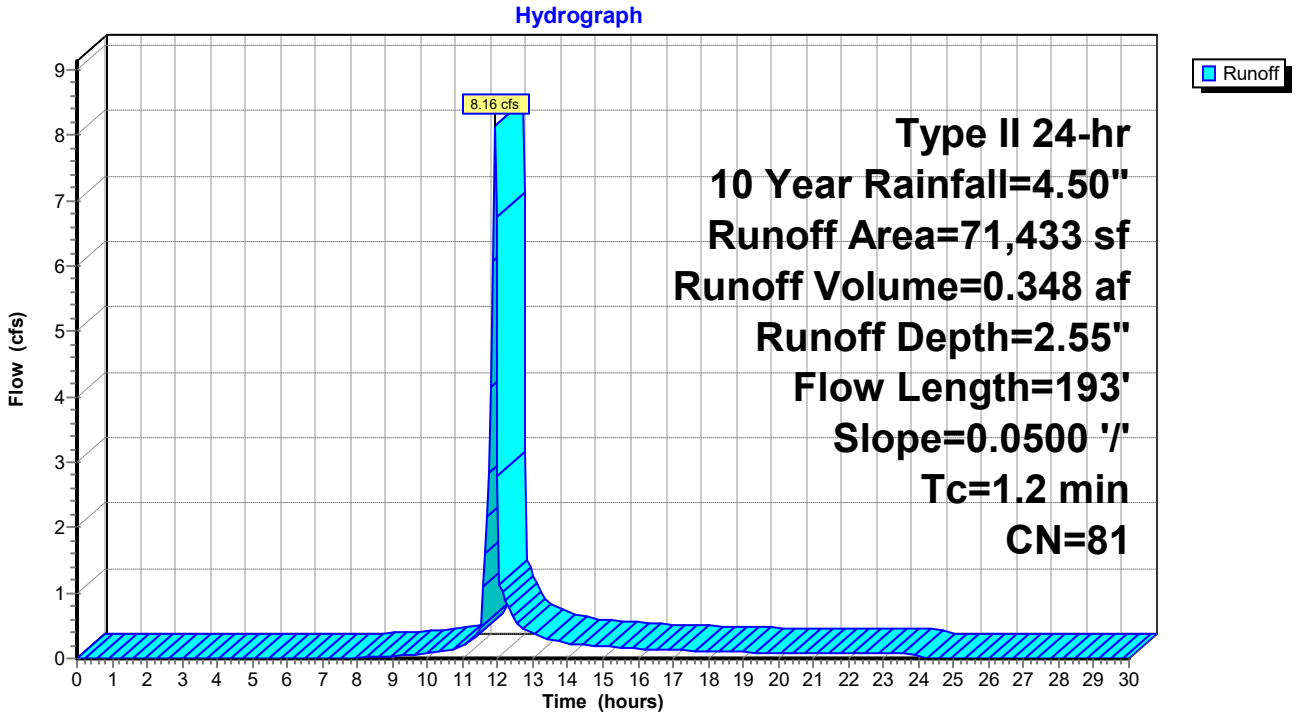
Subcatchment 2: Roof (Western)



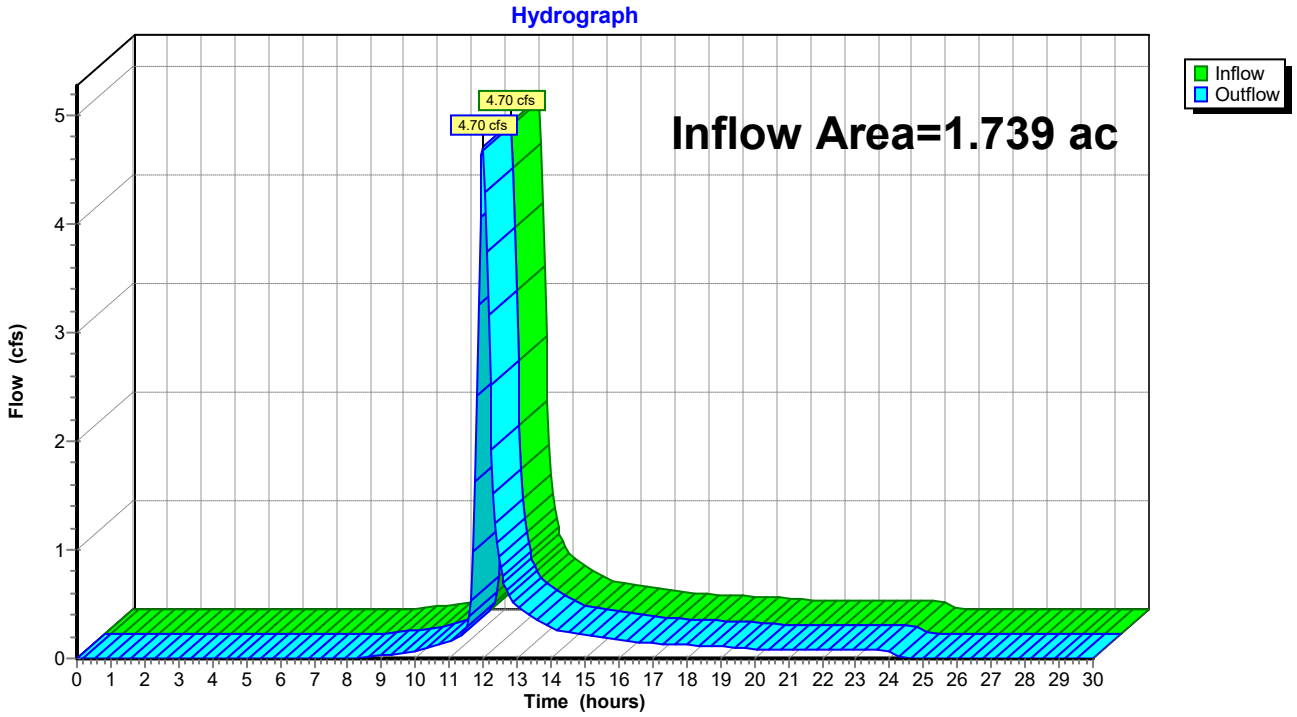
Subcatchment 3: GRASS AROUND BLDG (WESTERN)



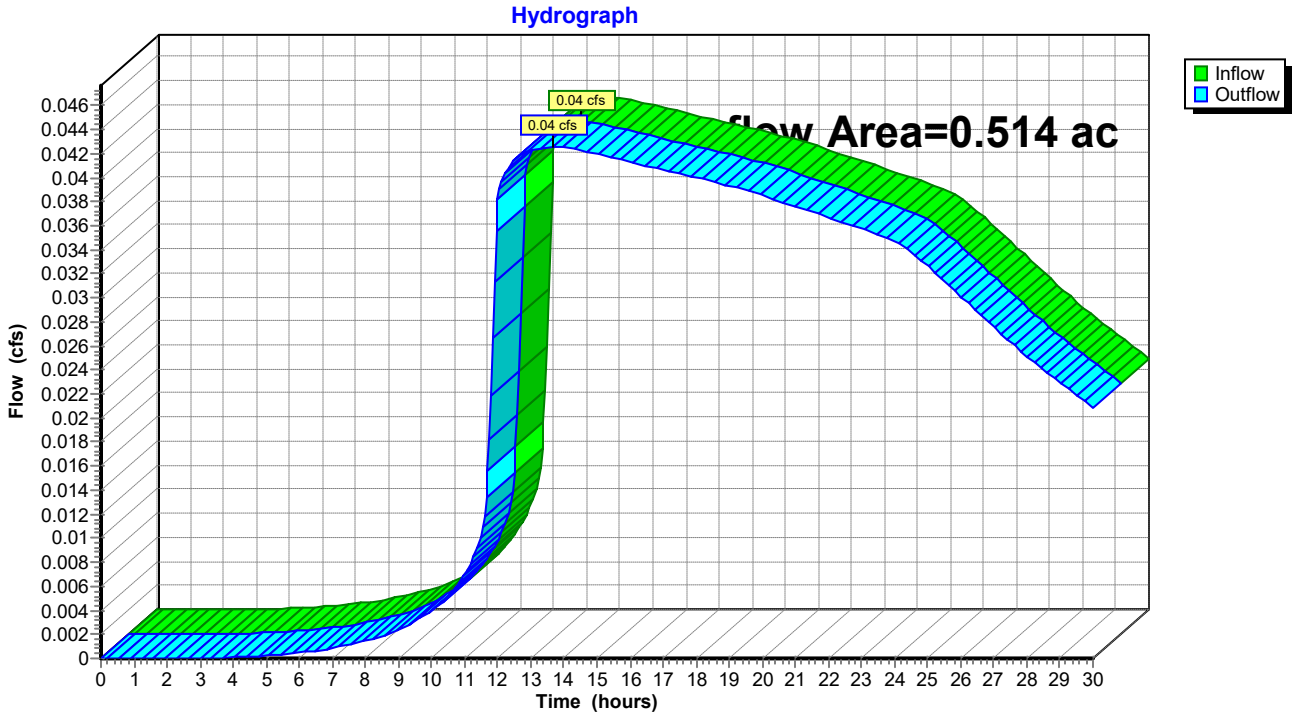
Subcatchment 4: Parking Lot and Grass



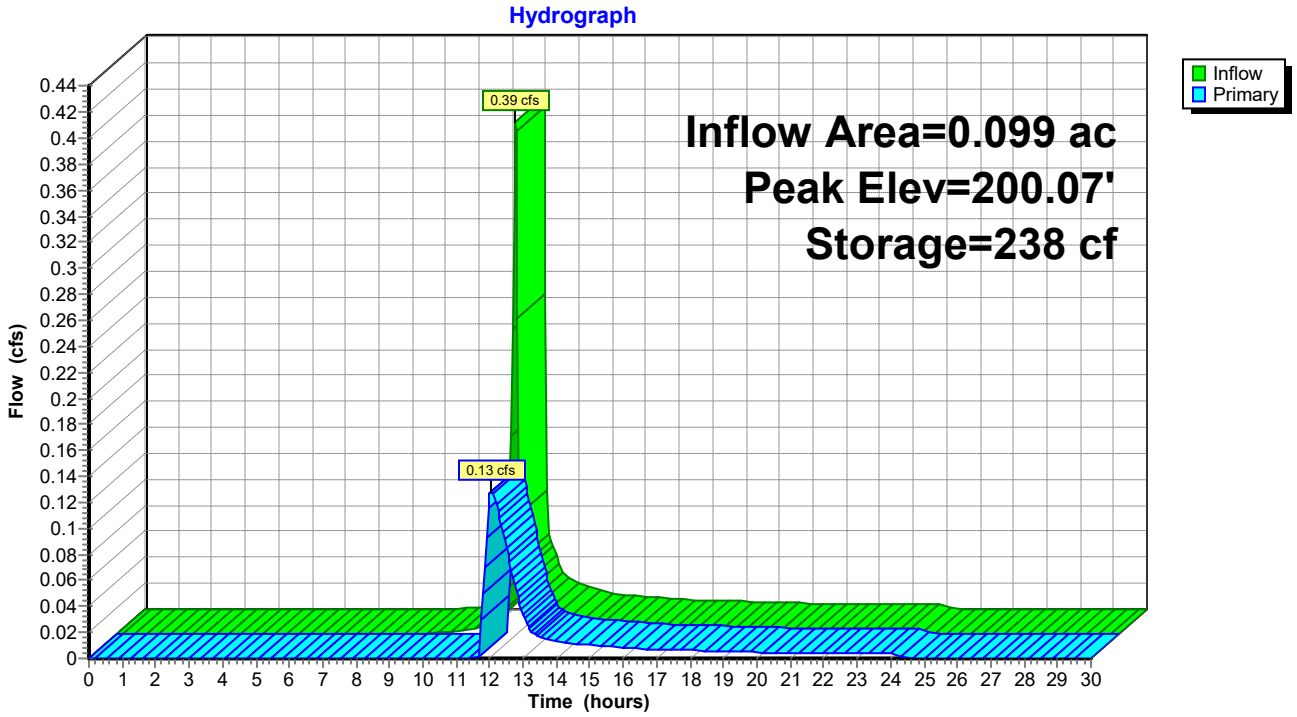
Reach R1: Combined Sewer



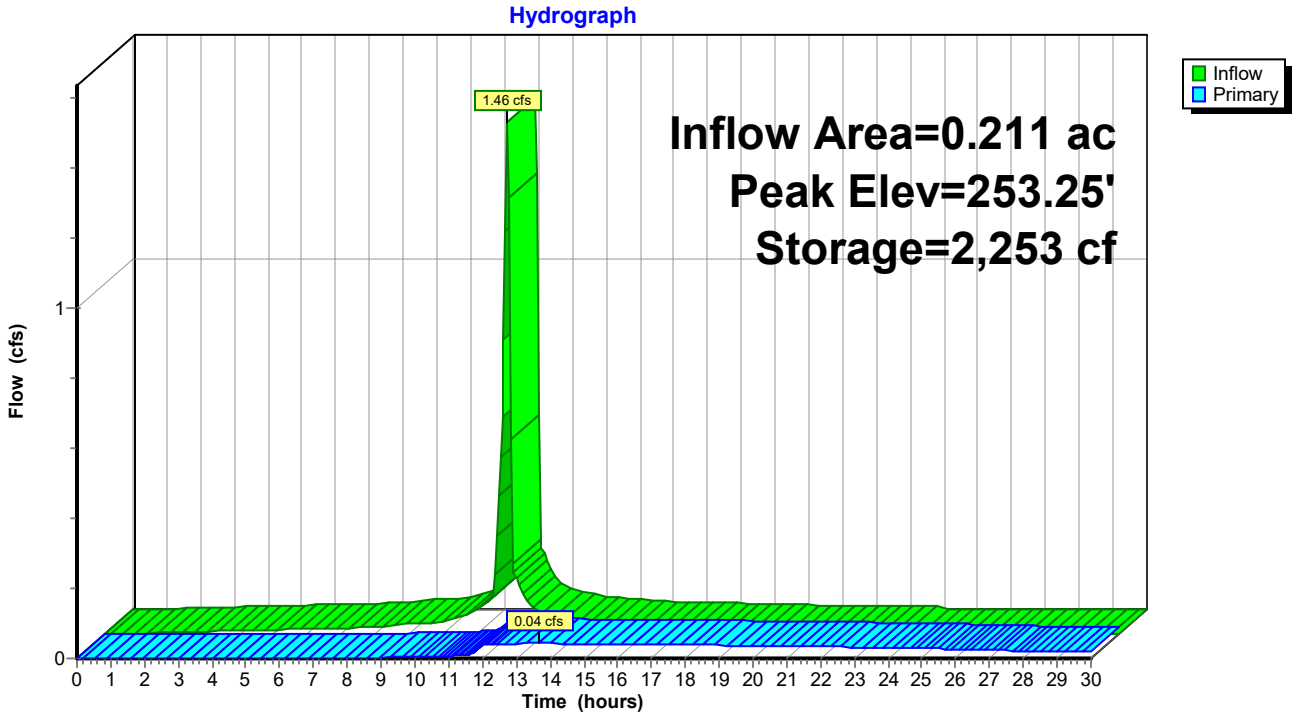
Reach R2: Storm Sewer System



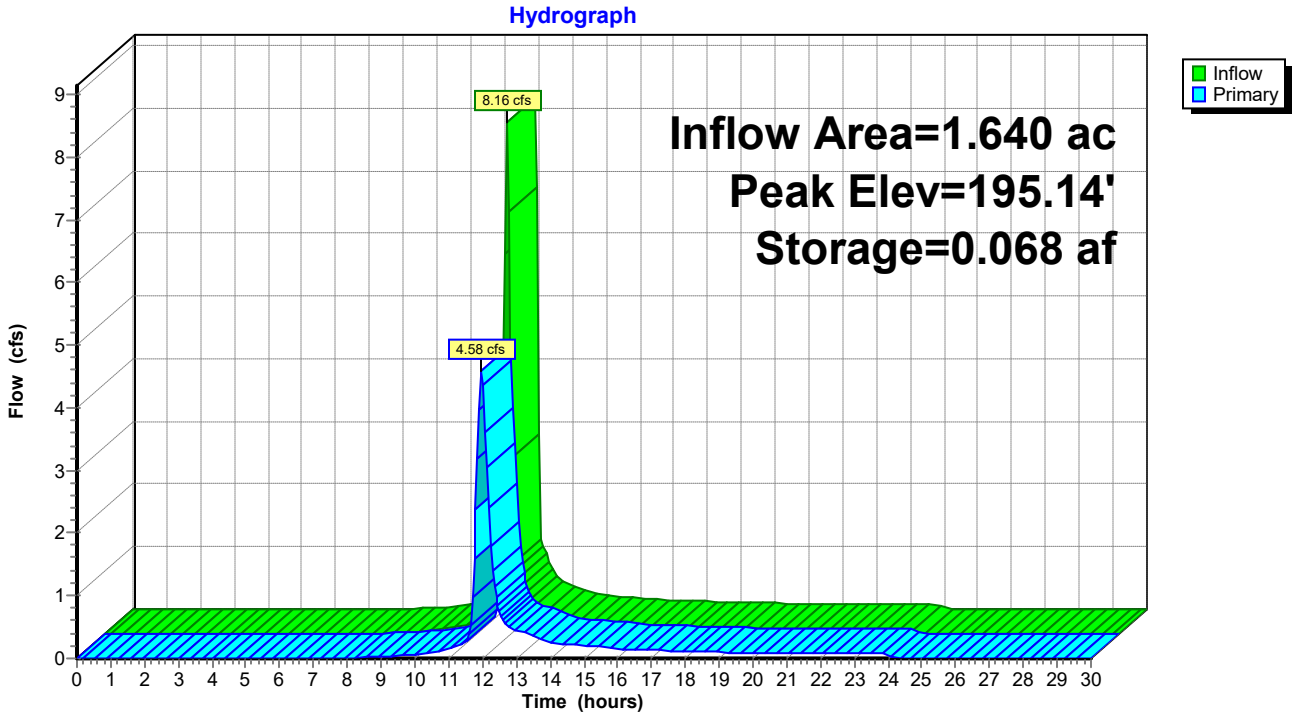
Pond 1P: DRY SWALE #1



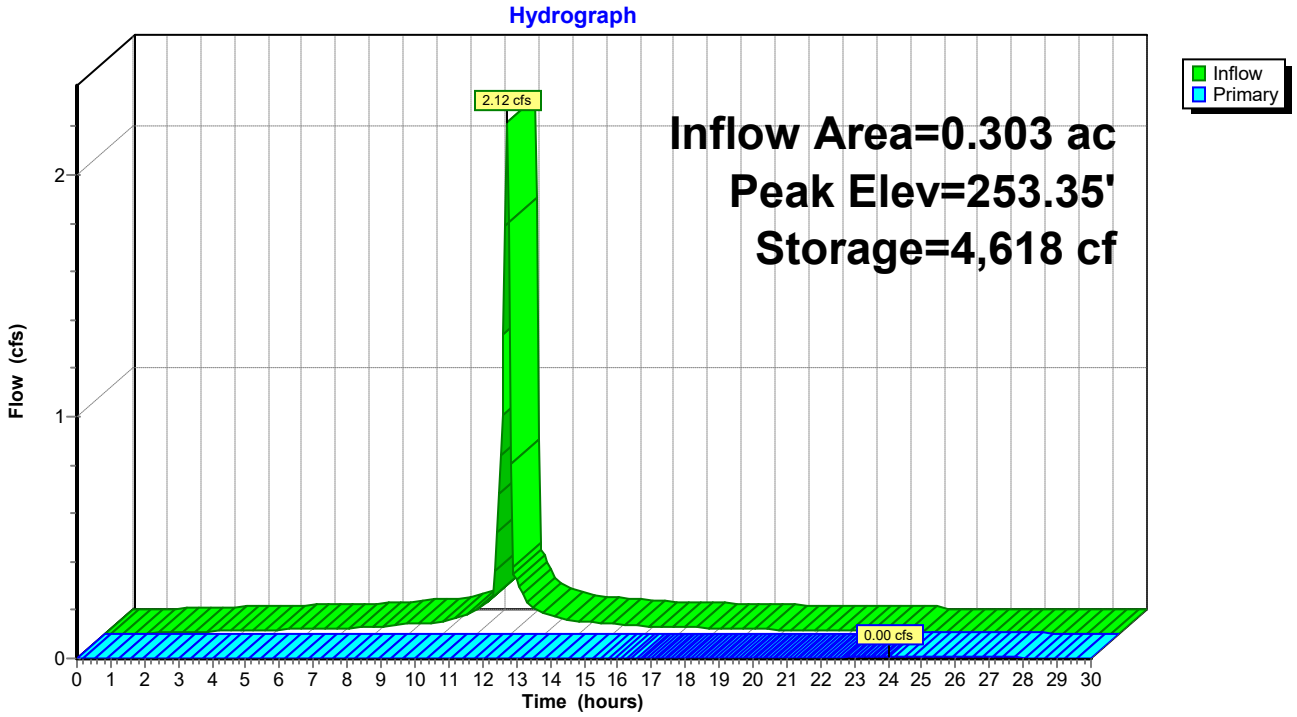
Pond 2P: BLUE ROOF



Pond 3P: 48" PIPE STORAGE



Pond 4P: BLUE ROOF



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Roof (QUAIL) Runoff Area=13,180 sf 100.00% Impervious Runoff Depth=6.76"
Flow Length=50' Slope=0.0050 '/' Tc=1.3 min CN=98 Runoff=3.30 cfs 0.170 af

Subcatchment 2: Roof (Western) Runoff Area=9,205 sf 100.00% Impervious Runoff Depth=6.76"
Flow Length=64' Slope=0.0050 '/' Tc=1.6 min CN=98 Runoff=2.27 cfs 0.119 af

Subcatchment 3: GRASS AROUND BLDG Runoff Area=4,300 sf 4.65% Impervious Runoff Depth=4.15"
Flow Length=129' Slope=0.0050 '/' Tc=2.9 min CN=75 Runoff=0.78 cfs 0.034 af

Subcatchment 4: Parking Lot and Grass Runoff Area=71,433 sf 30.43% Impervious Runoff Depth=4.81"
Flow Length=193' Slope=0.0500 '/' Tc=1.2 min CN=81 Runoff=14.93 cfs 0.657 af

Reach R1: Combined Sewer Inflow=7.46 cfs 0.689 af
Outflow=7.46 cfs 0.689 af

Reach R2: Storm Sewer System Inflow=0.09 cfs 0.121 af
Outflow=0.09 cfs 0.121 af

Pond 1P: DRY SWALE #1 Peak Elev=200.87' Storage=529 cf Inflow=0.78 cfs 0.034 af
Outflow=0.16 cfs 0.033 af

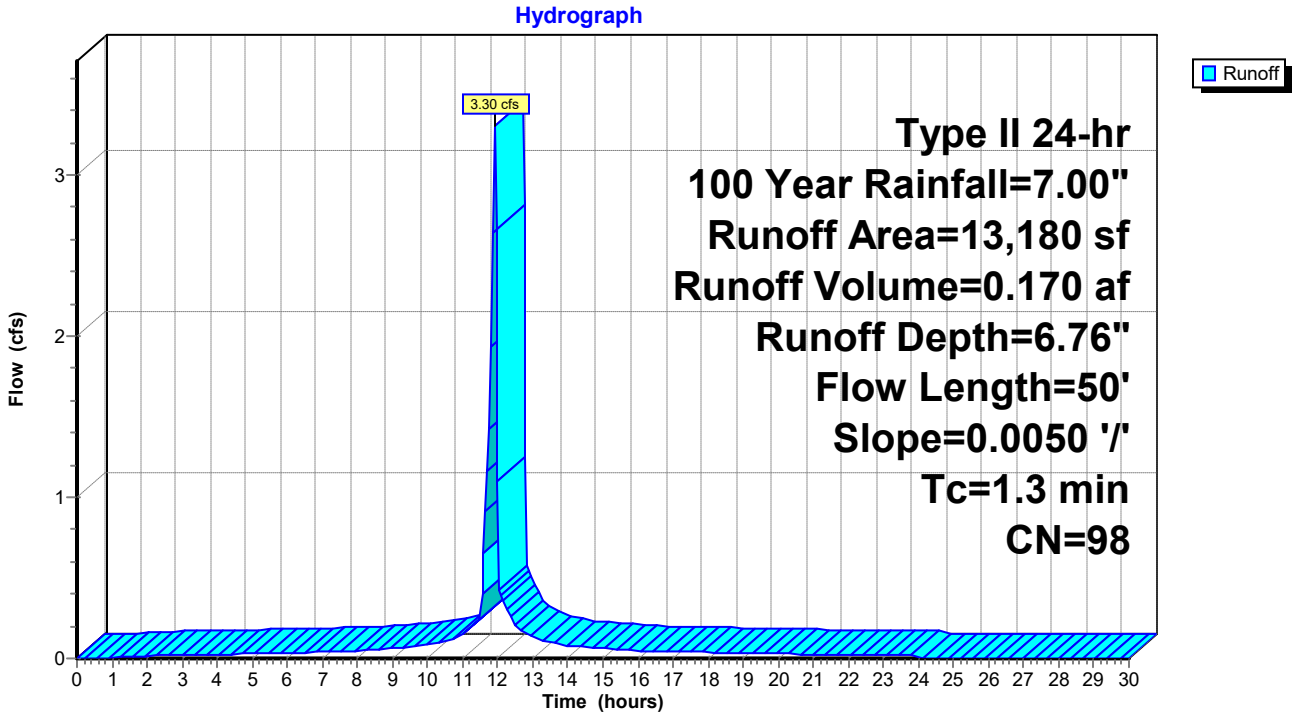
Pond 2P: BLUE ROOF Peak Elev=253.39' Storage=3,584 cf Inflow=2.27 cfs 0.119 af
Outflow=0.06 cfs 0.079 af

Pond 3P: 48" PIPE STORAGE Peak Elev=197.31' Storage=0.143 af Inflow=14.93 cfs 0.657 af
Outflow=7.30 cfs 0.656 af

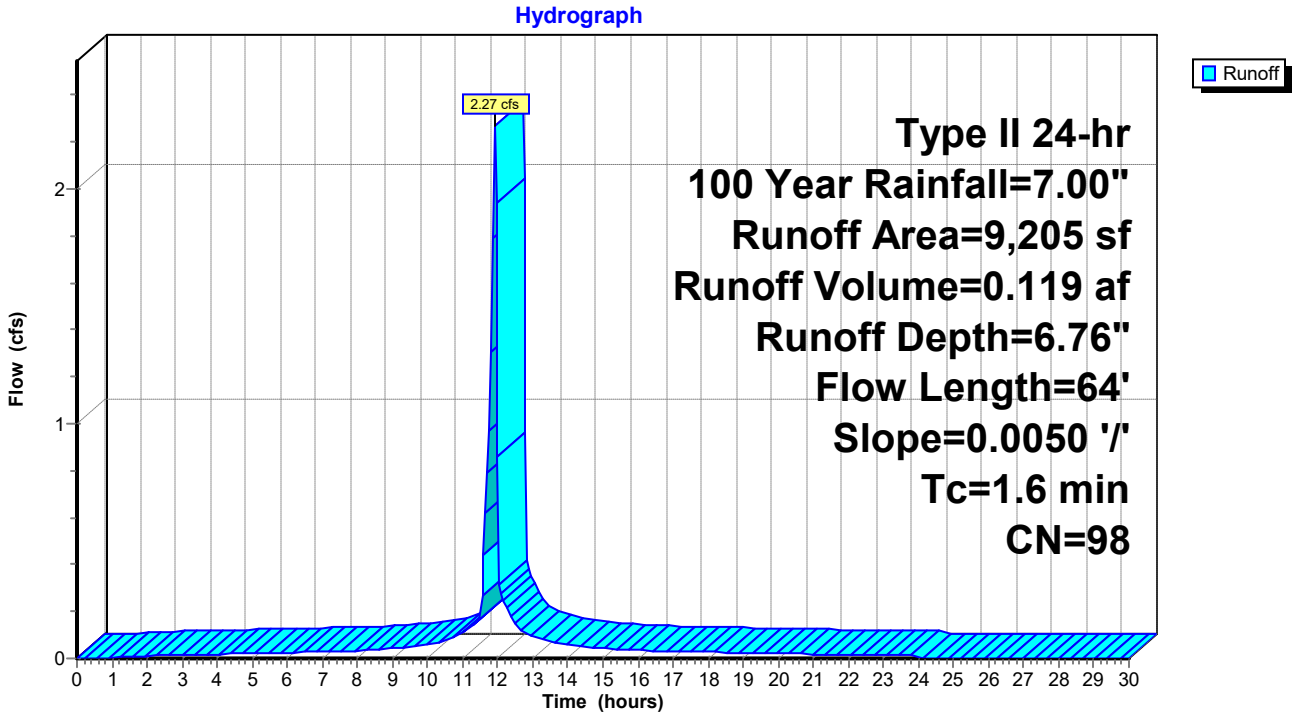
Pond 4P: BLUE ROOF Peak Elev=253.47' Storage=6,256 cf Inflow=3.30 cfs 0.170 af
Outflow=0.03 cfs 0.042 af

Total Runoff Area = 2.252 ac Runoff Volume = 0.980 af Average Runoff Depth = 5.22"
54.83% Pervious = 1.235 ac 45.17% Impervious = 1.018 ac

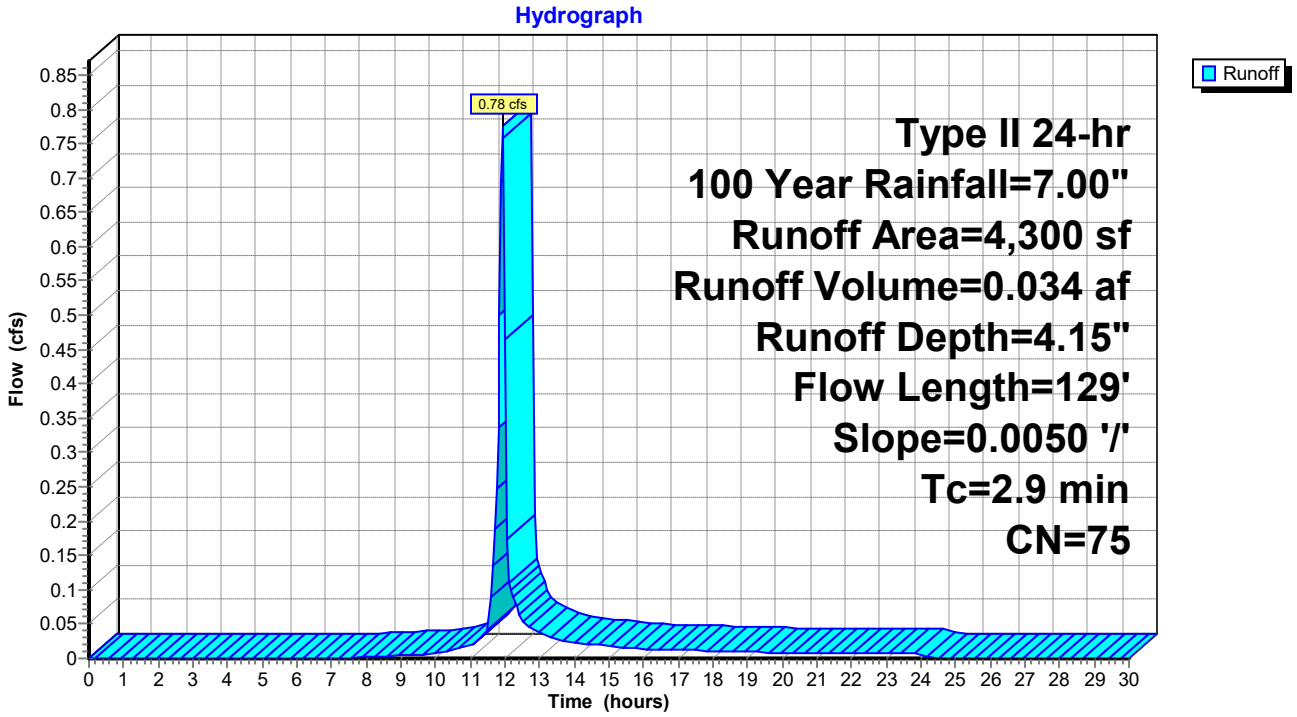
Subcatchment 1: Roof (QUAIL)



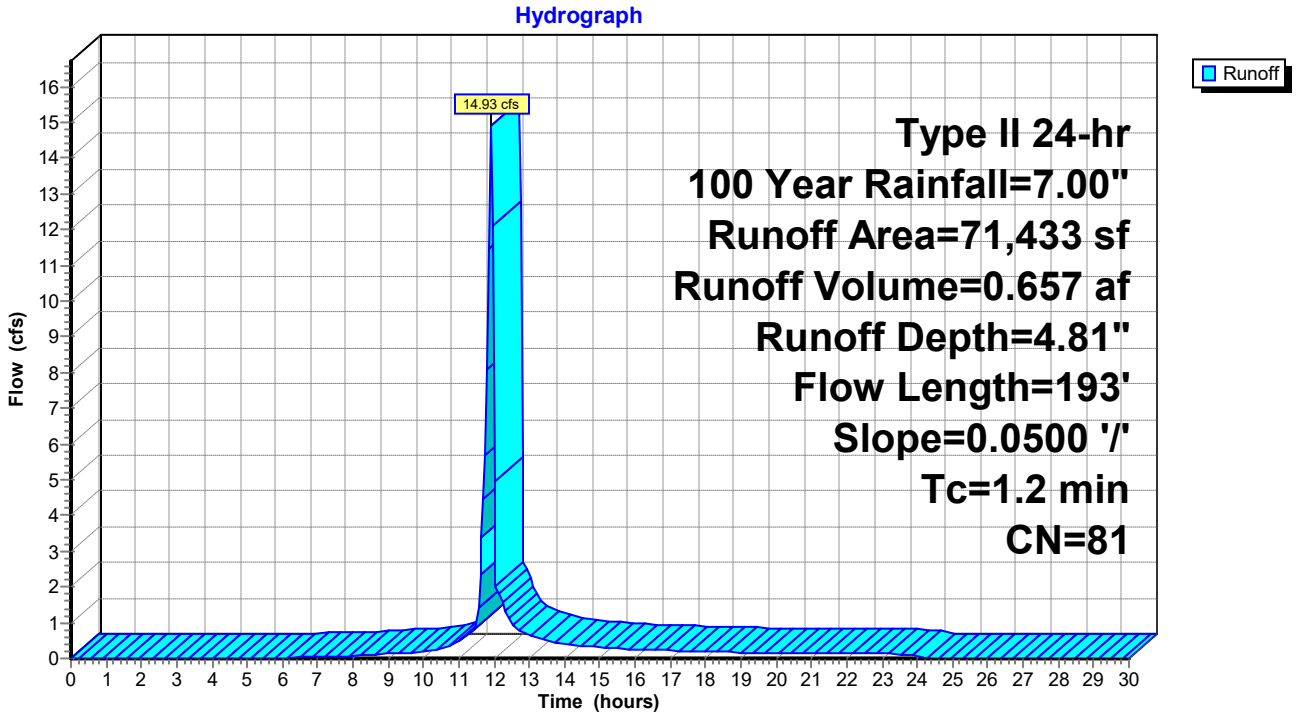
Subcatchment 2: Roof (Western)



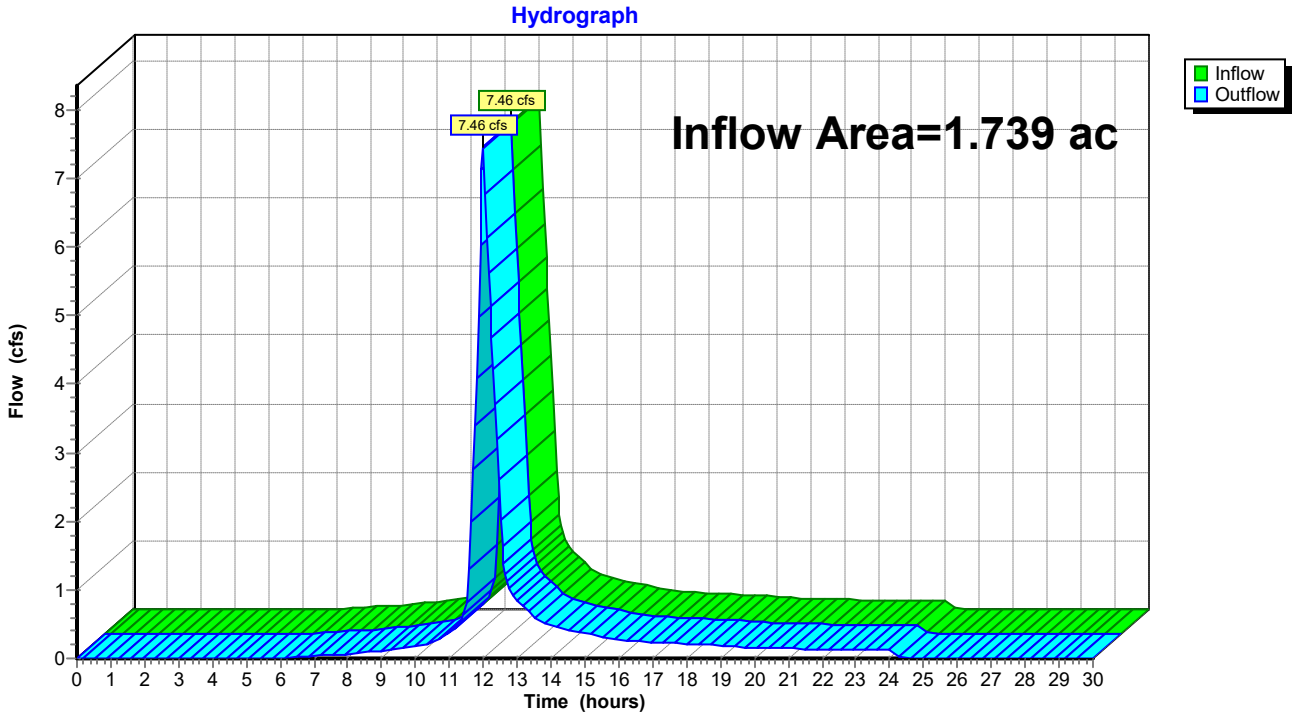
Subcatchment 3: GRASS AROUND BLDG (WESTERN)



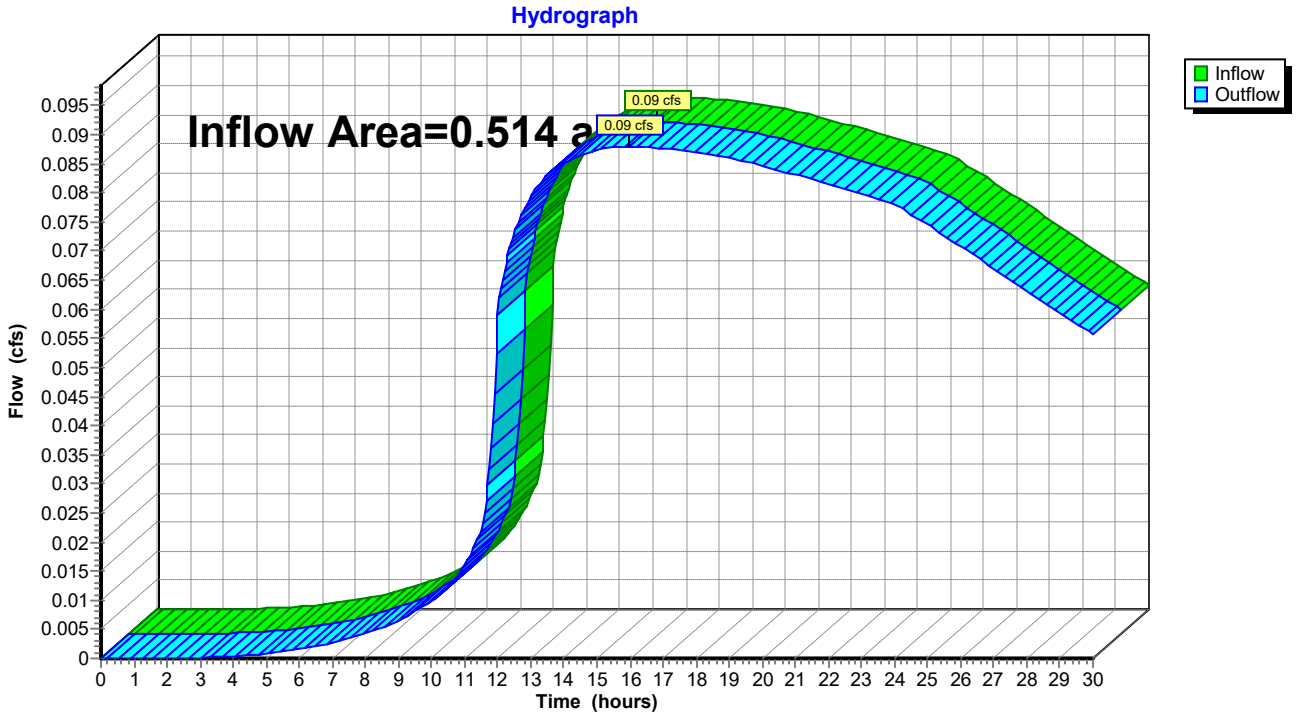
Subcatchment 4: Parking Lot and Grass



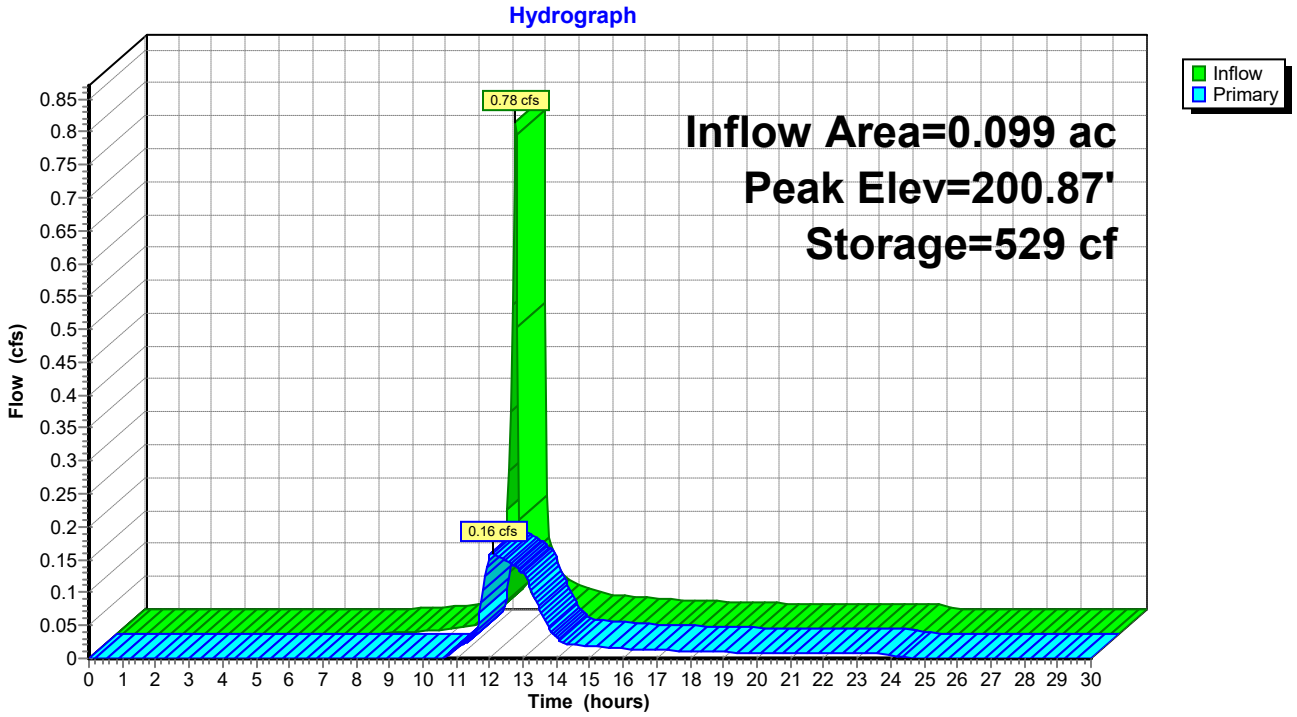
Reach R1: Combined Sewer



Reach R2: Storm Sewer System



Pond 1P: DRY SWALE #1



APPENDIX #6 – WQV CALCULATION

COMPUTATION OF WATER QUALITY VOLUME (WQ_v) OF DEVELOPED SITE

Impervious Area (Acres)	1.290	
I (Impervious Cover)	79.63%	
Rv = 0.05+0.009I	0.77	Minimum Rv = 0.20
P	1.2	
A (site area in acres)	1.620	
WQ_v TOTAL= $[(P)(R_v)(A)]/12$ (in acre-feet)	**0.124**	
WQv TOTAL= in CF	**5410**	

COMPUTATION OF BASIC RUNOFF REDUCTION VOLUME (RRv)

Aic - Total Impervious Area -(Acres)	1.290	
I (Impervious Cover)	79.63%	
Rv = 0.05+0.009I	0.950	Rv = 0.95
P (Table 4.1)	1.2	
A (site area in acres)	1.620	
S (Hydrologic Group Specific Reduction Factor)	0.30	Hydrologic Class C Soil
Ai (Impervious cover targeted for runoff reduction)	0.39	Aic * S
RRv = [(P)(Rv)(Ai)]/12 (in acre-feet)	0.037	
RRv (in cubic-feet)	**1595**	

APPENDIX #7

SPILL RESPONSE PLAN

SPILL RESPONSE PLAN

Western & Quail Apartments

In addition to the good housekeeping and material management practices discussed in relevant sections of this plan, the following practices will be implemented for spill prevention and cleanup:

Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies. Any spill in excess or suspected to be in excess of two gallons will be reported to the

NYSDEC Spill Response Unit. Notification to NYSDEC (1-800-457- 7362) must be completed within two hours of the discovery of the spill.

Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not be limited to: absorbent pads, brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.

All spills will be cleaned up immediately after discovery.

The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with spilled substance.

Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size.

The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.

The contractor/trained individual will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area on the onsite construction office or trailer.

A Spill Response Report notifications are provided below.

SPILL RESPONSE REPORT

Western & Quail Apartments

Within 1 hour of a spill discovery less than 2 gallons in volume the following must be notified:

Lofts at Pine Hills LLC, Patrick Rafferty, 518-218-4357

City of Albany, Randy Milano, P.E., City Engineer, 518-427-7481

City of Albany, Neil O'Connor, P.E., 518-434-5300

Within 1 hour of a spill discovery greater than 2 gallons in volume the following must be notified:

NYSDEC Spill Response Hotline 800-457-7362

Lofts at Pine Hills LLC, Patrick Rafferty, 518-218-4357

City of Albany, Randy Milano, P.E., City Engineer, 518-427-7481

City of Albany, Neil O'Connor, P.E., 518-434-5300

Spill Response Contractor, *To Be Designated*

APPENDIX #8

COMPLETED NOI

CITY OF ALBANY
DEPARTMENT OF WATER & WATER SUPPLY
10 NORTH ENTERPRISE DRIVE
ALBANY, NEW YORK 12204
TELEPHONE (518) 434-5300
FAX (518) 434-5332

KATHY M. SHEEHAN
MAYOR

JOSEPH E. COFFEY, JR
COMMISSIONER

AWD

(for Department of Water use only)

NOTICE OF INTENT

Stormwater Discharges Associated With Construction Activities Under Rezone Albany

All sections must be completed unless otherwise noted. Failer to complete all items may result in this form being returned to you, thereby delaying your coverage under this 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 identifing 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)

Lofts at Pine Hills LLC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

Rafferty

Owner/Operator Contact Person First Name

Patrick

Owner/Operator Mailing Address

1 Noble Path

City

Albany

State

NY

Zip

Phone (Owner/Operator)

Fax (Owner/Operator)

Email (Owner/Operator)

prafferty@phj-llc.com

FED TAX ID

(not required for individuals)

Project Site Information

Project/Site Name

Western and Quail Apartments

Street Address (NOT P.O. BOX)

237 Western Avenue

Side of Street

● **North** ○ **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)

Albany

State: N Y

Zip: -

County: Albany

Name of Nearest Cross Street

Quail Street

Distance to Nearest Cross Street (Feet)

200

Project In Relation to Cross Street

○ **North** ○ **South** ○ **East** ● **West**

Tax Map Numbers
Section-Block-Parcel

#65.61-5-42

Tax Map Numbers

#65.61-5-42

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

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

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

X Coordinates (Easting)

42.6625977974746 7

Y Coordinates (Northing)

-73.7778420863346

2. What is the nature of this construction project?

○ **New Construction**

● **Redevelopment with increase in impervious area**

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

3. Select the predominant land use for both pre and post development conditions.

SELECT ONLY ONE CHOICE FOR EACH

Pre-Development
Existing Land Use

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

Post-Development
Future Land Use

- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ 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

*** 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 existing impervious area to be disturbed (for redevelopment 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**
.	.	.	.

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

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

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

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

Hudson River

9a. Type of waterbody identified in Question 9?

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

9b. How was the wetland identified?

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

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-15-002? ○ **Yes** ◉ **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002? ○ **Yes** ◉ **No**

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

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

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

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

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

City if Albany

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

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

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

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

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

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

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

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

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

SWPPP Preparer

Hershberg & Hershberg

Contact Name (Last, Space, First)

Hershberg Daniel

Mailing Address

18 Locust Street

City

Albany

State

NY

Phone

Fax

Email

dan@hhershberg.com

SWPPP Preparer Certification

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

First Name

Daniel

MI

R

Last Name

Hershberg

Signature

Date

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

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

Temporary Structural

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

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

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

Permanent Structural

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

Other

Post Construction Stormwater Management Practice (SMP) Requirments

Important: Completetion 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
- ◯ Preservations of Buffers
- ◯ Reduction of Clearing & 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 requirments 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 Table 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)

RR Techniques (Area Reduction)	Total Contributing Area (acres)		Total Contributing Impervious Area (acres)
○ Conservation of Natural Areas (RR-1)	.	and/or	.
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)	.	and/or	.
○ Tree Planting/Tree Pit (RR-3)	.	and/or	.
○ Disconnection of Rooftop Runoff (RR-4)	.	and/or	.

RR Techniques (Area Reduction)		
○ Vegetated Swale (RR-5)		.
○ Rain Garden (RR-6)		.
○ Stormwater Planter (RR-7)		.
○ Rain Barrel/Cistern (RR-8)		.
○ Porous Pavement (RR-9)		.
○ Green Roof (RR-10)		.

Standard SMPs with RRv Capacity		
○ Infiltration Trench (I-1)		.
○ Infiltration Basin (I-2)		.
○ Dry Well (I-3)		.
○ Underground Infiltration System (I-4)		.
○ Bioretention (F-5)		.
✓ Dry Swale (O-1)		.

Standard SMPs		
○ Micropool Extended Detention (P-1)		.
○ Wet Pond (P-2)		.
○ Wet Extended Detention (P-3)		.
○ Multiple Pond System (P-4)		.
○ Pocket Pond (P-5)		.
○ Surface Sand Filter (F-1)		.
○ Underground Sand Filter (F-2)		.
○ Perimeter Sand Filter (F-3)		.
○ Organic Filter (F-4)		.
○ Shallow Wetland (W-1)		.
○ Extended Detention Wetland (W-2)		.
○ Pond/Wetland System (W-3)		.
○ Pocket Wetland (W-4)		.
○ Wet Swale (O-2)		.

Table 2 - Alternative SMPs (Do Not Include Practices Being Used For Pretreatment Only)

Alternative SMP	Total Contributing Impervious Area (acres)
☑ Hydrodynamic	.
○ Wet Vault	.
○ Media Filter	.
○ Other	.

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

Name: 3' First Defense Hydrodynamic Separator

Manufacturer: Hydro International

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 SMP's 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 Table 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Table 1 and Table 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). [ ] . [ ] **acre-feet**

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

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

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

CPv Required

[ ] . [ ] **acre-feet**

CPv Provided

[ ] . [ ] **acre-feet**

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

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

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

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

Total Overbank Flood Control Criteria (Qp)

Pre-Development

[ ] . [ ] **CFS**

Post-Development

[ ] . [ ] **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

[ ] . [ ] **CFS**

Post-Development

[ ] . [ ] **CFS**

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

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

◯ Downstream analysis reveals that the Qp and Qf controls are not required.

38. Has a long term Operation & Maintenance Plan for the post construction stormwater management practice (s) been developed? ◉ Yes ◯ No

If yes, identify the entity resonsible for the long term Operation & Maintenance.

Owner

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

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

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

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

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

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

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

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of this 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 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 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 permit for which this NOI is being submitted.

Print First Name

Patrick

MI

Print Last Name

Rafferty

Owner/Operator Signature

Date

/ /

APPENDIX #9

DRAFT NOT

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:

5. 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, the deed of record has been modified to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

☐ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? ☐ yes ☐ no
(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:
(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2010)

APPENDIX #10

SAMPLE SWPPP INSPECTION FORM

(This is a sample only. Other formats may be used.)

SPDES GP-0-20-001
Part IV.C.4
Inspection Form
(Attach additional pages as required)

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;

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

Inspection Form

(Attach additional pages as required)

OTHER FORMATS CONTAINING THIS INFORMATION MAY BE USED

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;

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

APPENDIX #11

GEOTECHNICAL REPORT

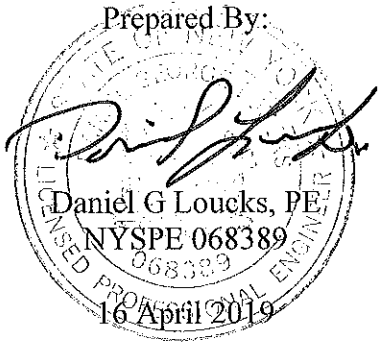
Preliminary Geotechnical Report
For
Multi Family Housing
237 Western Ave, Albany, NY

File No. 3476

Prepared For:

Alpha Rentals, LLC

Prepared By:



Daniel G Loucks, PE
NYSPE 068389
16 April 2019

INTRODUCTION:

The preliminary subsurface investigation for the proposed Multi Family Housing at 237 Western Avenue, Albany, New York has been completed. Aztech Environmental Technologies Inc. of Ballston Spa, New York has completed seven (7) soil borings and one probe at the site. The logs of these borings, along with a location diagram, have been included in the appendix of this report.

It is my understanding that the proposed construction will include a four to five-story building located approximately as indicated on the boring location diagram. The building will have a lower steel frame with some reinforced concrete bearing walls and an upper wood frame design.

The maximum column loadings will range from 150 to 175 kips. Bearing wall loads will range from 2 to 3 kips per foot of wall. The settlement tolerances are normal. Settlement tolerances are considered to include up to 1 inch of total settlement and 3/4 inch of differential settlement between column locations.

The lower portion of the building will be a parking garage and the finished floor slab will be established at between elevation 203 and 208. This will require up to approximately 2 feet of cut and 4 feet of fill in the building footprint.

Preliminary pavement design recommendations for parking lots are included in this report.

The purpose of this report is to describe the investigation conducted and the results obtained; to analyze and interpret the data obtained; and to make preliminary recommendations for the design and construction of the feasible foundation types and earthworks for the project. The preliminary recommendations contained in this report are based on the information that was provided up to the date the report was completed. Any changes in the design of the project or changes to the preliminary recommendations provided in this report should be brought to my attention to determine if there needs to be any revision of the preliminary geotechnical recommendations. I am not responsible for any changes made to the preliminary recommendations provided in this report unless I have provided written approval of the changes.

The scope of my services has been limited to coordinating the boring and laboratory investigation, analyzing the soils information, and providing a geotechnical report with preliminary foundation recommendations and seismic site classifications as per NYS Building Code. Environmental aspects of the project as well as grading and site design should be performed by qualified others.

FIELD INVESTIGATION PROCEDURES:

The borings were extended by means of 3.75 inch ID, hollow-stem augers, by using various cutting bits using circulating drilling fluid to remove the cuttings from the casing and by continuous sampling with a split-spoon sampler. The one probe was advanced by directly pushing a steel tip probe bit to refusal.

Representative samples were obtained from the boring holes by means of the split-spoon sampling procedure performed in accordance with ASTM D 1586. The standard penetration values obtained from this procedure have been indicated on the soil boring logs.

Soil samples obtained from these procedures were examined in the field, sealed in containers, and shipped to the laboratory for further examination, classification and testing, as applicable.

During the investigation, water level readings were obtained at various times where water accumulated in the boring hole. The water level readings, along with an indication of the time of the reading relative to the boring procedure, have been indicated on the soil boring logs.

In addition to the field boring investigation, the soil engineer visited the site to observe the surface conditions.

LABORATORY INVESTIGATION:

All samples were examined in the laboratory by the soil engineer and classified according to the Unified Soil Classification System. In this system, the soils are visually classified according to texture and plasticity. The appropriate group symbol is indicated on the soil boring logs.

Samples exhibiting significant percentages of fine-grained soils or organic materials were subjected to moisture content testing. This testing was performed in accordance with ASTM D 2216-71. The results of these tests have been included in the appendix of the report.

Samples exhibiting significant cohesion were tested with a calibrated, spring-loaded, penetrometer. This test is used to estimate the unconfined compressive strength of the soil sample by measuring the soil's resistance to the penetration of the penetrometer needle. The results of these tests are listed on the boring logs.

Atterberg limit tests were performed on representative samples in accordance with ASTM D 4318. The results of these tests are included in the appendix of this report.

SITE CONDITIONS:

The proposed building area currently contained some existing residential buildings and grass/lightly wooded areas. The ground surface in general slopes very gently down to the south.

Adjacent to the proposed building location are existing wood framed buildings along with three masonry buildings that are up to three stories. The masonry building have some cracking along the exterior walls that indicate past differential settlements.

SUBSURFACE CONDITIONS:

The specific subsurface conditions encountered at each boring location are indicated on the individual soil boring logs. However, to aid in the evaluation of this data, I have prepared a generalized description of the soil conditions based on the boring data. Ground surface elevations as shown on the boring logs, when available, have be estimated from the existing topographic mapping as shown on the site plan provided to this office.

All the borings encountered an upper layer of uncontrolled fill. This uncontrolled fill consists of a mixture of clayey silt/silty clay and sand with ash, cinders, brick and lesser amount of gravel and a trace of organics/wood. This uncontrolled fill is loose to medium dense/soft to stiff and it extends to

between 6.0 and over 12.0 feet below the existing ground surface.

Below the uncontrolled fill is layered silt/clayey silt and clay soils. Boring B-6 was advanced to 52 feet in these loose/soft soils. A probe was performed at the site. This probe extended to 137 feet before refusal was encountered.

GROUNDWATER CONDITIONS:

Accurate groundwater levels are difficult to determine in clayey silt soils with only short term readings or observations. Clayey silt soils typically do not allow an adequate amount of water to flow through the soil to produce a water level reading during the drilling operation. I have indicated where water was observed on the boring logs.

Based on the groundwater levels observed during the boring investigation, the moisture condition of the samples recovered from the borings and coloration of the soil samples, I judge that the groundwater level was located below depth of 6 feet.

Perched groundwater tables may occur at higher elevations in the soil profile due to groundwater being retained by layers or lenses of silt or clay soils and in pockets of debris.

Some fluctuation in hydrostatic groundwater levels and perched water conditions should be anticipated with variations in the seasonal rainfall and surface runoff.

It should be noted that the groundwater levels were obtained during the drilling procedure. Actual water levels may vary at the time of construction. Some groundwater could be encountered in soil layers labeled moist to wet on the boring logs.

ANALYSIS AND PRELIMINARY RECOMMENDATIONS:

All the borings at the site encountered uncontrolled fill that extended to at least 6 feet and over 12 feet, in two locations. This uncontrolled fill is a mixture of clayey silt/silty clay with sand and varying amounts of cinders, ash, brick and other debris. The soils below these uncontrolled fill are generally loose/soft layered silt/clayey silt and clay soils. The proposed

site plan shows that the lower portion of the building will be a parking garage and the finished floor slab will be established at between elevation 203 and 208. This will require up to approximately 2 feet of cut and 4 feet of fill in the building footprint.

In my opinion the existing uncontrolled fill soils are not suitable to properly support the proposed building and the floor slabs for the parking garage/building within normal settlement tolerances.

In my opinion, options such as removal and replacement would be very expensive due to the depth of the uncontrolled fill and removal of this uncontrolled fill would require sheeting and bracing along portions of the perimeter of the site due to the proximity of adjacent structures. This would add further to the excavation costs. In my opinion site improvement techniques such as dynamic compaction would not adequately improve the existing uncontrolled fill soils because they contain silty clay/clayey silt soils and there is a relatively high ground water level.

My preliminary recommendation would be to support the proposed buildings and floor slabs on grade beams supported by deep foundations that extend to bedrock. In my experience drilled piers/caisson foundations result in less vibrations during installation, which would be preferred due to the proximity of some buildings to the proposed building, but these piers are typically significantly more expensive than driven pile foundations. It is my opinion, that driven H or pipe pile foundations would be more cost effective, provided the vibrations due to driving can be accommodated. I recommend that the owners inquire about these vibrations with neighbors and verify the condition of adjacent structures for any existing damage. Site would have to be closely monitored if this approach was used. In my experience driving piles within 50 feet of an adjacent structure could affect the adjacent structure.

Also, the preliminary investigation did not have any deep borings that extended to bedrock. One probe was performed that extended to refusal at 137 feet below the existing ground surface, but the depth and quality of the bedrock was not determined. I recommend that at least two additional borings be performed at the site that extend to bedrock to more accurately determine the depth deep foundations would need to extend and to more accurately determine their capacity.

Building Foundations:

I preliminarily recommend that the proposed structure be supported by deep foundations that extend to bedrock. As previously stated, driven pile foundations typically are the most cost effective deep foundation in this area, but because of the proximity of existing buildings to the site, vibrations due to driving piles could affect adjacent buildings. If this is determined to be a problem, drilled piers or caisson foundations would be required to be used.

Floor Slabs:

Concrete floor slabs for the parking lot or buildings should be designed to be supported by grade beams that in turn are supported by deep foundations that extend to bedrock. Any pavements placed on existing uncontrolled fill soils could experience greater than normal settlements.

Seismic Conditions:

The potential seismic conditions at the proposed site have been investigated using the information provided in the NYS Building Code Section 1613, the boring information obtained during my investigation and past experience with soils in the area.

Based on the soil boring information to date, and my experience it is my opinion that the Site Soil Classification (Table 1615.1.1) could be assumed to be D. Using figures 1615 (1 and 2) and the 2015 IBC Seismic Design Provisions, I estimate that the MCE spectral acceleration (S_{MS}) at short periods is 29.0 and the MCE spectral acceleration (S_{M1}) at 1 s period is 16.7.

The probabilistic ground motion values are expressed in %g for rock site class B. Peak ground accelerations in the upper soil profile may vary. If specific peak ground accelerations or shear wave velocities are required for the upper soil profile additional testing would be required. If it is determined by the structural engineer that the Seismic Design Category is D, E or F additional geotechnical recommendations can be provided.

The soil borings and my analysis do not indicate any significant potential seismic hazards such as liquefaction, sensitive clays, weakly cemented soil or surface rupture.

ADDITIONAL RECOMMENDATIONS

I recommend that a minimum of two additional soil borings be completed at the site to more accurately determine the depth to bedrock and the quality of the bedrock.

I also recommend that the owner investigate the condition of adjacent structures and impacts of driving piles with neighbors. It is possible that if the vibrations due to driving piles cannot be accommodated then drilled piers would be required to support the proposed building.

Final geotechnical recommendation can be provided after this additional work and site investigations are completed. If requested I can provide a cost for the additional drilling work and the final geotechnical report.

Infiltration testing was not performed because of the silty clay/clayey silt soils encountered in the borings and the low potential for any infiltration in these types of soils. If requested this testing could be performed.

Proposed Multi Family Housing
237 Western Ave, Albany, New York
File No.3476

CONTENTS OF APPENDIX:

GENERAL NOTES

DRILLING & SAMPLING SYMBOLS

SS : Split-Spoon — 1¾ " I.D., 2" O.D., except where noted
S : Shelby Tube — 2" O.D., except where noted
PA : Power Auger Sample
DB : Diamond Bit — NX: BX: AX:
CB : Carboloy Bit — NX: BX: AX:
OS : Osterberg Sampler — 3" Shelby Tube
HS : Housel Sampler
WS : Wash Sample
FT : Fish Tail
RB : Rock Bit
WO : Wash Out

Standard "N" Penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2 inch OD split spoon, except where noted

WATER LEVEL MEASUREMENT SYMBOLS

WL : Water Level
WCI : Wet Cave In
DCI : Dry Cave In
WS : While Sampling
WD : While Drilling
BCR : Before Casing Removal
ACR : After Casing Removal
AB : After Boring

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable ground water levels. In impervious soils the accurate determination of ground water elevations is not possible in even several day's observation, and additional evidence on ground water elevations must be sought.

CLASSIFICATION

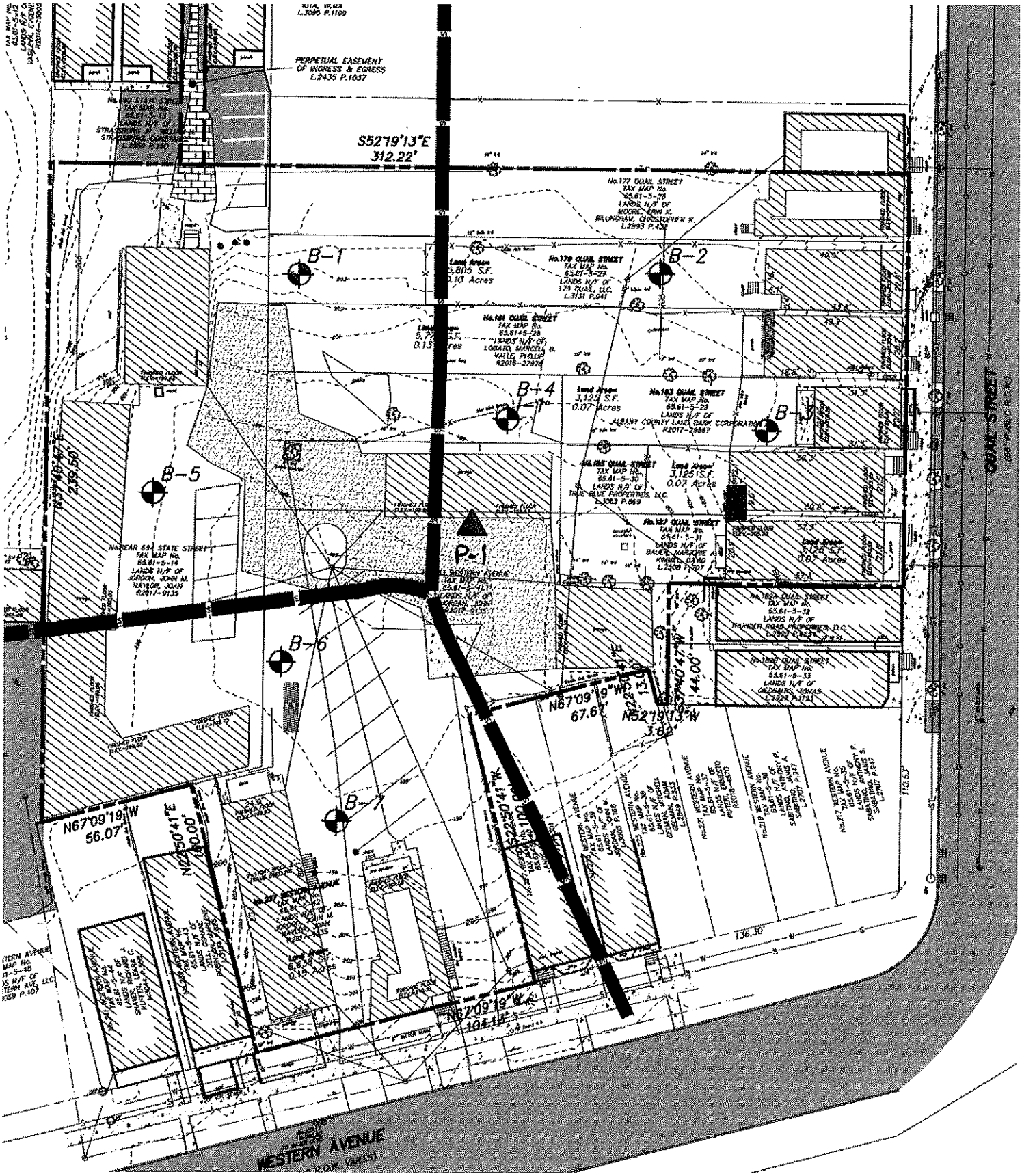
COHESIONLESS SOILS

"Trace"	: 1% to 10%	
"Trace to some"	: 10% to 20%	
"Some"	: 20% to 35%	
"And"	: 35% to 50%	
Loose	: 0 to 9 Blows	} or equivalent
Medium Dense	: 10 to 29 Blows	
Dense	: 30 to 59 Blows	
Very Dense	: ≥60 Blows	

COHESIVE SOILS

If clay content is sufficient so that clay dominates soil properties, then clay becomes the principle noun with the other major soil constituent as modifiers: i.e., silty clay. Other minor soil constituents may be added according to classification breakdown for cohesionless soils; i.e., silty clay, trace to some sand, trace gravel.

Soft	: 0.00 — 0.59 tons/ft²
Medium	: 0.60 — 0.99 tons/ft²
Stiff	: 1.00 — 1.99 tons/ft²
Very Stiff	: 2.00 — 3.99 tons/ft²
Hard	: ≥ 4.00 tons/ft²


PERPETUAL EASEMENT OF INGRESS & EGRESS L.2435 P.1037
S52°19'13"E 312.22'
No.177 QUAIL STREET
No.179 QUAIL STREET
No.181 QUAIL STREET
No.183 QUAIL STREET
No.185 QUAIL STREET
No.187 QUAIL STREET
No.189A QUAIL STREET
No.189B QUAIL STREET
QUAIL STREET
B-1
B-2
B-3
B-4
B-5
B-6
B-7
P-1
N37°40'47"E 239.50'
N67°09'19"W 67.67'
S37°40'47"W 44.00'
S52°19'13"W 3.82'
N67°09'19"W 56.07'
N22°50'41"E 100.00'
S22°50'41"W 100.00'
N67°09'19"W 104.12'
136.30'
172.53'
WESTERN AVENUE
R.O.W. VARIES

BORING LOG

BORING NO: 1

SHEET 1 of 1

PROJECT NAME: Multi Family Housing

LOCATION: Albany, New York

DATE STARTED/COMPLETED: April 2019

ENGINEER/ARCHITECT:

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: ATV

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.75 inch ID

WATER LEVEL DEPTH: 7 ft **TIME:** WS

FILE NUMBER: 3476

OFFSET: None

SURFACE ELEV.: 203 +/- ft

DRILL CONTRACTOR: Aztech Environmental Technologies Inc.

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1–2	1	SS	3-3-2-2	5		Fine to Coarse Sand, trace to some Clayey Silt, trace Gravel, Brick, Dark Brown, Moist, Loose (SM) FILL
3–4	2	SS	2-2-4-2	6		Silty Clay, trace to some Brick, Brown, Moist, Stiff (CL) FILL
5–6	3	SS	3-1-1-2	2		
7–8	4	SS	2-4-3-4	7		Clayey Silt, trace to some Sand, Brown, Moist, Loose (ML) Possible Fill
9–10	5	SS	3-3-2-2	5		Clayey Silt, trace Sand, Dark Brown, Moist, Loose (ML) Possible Fill
11–12	6	SS	3-5-6-6	11		Clayey Silt, trace Sand, Brown/Gray, Moist to Wet, Medium Dense (ML)
13–27						End of Boring at 12.0 Feet

BORING LOG

BORING NO: 2

SHEET 1 of 1

PROJECT NAME: Multi Family Housing

LOCATION: Albany, New York

DATE STARTED/COMPLETED: April 2019

ENGINEER/ARCHITECT:

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: ATV

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.75 inch ID

WATER LEVEL DEPTH: 7 ft **TIME:** WS

FILE NUMBER: 3476

OFFSET: 25 Feet South

SURFACE ELEV.: 202 +/- ft

DRILL CONTRACTOR: Aztech Environmental Technologies Inc.

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1–2	1	SS	WRH-2-1-1	3		Organic Silt, trace Sand, Black, Moist, Loose (OL) FILL
3–4	2	SS	1-2-2-2	4		Fine to Medium Sand and Clayey Silt, trace Gravel, Brown, Moist, Loose (SM-ML) FILL
5–6	3	SS	2-1-2-2	3		
7–8	4	SS	2-3-3-3	6		Clayey Silt, trace Sand, Brick, Dark Brown, Moist, Loose (ML) FILL
9–10	5	SS	4-3-3-3	6		Silty Clay, trace Sand, Silt, Dark Brown, Wet, Stiff (CL) Possible Fill
11–12	6	SS	4-3-3-3	6		Clay and Silt, Brown/Gray, Wet, Loose/Soft (CL)(ML) Layered
13–27						End of Boring at 12.0 Feet

BORING LOG

BORING NO: 3

SHEET 1 of 1

PROJECT NAME: Multi Family Housing

LOCATION: Albany, New York

DATE STARTED/COMPLETED: April 2019

ENGINEER/ARCHITECT:

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: ATV

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.75 inch ID

WATER LEVEL DEPTH: 8 ft **TIME:** WS

FILE NUMBER: 3476

OFFSET: None

SURFACE ELEV.: 204 +/- ft

DRILL CONTRACTOR: Aztech Environmental Technologies Inc.

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1–2	1	SS	WRH-2-1-1	3		Silty Clay, trace Sand, Brown, Moist, Stiff (CL) FILL
3–4	2	SS	2-5-5-8	10		
5–6	3	SS	3-4-3-3	7		Fine to Coarse Sand, trace to some Silt, trace Gravel, Brick, Brown, Moist, Loose (SM) FILL
7–8	4	SS	1-1-1-1	2		Clayey Silt, trace to some Brick, trace Organics, Dark Brown, Moist, Loose (ML) FILL
9–10	5	SS	WRH-1-1	1		Silty Clay, trace Sand, Brown/Gray, Wet, Soft (CL) Possible Fill
11–12	6	SS	4-4-6-5	10		Clayey Silt, trace Sand, Browen/Gray, Moist, Medium Dense (ML)
13–27						End of Boring at 12.0 Feet

BORING LOG

BORING NO: 4

SHEET 1 of 1

PROJECT NAME: Multi Family Housing

LOCATION: Albany, New York

DATE STARTED/COMPLETED: April 2019

ENGINEER/ARCHITECT:

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: ATV

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.75 inch ID

WATER LEVEL DEPTH: 10 ft **TIME:** WS

FILE NUMBER: 3476

OFFSET: None

SURFACE ELEV.: 200 +/- ft

DRILL CONTRACTOR: Aztech Environmental Technologies Inc.

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1–2	1	SS	WRH-3-3	3		Clayey Silt, trace Sand, Organics, Dark Brown, Moist, Loose (ML) FILL
3–4	2	SS	3-3-3-4	6		Fine to Medium Sand and Clayey Silt, trace to some Brick, Dark Brown, Moist, Loose (SM-ML) FILL
5–6	3	SS	3-4-3-3	7		Clayey Silt, trace Orgaincs, Dark Brown, Moist, Loose (ML) FILL
7–8	4	SS	2-2-2-3	4		Clayey Silt, some Sand, trace to some Ash, Cinders, Dark Brown, Moist, Loose (ML) FILL
9–10	5	SS	2-2-2-2	4		
11–12	6	SS	3-2-1-1	3		Cinders, trace to some Silt, Brown/Gray, Wet, Loose (SM) FILL
13–27						End of Boring at 12.0 Feet

BORING LOG

BORING NO: 5

SHEET 1 of 1

PROJECT NAME: Multi Family Housing

LOCATION: Albany, New York

DATE STARTED/COMPLETED: April 2019

ENGINEER/ARCHITECT:

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: ATV

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.75 inch ID

WATER LEVEL DEPTH: 8 ft **TIME:** WS

FILE NUMBER: 3476

OFFSET: None

SURFACE ELEV.: 199 +/- ft

DRILL CONTRACTOR: Aztech Environmental Technologies Inc.

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1–2	1	SS	8-6-3-3	9		Fine to Coarse Sand, trace to some Gravel, Silt, trace Brick, Dark Brown, Moist, Loose (SM) FILL
3–4	2	SS	3-2-4-2	6		Silty Clay, trace Ash, Brown, Moist, Stiff (CL) FILL
5–6	3	SS	2-2-2-2	4		
7–8	4	SS	3-2-2-2	4		No Recovery
9–10	5	SS	3-2-2-2	4		Silt, some Clay, Brown, Wet, Loose/Medium Stiff (ML)(CL) Layered
11–12	6	SS	3-4-3-4	7		Clay, some Silt, Brown, Moist to Wet, Loose/Medium Stiff (CL) (ML) Layered Unconfined Compressive Strength = 0.4 tsf
13–27						End of Boring at 12.0 Feet

BORING LOG

BORING NO: 6

SHEET 1 of 2

PROJECT NAME: Multi Family Housing

LOCATION: Albany, New York

DATE STARTED/COMPLETED: April 2019

ENGINEER/ARCHITECT:

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: ATV

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.75 inch ID

WATER LEVEL DEPTH: 6 ft **TIME:** WS

FILE NUMBER: 3476

OFFSET: None

SURFACE ELEV.: 198 +/- ft

DRILL CONTRACTOR: Aztech Environmental Technologies Inc.

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1	1	SS	7-4-2-2	6		Clayey Silt, trace Sand, Ash, Organics, Dark Brown, Moist, Loose (ML) FILL
3	2	SS	2-4-4-5	8		
5	3	SS	5-5-3-2	8		Cinders and Ash, trace Brick, Gray, Moist to Wet, Loose (SM) FILL
7	4	SS	1-1-1-1	2		
9	5	SS	2-2-1-1	3		Clayey Silt, trace to some Wood, Dark Brown, Wet, Loose (ML) FILL
13		PA				
15						Clayey Silt, trace Sand, Brown/Gray, Moist to Wet, Loose (ML)
16	6	SS	2-2-2-2	4		
19		PA				Clayey Silt, trace to some Clay, Gray, Wet, Loose/Soft (ML)(CL) Occasional Clay Layers
21	7	SS	WRH	WRH		
24		PA				
26	8	SS	WRH	WRH		
27						

BORING LOG

BORING NO: 6

SHEET 2 of 2

PROJECT NAME: Multi Family Housing

LOCATION: Albany, New York

DATE STARTED/COMPLETED: April 2019

ENGINEER/ARCHITECT:

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: ATV

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.75 inch ID

WATER LEVEL DEPTH: 6 ft **TIME:** WS

FILE NUMBER: 3476

OFFSET: None

SURFACE ELEV.: 198 +/- ft

DRILL CONTRACTOR: Aztech Environmental Technologies Inc.

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
28		PA				Clay and Silt, Gray, Moist to Wet, Loose/Soft (CL)(ML) Layered Unconfined Compressive Strength = 0.2 tsf
29						
30						
31	9	SS	WRH-2-2	2		
32						
33		PA				
34						
35						
36	10	SS	WRH	WRH		
37						
38		PA				Clayey Silt, some Clay, Gray, Wet, Loose/Soft (ML)(CL) Layered
39						
40						
41	11	SS	WRH	WRH		
42						
43		PA				
44						
45						
46	12	SS	WRH	WRH		
47						
48		PA				Silt and Clay, Gray, Wet, Loose/Soft (ML)(CL) Layered
49						
50						
51	13	SS	WRH	WRH		
52						End of Boring at 52.0 Feet
53						
54						

BORING LOG

BORING NO: 7

SHEET 1 of 1

PROJECT NAME: Multi Family Housing

LOCATION: Albany, New York

DATE STARTED/COMPLETED: April 2019

ENGINEER/ARCHITECT:

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: ATV

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.75 inch ID

WATER LEVEL DEPTH: 8 ft **TIME:** WS

FILE NUMBER: 3476

OFFSET: None

SURFACE ELEV.: 198 +/- ft

DRILL CONTRACTOR: Aztech Environmental Technologies Inc.

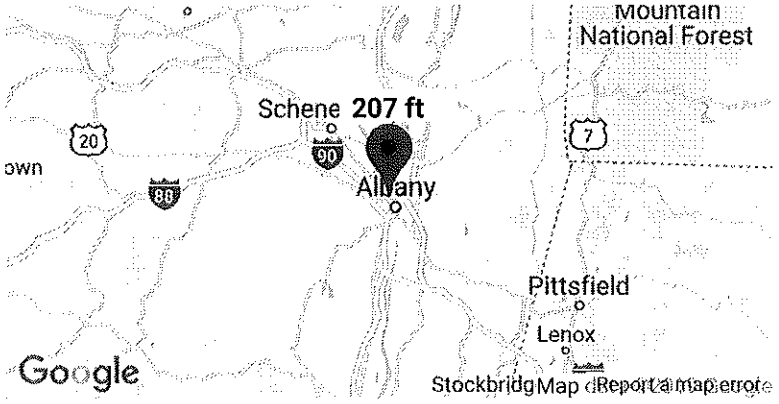
Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1–2	1	SS	13-5-4-2	9		Fine to Medium Sand and Gravel, trace to some Silt, trace Ash, Dark Gray, Moist, Loose (SM-GM) FILL
3–4	2	SS	4-4-4-4	8		Clayey Silt, trace Sand and Ash, Brown/Gray, Moist, Loose (ML) FILL
5–6	3	SS	2-2-3-3	5		
7–8	4	SS	3-3-3-3	6		
9–10	5	SS	1-1-1-1	2		Clayey Silt, trace to some Sand, Brown/Gray, Moist to Wet, Loose (ML) Possible Fill
11–12	6	SS	2-1-1-1	2		
13–27						End of Boring at 12.0 Feet

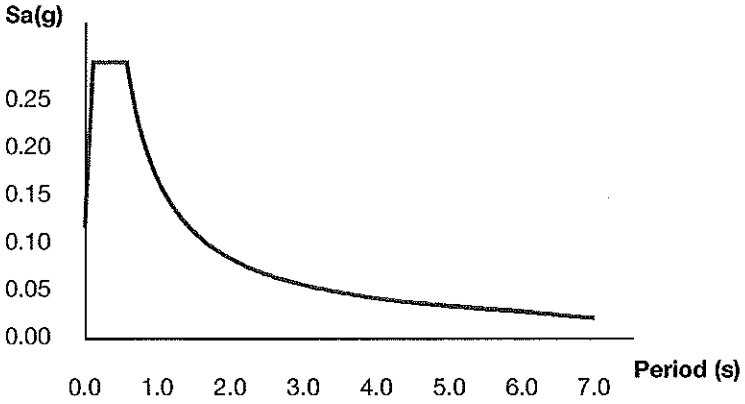
Hazards by Location

Search Information

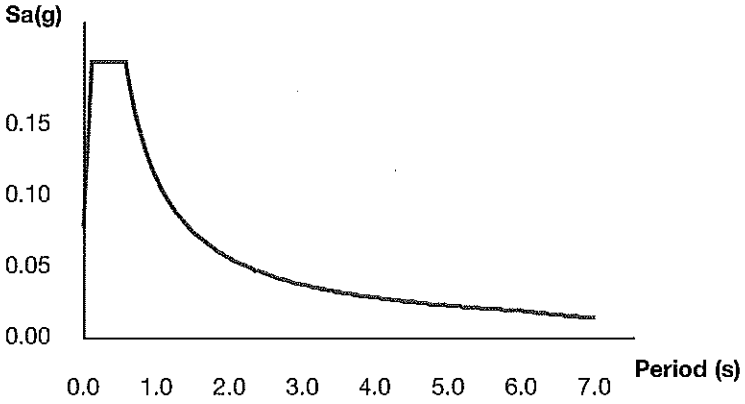
Address:	237 Western Ave, Albany, NY 12203, USA
Coordinates:	42.6623643, -73.7779615
Elevation:	207 ft
Timestamp:	2019-04-16T14:27:39.646Z
Hazard Type:	Seismic
Reference Document:	IBC-2015
Risk Category:	I
Site Class:	D



MCER Horizontal Response Spectrum



Design Horizontal Response Spectrum



Basic Parameters

Name	Value	Description
S_S	0.181	MCE_R ground motion (period=0.2s)
S_1	0.07	MCE_R ground motion (period=1.0s)
S_{MS}	0.29	Site-modified spectral acceleration value
S_{M1}	0.167	Site-modified spectral acceleration value
S_{DS}	0.194	Numeric seismic design value at 0.2s SA
S_{D1}	0.112	Numeric seismic design value at 1.0s SA

Additional Information

Name	Value	Description
SDC	B	Seismic design category
F_a	1.6	Site amplification factor at 0.2s

F_v	2.4	Site amplification factor at 1.0s
CR_S	0.913	Coefficient of risk (0.2s)
CR_1	0.894	Coefficient of risk (1.0s)
PGA	0.087	MCE_G peak ground acceleration
F_{PGA}	1.6	Site amplification factor at PGA
PGA_M	0.139	Site modified peak ground acceleration
T_L	6	Long-period transition period (s)
SsRT	0.181	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.199	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.07	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.078	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.6	Factored deterministic acceleration value (1.0s)
PGAd	0.6	Factored deterministic acceleration value (PGA)

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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CONSTRUCTION TECHNOLOGY

INSPECTION & TESTING DIVISION, P.D.& T.S., INC.
4 William Street, Ballston Lake, New York 12019
Phone: (518) 399-1848 Fax: (518) 399-1913

CLIENT: **DANIEL LOUCKS, P.E.**
POST OFFICE BOX 163
BALLSTON SPA, NEW YORK 12020

REPORT NUMBER: 1 : PAGE: 1
REPORT DATE: 04/12/19
OUR FILE NUMBER: 750.001
LAB CONTROL NUMBER: 18643

ATT'N: MR. DANIEL LOUCKS, P.E.

PROJECT: **MULTI-FAMILY HOUSING: ALBANY, NEW YORK**

DETERMINATION OF PLASTICITY INDEX & WATER (MOISTURE) CONTENT IN SOILS

SAMPLE ID: **CLIENT ID: B-6, 30-32'**

ASTM D-4318 LIQUID LIMIT	ASTM D-4318 PLASTIC LIMIT	ASTM D-4318 PLASTICITY INDEX	ASTM D-2216 MOISTURE CONTENT
50.7%	**23.6%**	**27**	**42.7%** AS RECEIVED

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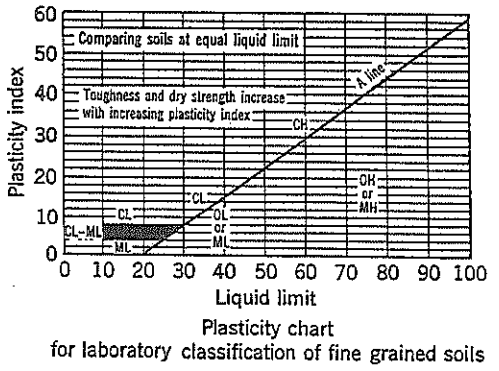
RESPECTFULLY SUBMITTED,
CONSTRUCTION TECHNOLOGY
Tom Joslin
TOM JOSLIN, S.E.T. (NICET)
MANAGER TECHNICAL SERVICES

Table 3.5 Unified Soil Classification

Field Identification Procedures (Excluding particles larger than 3 in. and basing fractions on estimated weights)						Group Symbols[a]	Typical Names	Information Required for Describing Soils	Laboratory Classification Criteria
Coarse-grained soils More than half of material is *larger* than No. 200 sieve size[b] (The No. 200 sieve size is about the smallest particle visible to naked eye)	Gravels More than half of coarse fraction is larger than No. 4 sieve size (For visual classification, the ¼ in. size may be used as equivalent to the No. 4 sieve size)	Clean gravels (little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes			*GW*	Well graded gravels, gravel-sand mixtures, little or no fines	Give typical name; indicate approximate percentages of sand and gravel; maximum size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbols in parentheses For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics Example: *Silty sand*, gravelly; about 20% hard, angular gravel particles ½-in. maximum size; rounded and subangular sand grains coarse to fine, about 15% nonplastic fines with low dry strength; well compacted and moist in place; alluvial sand; (*SM*)	Use grain size curve in identifying the fractions as given under field identification Determine percentages of gravel and sand from grain size curve Depending on percentage of fines (fraction smaller than No. 200 sieve size) coarse grained soils are classified as follows: Less than 5% *GW, GP, SW, SP* More than 12% *GM, GC, SM, SC* 5% to 12% *Borderline* cases requiring use of dual symbols $C_U = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3
			Predominantly one size or a range of sizes with some intermediate sizes missing			*GP*	Poorly graded gravels, gravel-sand mixtures, little or no fines		Not meeting all gradation requirements for *GW*
		Gravels with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures see *ML* below)			*GM*	Silty gravels, poorly graded gravel-sand-silt mixtures		Atterberg limits below "A" line, or *PI* less than 4 — Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols Atterberg limits above "A" line, with *PI* greater than 7
			Plastic fines (for identification procedures, see *CL* below)			*GC*	Clayey gravels, poorly graded gravel-sand-clay mixtures		
	Sands More than half of coarse fraction is smaller than No. 4 sieve size	Clean sands (little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes			*SW*	Well graded sands, gravelly sands, little or no fines		$C_U = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3
			Predominantly one size or a range of sizes with some intermediate sizes missing			*SP*	Poorly graded sands, gravelly sands, little or no fines		Not meeting all gradation requirements for *SW*
		Sands with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures, see *ML* below)			*SM*	Silty sands, poorly graded sand-silt mixtures		Atterberg limits below "A" line or *PI* less than 5 — Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols Atterberg limits below "A" line with *PI* greater than 7
			Plastic fines (for identification procedures, see *CL* below)			*SC*	Clayey sands, poorly graded sand-clay mixtures		
Fine-grained soils More than half of material is *smaller* than No. 200 sieve size (The No. 200 sieve size is about the smallest particle visible to naked eye)	Identification Procedures on Fraction Smaller than No. 40 Sieve Size		Dry Strength (crushing characteristics)	Dilatancy (reaction to shaking)	Toughness (consistency near plastic limit)				
	Silts and clays Liquid limit less than 50		None to slight	Quick to slow	None	*ML*	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with slight plasticity	Give typical name; indicate degree and character of plasticity, amount and maximum size of coarse grains; colour in wet condition, odour if any, local or geologic name, and other pertinent descriptive information, and symbol in parentheses For undisturbed soils add information on structure, stratification, consistency in undisturbed and remoulded states, moisture and drainage conditions Example: *Clayey silt*, brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; (*ML*)	
			Medium to high	None to very slow	Medium	*CL*	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		
			Slight to medium	Slow	Slight	*OL*	Organic silts and organic silt-clays of low plasticity		
	Silts and clays Liquid limit greater than 50		Slight to medium	Slow to none	Slight to medium	*MH*	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts		
			High to very high	None	High	*CH*	Inorganic clays of high plasticity, fat clays		
			Medium to high	None to very slow	Slight to medium	*OH*	Organic clays of medium to high plasticity		
Highly Organic Soils			Readily identified by colour, odour, spongy feel and frequently by fibrous texture			*Pt*	Peat and other highly organic soils		



Plasticity chart for laboratory classification of fine grained soils

From Wagner, 1957.

[a] *Boundary classifications*. Soils possessing characteristics of two groups are designated by combinations of group symbols. For example *GW–GC*, well graded gravel-sand mixture with clay binder.

[b] All sieve sizes on this chart are U.S. standard.

Field Identification Procedure for Fine Grained Soils or Fractions

These procedures are to be performed on the minus No. 40 sieve size particles, approximately 1/64 in. For field classification purposes, screening is not intended, simply remove by hand the coarse particles that interfere with the tests.

Dilatancy (Reaction to shaking):

After removing particles larger than No. 40 sieve size, prepare a pat of moist soil with a volume of about one-half cubic inch. Add enough water if necessary to make the soil soft but not sticky.

Place the pat in the open palm of one hand and shake horizontally, striking vigorously against the other hand several times. A positive reaction consists of the appearance of water on the surface of the pat which changes to a livery consistency and becomes glossy. When the sample is squeezed between the fingers, the water and gloss disappear from the surface, the pat stiffens and finally it cracks or crumbles. The rapidity of appearance of water during shaking and of its disappearance during squeezing assist in identifying the character of the fines in a soil.

Very fine clean sands give the quickest and most distinct reaction whereas a plastic clay has no reaction. Inorganic silts, such as a typical rock flour, show a moderately quick reaction.

Dry Strength (Crushing characteristics):

After removing particles larger than No. 40 sieve size, mould a pat of soil to the consistency of putty, adding water if necessary. Allow the pat to dry completely by oven, sun or air drying, and then test its strength by breaking and crumbling between the fingers. This strength is a measure of the character and quantity of the colloidal fraction contained in the soil. The dry strength increases with increasing plasticity.

High dry strength is characteristic for clays of the CH group. A typical inorganic silt possesses only very slight dry strength. Silty fine sands and silts have about the same slight dry strength, but can be distinguished by the feel when powdering the dried specimen. Fine sand feels gritty whereas a typical silt has the smooth feel of flour.

Toughness (Consistency near plastic limit):

After removing particles larger than the No. 40 sieve size, a specimen of soil about one-half inch cube in size, is moulded to the consistency of putty. If too dry, water must be added and if sticky, the specimen should be spread out in a thin layer and allowed to lose some moisture by evaporation. Then the specimen is rolled out by hand on a smooth surface or between the palms into a thread about one-eight inch in diameter. The thread is then folded and re-rolled repeatedly. During this manipulation the moisture content is gradually reduced and the specimen stiffens, finally loses its plasticity, and crumbles when the plastic limit is reached.

After the thread crumbles, the pieces should be lumped together and a slight kneading action continued until the lump crumbles.

The tougher the thread near the plastic limit and the stiffer the lump when it finally crumbles, the more potent is the colloidal clay fraction in the soil. Weakness of the thread at the plastic limit and quick loss of coherence of the lump below the plastic limit indicate either inorganic clay of low plasticity, or materials such as kaolin-type clays and organic clays which occur below the A-line.

Highly organic clays have a very weak and spongy feel at the plastic limit.

Soil Characteristics Pertinent to Roads and Airfields

Major Divisions		Letter (1)	Name	Value as Subgrade When Not Subject to Frost Action	Value as Subbase When Not Subject to Frost Action	Value as Base When Not Subject to Frost Action	Potential Frost Action	Compressibility and Expansion	Drainage Characteristics	Compaction Equipment	Unit Dry Weight lb. per cu. ft.	Typical Design Values	
												CBR (2)	Subgrade Modulus k lb. per cu. in.
Coarse-Grained Soils	Gravel and Gravelly Soils	GW	Well-graded gravels or gravel-sand mixtures, little or no fines	Excellent	Excellent	Good	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller, steel-wheeled roller	125-140	40-80	300-500
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines	Good to excellent	Good	Fair to good	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller, steel-wheeled roller	110-140	30-60	300-500
		GM d	Silty gravels, gravel-sand-silt mixtures	Good to excellent	Good	Fair to good	Slight to medium	Very slight	Fair to poor	Rubber-tired roller, sheepsfoot roller; close control of moisture	125-145	40-60	300-500
		GM u		Good	Fair	Poor to not suitable	Slight to medium	Slight	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	115-135	20-30	200-500
		OC	Clayey gravels, gravel-sand-clay mixtures	Good	Fair	Poor to not suitable	Slight to medium	Slight	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	130-145	20-40	200-500
	Sand and Sandy Soils	SW	Well-graded sands or gravelly sands, little or no fines	Good	Fair to good	Poor	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller	110-130	20-40	200-400
		SP	Poorly graded sands or gravelly sands, little or no fines	Fair to good	Fair	Poor to not suitable	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller	105-135	10-40	150-400
		SM d	Silty sands, sand-silt mixtures	Fair to good	Fair to good	Poor	Slight to high	Very slight	Fair to poor	Rubber-tired roller, sheepsfoot roller; close control of moisture	120-135	15-40	150-400
		SM u		Fair	Poor to fair	Not suitable	Slight to high	Slight to medium	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	100-130	10-20	100-300
		SC	Clayey sands, sand-clay mixtures	Poor to fair	Poor	Not suitable	Slight to high	Slight to medium	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	100-135	5-20	100-300
Fine-Grained Soils	Silts and Clays LL is less than 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	Poor to fair	Not suitable	Not suitable	Medium to very high	Slight to medium	Fair to poor	Rubber-tired roller, sheepsfoot roller; close control of moisture	90-130	15 or less	100-200
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	Poor to fair	Not suitable	Not suitable	Medium to high	Medium	Practically impervious	Rubber-tired roller, sheepsfoot roller	90-130	15 or less	50-150
		OL	Organic silts and organic silt-clays of low plasticity	Poor	Not suitable	Not suitable	Medium to high	Medium to high	Poor	Rubber-tired roller, sheepsfoot roller	90-105	5 or less	50-100
	Silts and Clays LL is Greater than 50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	Poor	Not suitable	Not suitable	Medium to very high	High	Fair to poor	Sheepsfoot roller, rubber-tired roller	80-105	10 or less	50-100
		CH	Inorganic clays of medium to high plasticity, organic silts	Poor to fair	Not suitable	Not suitable	Medium	High	Practically impervious	Sheepsfoot roller, rubber-tired roller	90-115	15 or less	50-150
		OH	Organic clays of high plasticity, fat clays	Poor to very poor	Not suitable	Not suitable	Medium	High	Practically impervious	Sheepsfoot roller, rubber-tired roller	80-110	5 or less	25-100
Highly Organic Soils		Pt	Peat and other highly organic soils	Not suitable	Not suitable	Not suitable	Slight	Very high	Fair to poor	Compaction not practical	—	—	—

Note:

(1) Unit Dry Weights are for compacted soil at optimum moisture content for modified AASHO compaction effort. Division of GM and SM groups into subdivision of d and u are for roads and airfields only. Subdivision is basis of Atterberg limits; suffix d (e.g., GMd) will be used when the liquid limit (LL) is 25 or less and the plasticity index is 6 or less; the suffix u will be used otherwise.

(2) The maximum value that can be used in design of airfields is, in some cases, limited by gradation and plasticity requirements.

GENERAL QUALIFICATIONS

This report has been prepared in order to aid in the evaluation of this property and to assist the architect and/or engineer in the design of this project. The scope of the project and location described herein, and my description of the project represents my understanding of the significant aspects relevant to soil and foundation characteristics. In the event that any changes in the design or location of the proposed facilities, as outlined in this report, are planned, I should be informed so the changes can be reviewed and the conclusions of this report modified or approved in writing by myself.

It is recommended that all construction operations dealing with earthwork and foundations be inspected by an experienced soil engineer to assure that the design requirements are fulfilled in the actual construction. If you wish, I would welcome the opportunity to review the plans and specifications when they have been prepared so that I may have the opportunity of commenting on the effect of soil conditions on the design and specifications.

The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings and/or test pits performed at the locations indicated on the location diagram and from any other information discussed in the report. This report does not reflect any variations which may occur between these boring and/or test pits. In the performance of subsurface investigations, specific information is obtained at specific locations at specific times. However, it is a well-known fact that variations in soil and rock conditions exist on most sites between boring locations and also such situations as groundwater conditions vary from time to time. The nature and extent of variations may may not become evident until the course of construction. If variations then appear evident, it will be necessary for a reevaluation of the recommendations of this report after performing on-site observations during the construction period and noting the characteristics of any variations.

APPENDIX #12

DATA ON FIRST DEFENSE HYDROYNAMIC SEPARATOR

First Defense®

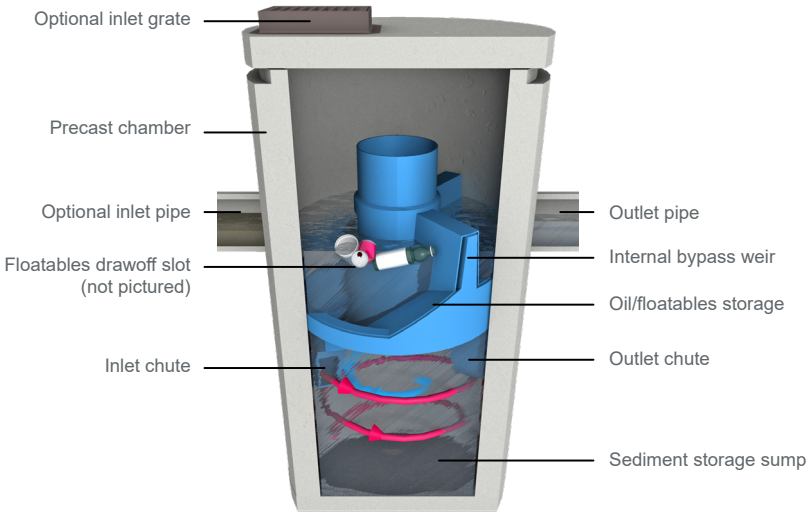
Advanced Hydrodynamic Separator

Product Summary

A Simple Solution for the Trickiest Sites

First Defense is a versatile stormwater separator with some of the highest approved flow rates in the United States. Engineers and contractors can save site space and reduce project costs by using the smallest possible footprint. It works with single or multiple inlet pipes and inlet grates. An internal bypass conveys infrequent peak flows directly to the outlet, efficiently capturing pollutants and preventing washouts.

Features



Contaminated stormwater runoff enters the inlet chute from a surface grate and/or inlet pipe. The inlet chute introduces flow into the chamber tangentially to create a low energy vortex flow regime (magenta arrow) that directs sediment into the sump while oils, floating trash and debris rise to the surface.

Treated stormwater exits through a submerged outlet chute located opposite to the direction of the rotating flow (blue arrow). Enhanced vortex separation is provided by forcing the rotating flow within the vessel to follow the longest path possible rather than directly from inlet to outlet.

Higher flows bypass the treatment chamber to prevent turbulence and washout of captured pollutants. An internal bypass conveys infrequent peak flows directly to the outlet eliminating the need for, and expense of, external bypass control structures. A floatables draw off slot functions to convey floatables into the treatment chamber prior to bypass.

Applications

- Areas requiring a minimum of 50% TSS removal
- Stormwater treatment at the point of entry into the drainage line
- Sites constrained by space, topography or drainage profiles with limited slope and depth of cover
- Highways, parking lots, industrial areas and urban developments
- Pre-treatment to ponds, storage systems, green infrastructure

Benefits

Highest Flow Through the Smallest Footprint

- **Smaller Footprint, Lower Costs**
  First Defense provides space-saving, easy-to-install surface water treatment in standard size chambers/manholes.
- **Adapt to Site Limitations**
  Variable configurations will help you effectively slip First Defense into a tight spot. It also works well with large pipes, multiple inlet pipes and inlet grates.
- **Reduce Installation Time & Costs**
  Every First Defense unit is delivered to site pre-assembled and ready for install.

Maintenance

Easy vactor hose access through the center shaft of the system makes for quick, simple sump cleanout while trash and floatables can be fished out from the surface with a net.

To ensure optimal performance, recommend Hydro International to your clients as the preferred service and maintenance provider.

Sizing & Specifications

First Defense units are available in **six diameters** to fit standard chamber and manhole sizes. The dimensions below are common across all model numbers.

Diameter	Peak Online Flow Rate	Maximum Pipe Diameter[1]	Typical Sediment Storage Capacity[2]	Minimum Distance from Outlet Invert to Top of Rim[3]	Standard Distance from Outlet Invert to Sump Floor
(ft / m)	(cfs / L/s)	(in / mm)	(yd^3 / m^3)	(ft / m)	(ft / m)
3 / 0.9	15 / 424	18 / 450	0.4 / 0.3	2.0 - 2.5 / 0.61 - 0.76	3.71 / 1.13
4 / 1.2	18 / 510	24 / 600	0.7 / 0.5	2.0 - 3.0 / 0.61 - 0.91	4.97 / 1.5
5 / 1.5	20 / 566	24 / 600	1.1 / .84	2.0 - 3.7 / 0.61 - 1.13	5.19 / 1.5
6 / 1.8	32 / 906	30 / 750	1.6 / 1.2	2.0 - 4.1 / 0.61 - 1.25	5.97 / 1.8
8 / 2.4	50 / 1415	48 / 1200	2.8 / 2.1	2.4 - 5.4 / 0.73 -1.65	7.40 / 2.2
10 / 3.0	50 / 1415	60 / 1500	4.4 / 3.3	2.4 - 6.8 / 0.73 - 2.07	10.25 / 3.12

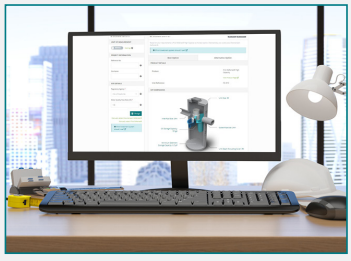
Hydro International offers First Defense units in **two versions** that conform to the performance requirements of different states' water quality regulations.[4]

First Defense High Capacity Model Number	Typical TSS Treatment Flow Rates	
	NJDEP Certified[4]	110µm
	(cfs / L/s)	(cfs / L/s)
FDHC-3	0.84 / 23.7	1.06 / 30.0
FDHC-4	1.50 / 42.4	1.88 / 53.2
FDHC-5	2.35 / 66.2	2.94 / 83.2
FDHC-6	3.38 / 95.7	4.23 / 119.8
FDHC-8	6.00 / 169.9	7.52 / 212.9
FDHC-10[5]	9.38 / 265.6	11.75 / 332.7

First Defense Optimum Model Number	NJDEP Certified Treatment Flow Rates[4]
	(cfs / L/s)
FDO-3	1.02 / 28.9
FDO-4	1.81 / 51.3
FDO-5	2.83 / 80.0
FDO-6	4.07 / 115.2
FDO-8	7.23 / 204.7
FDO-10[5]	11.33 / 320.6

[1]Contact Hydro International when larger pipe sizes are required.
[2]Contact Hydro International when custom sediment storage capacity is required.
[3]These are guidlines only. Minimum distance is based on pipe diameter and headloss at assumed flow rates, contact Hydro for detailed design.
[4]NJDEP Certified / NJCAT Verified, based on one inlet pipe and no inlet grate.
[5]Contact Hydro International for availability.

Stormwater Solutions
→ hydro-int.com/firstdefense



Free Online Design Tool

This free online sizing tool will recommend the best separator, model size and online or offline configuration based on site-specific data entered by the user.

Upon completion, users have the option to submit the design to Hydro International for a free review by our engineering team.

Go to hydro-int.com/sizing to access the tool.

Hydro International

Hydro International, 94 Hutchins Drive, Portland, ME 04102
Tel: (207) 756-6200
Email: stormwaterinquiry@hydro-int.com
Web: www.hydro-int.com/firstdefense

FD_SS_A_2109

Download Drawings:
→ hydro-int.com/fddrawings

Operation & Maintenance Manual:
→ hydro-int.com/fd-om

ATTACHMENT NO. 1

DEEP RIPPING & DECOMPACTION (APRIL 2008)

New York State
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water

Deep-Ripping and Decompaction

April 2008

New York State
Department of Environmental Conservation

Document Prepared by:

John E. Lacey,
Land Resource Consultant and Environmental Compliance Monitor
(Formerly with the Division of Agricultural Protection and Development Services,
NYS Dept. of Agriculture & Markets)

Alternative Stormwater Management
Deep-Ripping and Decompaction

Description

The two-phase practice of 1) "Deep Ripping;" and 2) "Decompaction" (deep subsoiling), of the soil material as a step in the cleanup and restoration/landscaping of a construction site, helps mitigate the physically induced impacts of soil compression; i.e.: soil compaction or the substantial increase in the bulk density of the soil material.

Deep Ripping and Decompaction are key factors which help in restoring soil pore space and permeability for water infiltration. Conversely, the physical actions of cut-and-fill work, land grading, the ongoing movement of construction equipment and the transport of building materials throughout a site alter the architecture and structure of the soil, resulting in: the mixing of layers (horizons) of soil materials, compression of those materials and diminished soil porosity which, if left unchecked, severely impairs the soil's water holding capacity and vertical drainage (rainfall infiltration), from the surface downward.

In a humid climate region, compaction damage on a site is virtually guaranteed over the duration of a project. Soil in very moist to wet condition when compacted, will have severely reduced permeability. Figure 1 displays the early stage of the deep-ripping phase (Note that all topsoil was stripped prior to construction access, and it remains stockpiled until the next phase – decompaction – is complete). A heavy-duty tractor is pulling a three-shank ripper on the first of several series of incrementally deepening passes through the construction access corridor's densely compressed subsoil material. Figure 2 illustrates the approximate volumetric composition of a loam surface soil when conditions are good for plant growth, with adequate natural pore space for fluctuating moisture conditions.

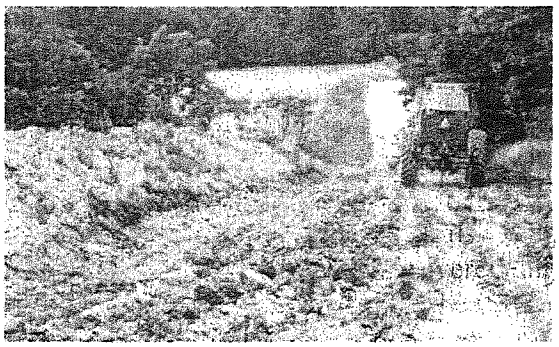


Fig. 1. A typical deep ripping phase of this practice, during the first in a series of progressively deeper "rips" through severely compressed subsoil.

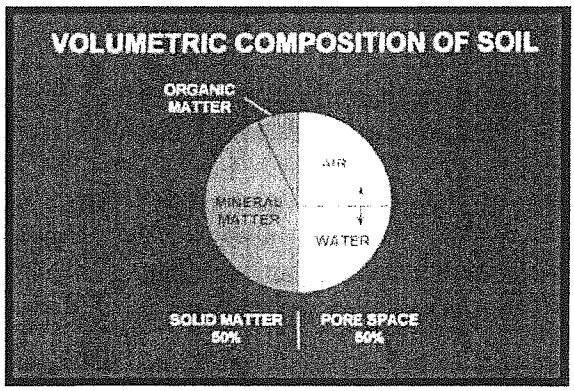


Fig. 2. About 50% of the volume of undisturbed loam surface soil is pore space, when soil is in good condition for plant growth. Brady, 2002.

Recommended Application of Practice

The objective of Deep Ripping and Decompaction is to effectively fracture (vertically and laterallly) through the thickness of the physically compressed subsoil material (see Figure 3), restoring soil porosity and permeability and aiding infiltration to help reduce runoff. Together with topsoil stripping, the "two-phase" practice of Deep Ripping and Decompaction first became established as a "best management practice" through ongoing success on commercial farmlands affected by heavy utility construction right-of-way projects (transmission pipelines and large power lines).

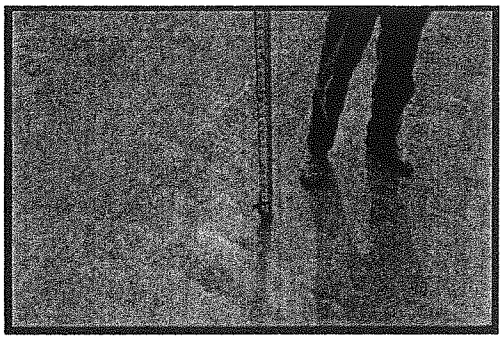


Fig. 3. Construction site with significant compaction of the deep basal till subsoil extends 24 inches below this exposed cut-and-fill work surface.

Soil permeability, soil drainage and cropland productivity were restored. For broader construction application, the two-phase practice of Deep Ripping and Decompaction is best adapted to areas impacted with significant soil compaction, on contiguous open portions of large construction sites and inside long, open construction corridors used as temporary access over the duration of construction. Each mitigation area should have minimal above-and-below-ground obstructions for the easy avoidance and maneuvering of a large tractor and ripping/decompacting implements. Conversely, the complete two-phase practice is not recommended in congested or obstructed areas due to the limitations on tractor and implement movement.

Benefits

Aggressive "deep ripping" through the compressed thickness of exposed subsoil before the replacement/respreading of the topsoil layer, followed by "decompaction," i.e.: "sub-soiling," through the restored topsoil layer down into the subsoil, offers the following benefits:

- Increases the project (larger size) area's direct surface infiltration of rainfall by providing the open site's mitigated soil condition and lowers the demand on concentrated runoff control structures
- Enhances direct groundwater recharge through greater dispersion across and through a broader surface than afforded by some runoff-control structural measures
- Decreases runoff volume generated and provides hydrologic source control
- May be planned for application in feasible open locations either alone or in

conjunction with plans for structural practices (e.g., subsurface drain line or infiltration basin) serving the same or contiguous areas

- Promotes successful long-term revegetation by restoring soil permeability, drainage and water holding capacity for healthy (rather than restricted) root-system development of trees, shrubs and deep rooted ground cover, minimizing plant drowning during wet periods and burnout during dry periods.

Feasibility/Limitations

The effectiveness of Deep Ripping and Decompaction is governed mostly by site factors such as: the original (undisturbed) soil's hydrologic characteristics; the general slope; local weather/timing (soil moisture) for implementation; the space-related freedom of equipment/implement maneuverability (noted above in **Recommended Application of Practice**), and by the proper selection and operation of tractor and implements (explained below in **Design Guidance**). The more notable site-related factors include:

Soil

In the undisturbed condition, each identified soil type comprising a site is grouped into one of four categories of soil hydrology, Hydrologic Soil Group A, B, C or D, determined primarily by a range of characteristics including soil texture, drainage capability when thoroughly wet, and depth to water table. The natural rates of infiltration and transmission of soil-water through the undisturbed soil layers for Group A is "high" with a low runoff potential while soils in Group B are moderate in infiltration and the transmission of soil-water with a moderate runoff potential, depending somewhat on slope. Soils in Group C have slow rates of infiltration and transmission of soil-water and a moderately high runoff potential influenced by soil texture and slope; while soils in Group D have exceptionally slow rates of infiltration and transmission of soil-water, and high runoff potential.

In Figure 4, the profile displays the undisturbed horizons of a soil in Hydrologic Soil Group C and the naturally slow rate of infiltration through the subsoil. The slow rate of infiltration begins immediately below the topsoil horizon (30 cm), due to the limited amount of macro pores, e.g.: natural subsoil fractures, worm holes and root channels. Infiltration after the construction-induced mixing and compression of such subsoil material is virtually absent; but can be restored back to this natural level with the two-phase practice of deep ripping and decompaction, followed by the permanent establishment of an appropriate, deep taproot

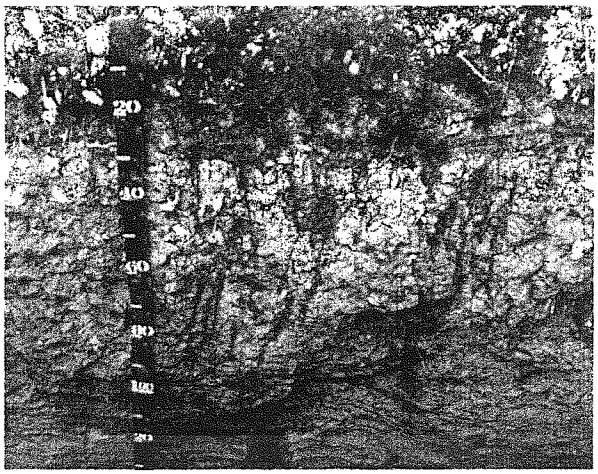


Fig. 4. Profile (in centimeters) displaying the infiltration test result of the natural undisturbed horizons of a soil in Hydrologic Soil Group C.

lawn/ground cover to help maintain the restored subsoil structure. Infiltration after construction-induced mixing and compression of such subsoil material can be notably rehabilitated with the Deep Ripping and Decompaction practice, which prepares the site for the appropriate long-term lawn/ground cover mix including deep taproot plants such as clover, fescue or trefoil, etc. needed for all rehabilitated soils.

Generally, soils in Hydrologic Soil Groups A and B, which respectively may include deep, well-drained, sandy-gravelly materials or deep, moderately well-drained basal till materials, are among the easier ones to restore permeability and infiltration, by deep ripping and decompaction. Among the many different soils in Hydrologic Soil Group C are those unique glacial tills having a natural fragipan zone, beginning about 12 to 18 inches (30 – 45cm), below surface. Although soils in Hydrologic Soil Group C do require a somewhat more carefully applied level of the Deep Ripping and Decompaction practice, it can greatly benefit such affected areas by reducing the runoff and fostering infiltration to a level equal to that of pre-disturbance.

Soils in Hydrologic Soil Group D typically have a permanent high water table close to the surface, influenced by a clay or other highly impervious layer of material. In many locations with clay subsoil material, the bulk density is so naturally high that heavy trafficking has little or no added impact on infiltration; and structural runoff control practices rather than Deep Ripping and Decompaction should be considered.

The information about Hydrologic Soil Groups is merely a general guideline. Site-specific data such as limited depths of cut-and-fill grading with minimal removal or translocation of the inherent subsoil materials (as analyzed in the county soil survey) or, conversely, the excavation and translocation of deeper, unconsolidated substratum or consolidated bedrock materials (unlike the analyzed subsoil horizons' materials referred to in the county soil survey) should always be taken into account.

Sites made up with significant quantities of large rocks, or having a very shallow depth to bedrock, are not conducive to deep ripping and decompation (subsoiling); and other measures may be more practical.

Slope

The two-phase application of 1) deep ripping and 2) decompaction (deep subsoiling), is most practical on flat, gentle and moderate slopes. In some situations, such as but not limited to temporary construction access corridors, inclusion areas that are moderately steep along a project's otherwise gentle or moderate slope may also be deep ripped and decompacted. For limited instances of moderate steepness on other projects, however, the post-construction land use and the relative alignment of the potential ripping and decompaction work in relation to the lay of the slope should be reviewed for safety and practicality. In broad construction areas predominated by moderately steep or steep slopes, the practice is generally not used.

Local Weather/Timing/Soil Moisture

Effective fracturing of compressed subsoil material from the exposed work surface, laterally and vertically down through the affected zone is achieved only when the soil material is moderately dry to moderately moist. Neither one of the two-phases, deep ripping nor decompaction (deep

subsoiling), can be effectively conducted when the soil material (subsoil or replaced topsoil) is in either a "plastic" or "liquid" state of soil consistency. Pulling the respective implements legs through the soil when it is overly moist only results in the "slicing and smearing" of the material or added "squeezing and compression" instead of the necessary fracturing. Ample drying time is needed for a "rippable" soil condition not merely in the material close to the surface, but throughout the material located down to the bottom of the physically compressed zone of the subsoil.

The "poor man's Atterberg field test" for soil plasticity is a simple "hand-roll" method used for quick, on-site determination of whether or not the moisture level of the affected soil material is low enough for: effective deep ripping of subsoil; respreading of topsoil in a friable state; and final decompaction (deep subsoiling). Using a sample of soil material obtained from the planned bottom depth of ripping, e.g.: 20 - 24 inches below exposed subsoil surface, the sample is hand rolled between the palms down to a 1/8-inch diameter thread. (Use the same test for stored topsoil material before respreading on the site.) If the respective soil sample crumbles apart in segments no greater than 3/8 of an inch long, by the time it is rolled down to 1/8 inch diameter, it is low enough in moisture for deep ripping (or topsoil replacement), and decompaction. Conversely, as shown in Figure 5, if the rolled sample stretches out in increments greater than 3/8 of an inch long before crumbling, it is in a "plastic" state of soil consistency and is too wet for subsoil ripping (as well as topsoil replacement) and final decompaction.

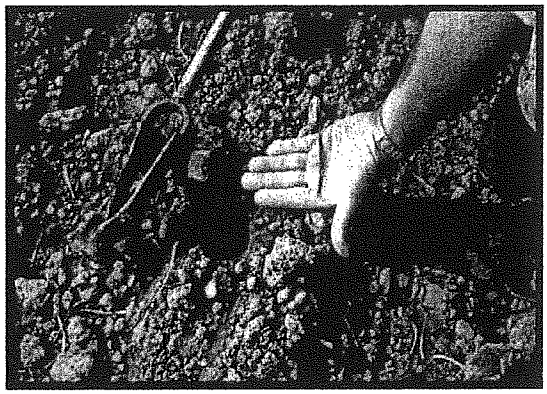


Fig. 5. Augered from a depth of 19 inches below the surface of the replaced topsoil, this subsoil sample was hand rolled to a 1/8-inch diameter. The test shows the soil at this site stretches out too far without crumbling; it indicates the material is in a plastic state of consistence, too wet for final decompaction (deep subsoiling) at this time.

Design Guidance

Beyond the above-noted site factors, a vital requirement for the effective Deep Ripping and Decompaction (deep subsoiling), is implementing the practice in its distinct, two-phase process:

1) Deep rip the affected thickness of exposed subsoil material (see Figure 10 and 11), aggressively fracturing it before the protected topsoil is reapplied on the site (see Figure 12); and

2) Decompact (deep subsoil), simultaneously through the restored topsoil layer and the upper half of the affected subsoil (Figure 13). The second phase, "decompaction," mitigates the partial recompaction which occurs during the heavy process of topsoil spreading/grading. Prior to deep ripping and decompacting the site, all construction activity, including construction equipment and material storage, site cleanup and trafficking (Figure 14), should be finished; and the site closed off to further disturbance. Likewise, once the practice is underway and the area's soil permeability and

rainfall infiltration are being restored, a policy limiting all further traffic to permanent travel lanes is maintained.

The other critical elements, outlined below, are: using the proper implements (deep, heavy-duty rippers and subsoilers), and ample pulling-power equipment (tractors); and conducting the practice at the appropriate speed, depth and pattern(s) of movement.

Note that an appropriate plan for the separate practice of establishing a healthy perennial ground cover, with deep rooting to help maintain the restored soil structure, should be developed in advance. This may require the assistance of an agronomist or landscape horticulturist.

Implements

Avoid the use of all undersize implements. The small-to-medium, light-duty tool will, at best, only "scarify" the uppermost surface portion of the mass of compacted subsoil material. The term "chisel plow" is commonly but incorrectly applied to a broad range of implements. While a few may be adapted for the moderate subsoiling of non-impacted soils, the majority are less durable and used for only lighter land-fitting (see Figure 6).

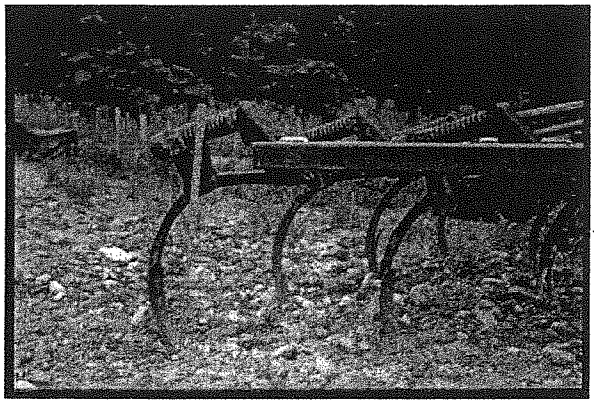


Fig. 6. A light duty chisel implement, not adequate for either the deep ripping or decompaction (deep subsoiling) phase.

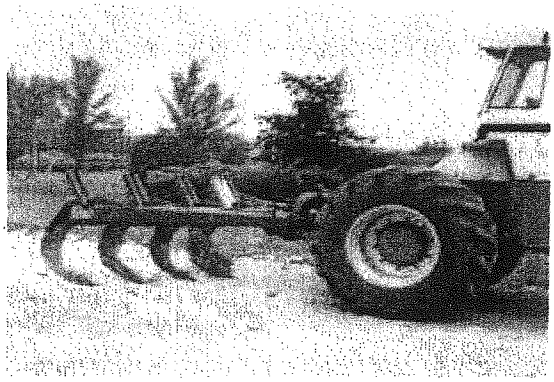


Fig. 7. One of several variations of an agricultural ripper. This unit has long, rugged shanks mounted on a steel V-frame for deep, aggressive fracturing through Phase 1.

Use a "heavy duty" agricultural-grade, deep ripper (see Figures 7,9,10 and 11) for the first phase: the lateral and vertical fracturing of the mass of exposed and compressed subsoil, down and through, to the bottom of impact, prior to the replacement of the topsoil layer. (Any oversize rocks which are uplifted to the subsoil surface during the deep ripping phase are picked and removed.) Like the heavy-duty class of implement for the first phase, the decompaction (deep subsoiling) of Phase 2 is conducted with the heavy-duty version of the deep subsoiler. More preferable is the angled-leg variety of deep subsoiler (shown in Figures 8 and 13). It minimizes the inversion of the subsoil and topsoil layers while laterally and vertically fracturing the upper half of the previously ripped subsoil layer and all of the topsoil layer by delivering a momentary, wave-like "lifting and shattering" action up through the soil layers as it is pulled.

Pulling-Power of Equipment

Use the following rule of thumb for tractor horsepower (hp) whenever deep ripping and decompacting a significantly impacted site: For both types of implement, have at least 40 hp of tractor pull available for each mounted shank/ leg.

Using the examples of a 3-shank and a 5-shank implement, the respective tractors should have 120 and 200 hp available for fracturing down to the final depth of 20-to-24 inches per phase. Final depth for the deep ripping in Phase 1 is achieved incrementally by a progressive series of passes (see Depth and Patterns of Movement, below); while for Phase 2, the full operating depth of the deep subsoiler is applied from the beginning.

The operating speed for pulling both types of implement should not exceed 2 to 3 mph. At this slow and managed rate of operating speed, maximum functional performance is sustained by the tractor and the implement performing the soil fracturing. Referring to Figure 8, the implement is the 6-leg version of the deep angled-leg subsoiler. Its two outside legs are "chained up" so that only four legs will be engaged (at the maximum depth), requiring no less than 160 hp, (rather than 240 hp) of pull. The 4-wheel drive, articulated-frame tractor in Figure 8 is 174 hp. It will be decompacting this unobstructed, former construction access area simultaneously through 11 inches of replaced topsoil and the upper 12 inches of the previously deep-ripped subsoil. In constricted areas of Phase 1) Deep Ripping, a medium-size tractor with adequate hp, such as the one in Figure 9 pulling a 3-shank deep ripper, may be more maneuverable.

Fig. 8. A deep, angled-leg subsoiler, ideal for Phase 2 decompaction of after the topsoil layer is graded on top of the ripped subsoil.

Fig. 9. This medium tractor is pulling a 3-shank deep ripper. The severely compacted construction access corridor is narrow, and the 120 hp tractor is more maneuverable for Phase 1 deep ripping (subsoil fracturing), here.

Some industrial-grade variations of ripping implements are attached to power graders and bulldozers. Although highly durable, they are generally not recommended. Typically, the shanks or "teeth" of these rippers are too short and stout; and they are mounted too far apart to achieve the well-distributed type of lateral and vertical fracturing of the soil materials necessary to restore soil permeability and infiltration. In addition, the power graders and bulldozers, as pullers, are far less maneuverable for turns and patterns than the tractor.

Depth and Patterns of Movement

As previously noted both Phase 1 Deep Ripping through significantly compressed, exposed subsoil and Phase 2 Decompaction (deep subsoiling) through the replaced topsoil and upper subsoil need to be performed at maximum capable depth of each implement. With an implement's guide wheels attached, some have a "normal" maximum operating depth of 18 inches, while others may go deeper. In many situations, however, the tractor/implement operator must first remove the guide wheels and other non essential elements from the implement. This adapts the ripper or the deep subsoiler for skillful pulling with its frame only a few inches above surface, while the shanks or legs, fracture the soil material 20-to-24 inches deep.

There may be construction sites where the depth of the exposed subsoil's compression is moderate, e.g.: 12 inches, rather than deep. This can be verified by using a ¾ inch cone penetrometer and a shovel to test the subsoil for its level of compaction, incrementally, every three inches of increasing depth. Once the full thickness of the subsoil's compacted zone is finally "pieced" and there is a significant drop in the psi measurements of the soil penetrometer, the depth/thickness of compaction is determined. This is repeated at several representative locations of the construction site. If the thickness of the site's subsoil compaction is verified as, for example, ten inches, then the Phase 1 Deep Ripping can be correspondingly reduced to the implement's minimum operable depth of 12 inches. However, the Phase 2 simultaneous Decompation (subsoiling) of an 11 inch thick layer of replaced topsoil and the upper subsoil should run at the subsoiling implements full operating depth.

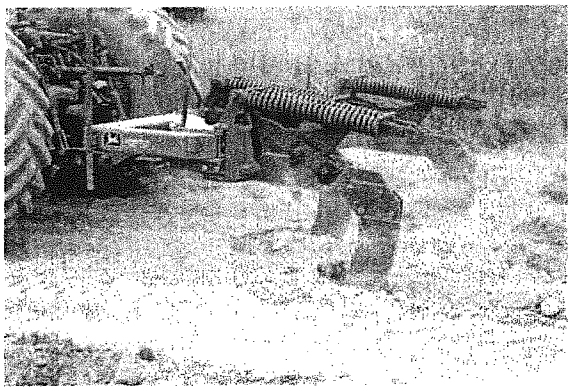


Fig. 10. An early pass with a 3-shank deep ripper penetrating only 8 inches into this worksite's severely compressed subsoil.

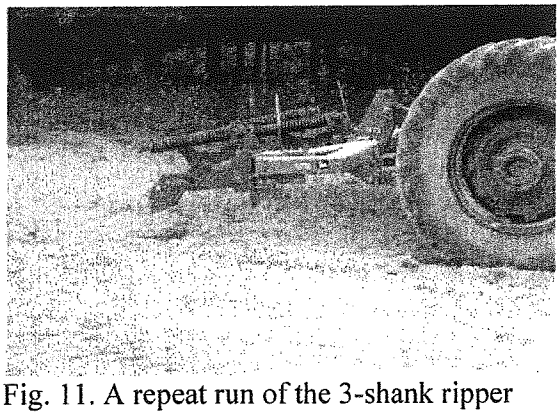


Fig. 11. A repeat run of the 3-shank ripper along the same patterned pass area as Fig. 9; here, incrementally reaching 18 of the needed 22 inches of subsoil fracture.

Typically, three separate series (patterns) are used for both the Phase 1 Deep Ripping and the Phase 2 Decompaction on significantly compacted sites. For Phase 1, each series begins with a moderate depth of rip and, by repeat-pass, continues until full depth is reached. Phase 2 applies the full depth of Decompation (subsoiling), from the beginning.

Every separate series (pattern) consists of parallel, forward-and-return runs, with each progressive

pass of the implement's legs or shanks evenly staggered between those from the previous pass. This compensates for the shank or leg-spacing on the implement, e.g., with 24-to-30 inches between each shank or leg. The staggered return pass ensures lateral and vertical fracturing actuated every 12 to 15 inches across the densely compressed soil mass.

Large, Unobstructed Areas

For larger easy areas, use the standard patterns of movement:

- The first series (pattern) of passes is applied lengthwise, parallel with the longest spread of the site; gradually progressing across the site's width, with each successive pass.

- The second series runs obliquely, crossing the first series at an angle of about 45 degrees.

- The third series runs at right angle (or 90 degrees), to the first series to complete the fracturing and shattering on severely compacted sites, and avoid leaving large unbroken blocks of compressed soil material. (In certain instances, the third series may be optional, depending on how thoroughly the first two series loosen the material and eliminate large chunks/blocks of material as verified by tests with a ¾-inch cone penetrometer.)

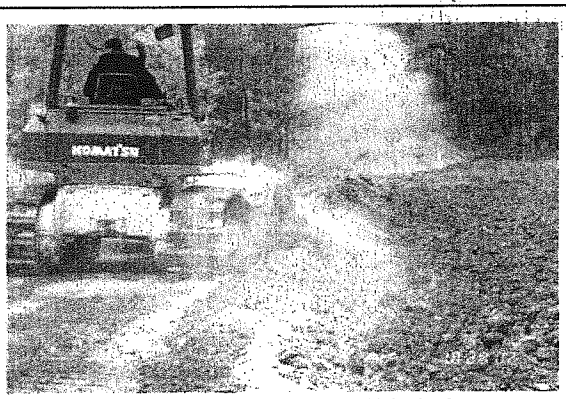


Fig. 12. Moderately dry topsoil is being replaced on the affected site now that Phase 1 deep ripping of the compressed subsoil is complete.

Fig. 13. The same deep, angled-leg subsoiler shown in Fig. 7 is engaged at maximum depth for Phase 2, decompaction (deep soiling), of the replaced topsoil and the upper subsoil materials.

Corridors

In long corridors of limited width and less maneuverability than larger sites, e.g.: along compacted areas used as temporary construction access, a modified series of pattern passes are used.

- First, apply the same initial lengthwise, parallel series of passes described above.

- A second series of passes makes a broad "S" shaped pattern of rips, continually and gradually alternating the "S" curves between opposite edges inside the compacted corridor.

- The third and final series again uses the broad, alternating S pattern, but it is "flip-flopped" to continually cross the previous S pattern along the corridor's centerline. This final series of the S pattern curves back along the edge areas skipped by the second series.

Maintenance and Cost

Once the two-phase practice of Deep Ripping and Decompation is completed, two items are essential for maintaining a site's soil porosity and permeability for infiltration. They are: planting and maintaining the appropriate ground cover with deep roots to maintain the soil structure (see Figure 15); and keeping the site free of traffic or other weight loads.

Note that site-specific choice of an appropriate vegetative ground-cover seed mix, including the proper seeding ratio of one or more perennial species with a deep taproot system and the proper amount of lime and soil nutrients (fertilizer mix) adapted to the soil-needs, are basic to the final practice of landscaping, i.e: surface tillage, seeding/planting/fertilizing and culti-packing or mulching is applied. The "maintenance" of an effectively deep-ripped and decompacted area is generally limited to the successful perennial (long-term) landscape ground cover; as long as no weight-bearing force of soil compaction is applied.

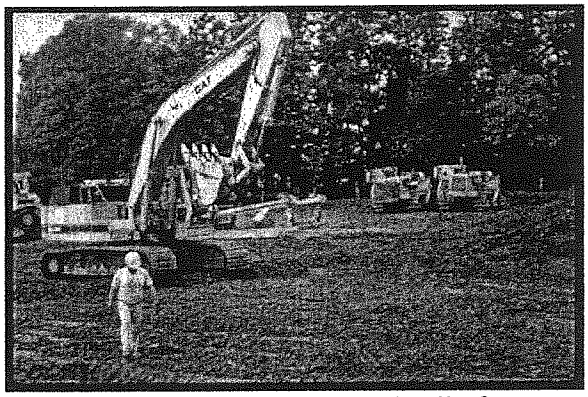


Fig. 14. The severely compacted soil of a temporary construction yard used daily by heavy equipment for four months; shown before deep ripping, topsoil replacement, and decompaction.

Fig. 15. The same site as Fig. 14 after deep ripping of the exposed subsoil, topsoil replacement, decompaction through the topsoil and upper subsoil and final surface tillage and revegetation to maintain soil permeability and infiltration.

The Deep Ripping and Decompaction practice is, by necessity, more extensive than periodic subsoiling of farmland.The cost of deep ripping and decompacting (deep subsoiling), will vary according to the depth and severity of soil-material compression and the relative amount of tractor and implement time that is required. In some instances, depending on open maneuverability, two-to-three acres of compacted project area may be deep-ripped in one day. In other situations of more severe compaction and - or less maneuverability, as little as one acre may be fully ripped in a day. Generally, if the Phase 1) Deep Ripping is fully effective, the Phase 2) Decompaction should be completed in 2/3 to 3/4 of the time required for Phase 1.

Using the example of two acres of Phase 1) Deep Ripping in one day, at $1800 per day, the net cost is $900 per acre. If the Phase 2) Decompacting or deep subsoiling takes 3/4 the time as Phase 1, it costs $675 per acre for a combined total of $1575 per acre to complete the practice (these figures do not include the cost of the separate practice of topsoil stripping and replacement). Due to the many variables, it must be recognized that cost will be determined by the specific conditions or constraints of the site and the availability of proper equipment.

Resources

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- Union Gas Limited, Ontario, Canada. 1984. *Rehabilitation of Agricultural Lands, Dawn-Kerwood Loop Pipeline; Technical Report.* Ecological Services for Planning, Ltd.; Robinson, Merritt & Devries, Ltd. and Smith, Hoffman Associates, Ltd.
- US Department of Agriculture in cooperation with Cornell University Agricultural Experiment Station. Various years. *Soil Survey of (various names) County, New York.* USDA.

Internet Access:

- Examples of implements:

V-Rippers. Access by internet search of *John Deere Ag -New Equipment for 915* (larger-frame model) *V-Rippe;* and, *for 913* (smaller-frame model) *V-Ripper.* Deep, angled-leg subsoiler. Access by internet search of: *Bigham Brothers Shear Bolt Paratill-Subsoiler.* http://salesmanual.deere.com/sales/salesmanual/en_NA/primary_tillage/2008/feature/rippers/915v_pattern_frame.html?sbu=ag&link=prodcat Last visited March 08.

- Soils data of USDA Natural Resources Conservation Service. *NRCS Web Soil Survey.* http://websoilsurvey.nrcs.usda.gov/app/ and *USDA-NRCS Official Soil Series Descriptions; View by Name.* http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi . *Last visited Jan. 08.*
- Soil penetrometer information. Access by internet searches of: *Diagnosing Soil Compaction using a Penetrometer (soil compaction tester), PSU Extension;* as well as *Dickey-john Soil Compaction Tester.* http://www.dickey-johnproducts.com/pdf/SoilCompactionTest.pdf and http://cropsoil.psu.edu/Extension/Facts/uc178pdf Last visited Sept. 07

ATTACHMENT NO. 2

CERTIFICATION OF CONTRACTOR

Contractor/Subcontractor SWPPP Certification

NOTE: This SWPPP identifies for each measure identified in the SWPPP, the contractor(s) and subcontractor(s) that will implement the measure. All contractors and subcontractors identified in the SWPPP must sign a copy of the certification statement. All certifications must be included in the SWPPP. Additionally, new contractors and subcontractors need to similarly certify. All contractors and subcontractors identified in a SWPPP shall sign a copy of this certification statement before undertaking any construction activity at the site identified in the SWPPP:

I hereby certify 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 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 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.

SERVICES PROVIDED BY THIS CONTRACTOR/SUBCONTRACTOR:
(Contractor/Subcontractor must complete)
List all trades covered:

_____

_____

_____

_____
Signature

_____
Name & Title (Print or Type)

_____
Name of Entity Constituting Contractor/Subcontractor (Print or Type)

_____
Address of Entity Constituting Contractor/Subcontractor (Print or Type)

_____
Phone Number/Fax Number of Entity Constituting Contractor/Subcontractor (Print or Type)

Signatory Requirements – This SWPPP certification shall be signed as follows:

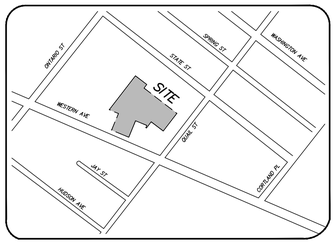
a. For a corporation: by (1) a president, secretary, treasurer, or vice- president of the corporation in charge of a principal business function, or any other person authorized to and who performs similar policy or decision making functions for the corporation; or (2) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25,000,000 (in second-quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

MAP POCKET #1

SHEET C-3

SITE PLAN



VICINITY MAP

MAP NOT TO SCALE

CITY OF ALBANY NOTES

SITE REQUIREMENTS:

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE FOLLOWING:

THE REMOVAL AND REPLACING OF ALL EXISTING SIDEWALKS, CURBS, STREET PAVEMENT, TREES, BRICK PAVERS, AND SHRUBBERY DAMAGED DURING THE COURSE OF THIS PROJECT AND WITHIN THE FULL LIMITATIONS OF THE PROJECT.

IT WILL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT ALL METHODS AVAILABLE HAVE BEEN TAKEN TO PROTECT ALL THE AFOREMENTIONED ENTITIES BEFORE CONSTRUCTION WORK BEGINS.

IF AT ANY TIME DURING SAID CONSTRUCTION, THE CITY ENGINEER OR HIS REPRESENTATIVE DEEM THAT ANY AND/OR ALL PORTIONS OF SIDEWALK, CURB PAVEMENT AND/OR ANY OTHER APPURTENANCES HAVE BEEN DAMAGED BY EITHER THE GENERAL CONTRACTOR OR ANY OF HIS SUB-CONTRACTORS, IT WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO MAKE ALL REPAIRS AND/OR CORRECTIONS TO SAID AREAS WITHOUT ANY COST TO THE CITY OF ALBANY.

PERMIT REQUIREMENTS:

THE GENERAL CONTRACTOR, PRIOR TO BEGINNING ANY WORK ON SAID PROJECT, WILL PROCURE THE FOLLOWING PERMITS WHERE APPLICABLE:

*ENGINEERING DEPARTMENT	*DEPARTMENT OF GENERAL SERVICES
*GRADING AND MINING	*CURB CUT APPLICATION
*SANITARY/STORM SEWER	*SIDEWALK/CURB RESTORATION
*RETAINING WALL	*STREET RESTORATION
**WATER DEPARTMENT	**WATER SERVICE

THE CONTRACTOR WILL PROCURE BEFORE BEGINNING OF CONSTRUCTION ALL REQUIRED PERMITS LIABILITY INSURANCE FOR $1,000,000.00 AND A PERFORMANCE BOND AS ASSESSED BY CITY ENGINEER. BOND AND LIABILITY INSURANCE TO BE SUBMITTED TO THE ENGINEERING DEPARTMENT BEFORE THE GENERAL CONTRACTOR INTENDS TO BEGIN ANY SITE EXCAVATION.

THE CONTRACTOR WILL NOTIFY THE ENGINEERING DEPARTMENT FORTY-EIGHT (48) HOURS PRIOR TO PERFORMING ALL UTILITY OR SITE RESTORATION WORK. FAILURE TO NOTIFY THE ENGINEERING DEPARTMENT BEFORE BEGINNING WORK COULD RESULT IN A ONE HUNDRED DOLLAR ($100.00) FINE FOR EACH DAY THE OFFENSE OCCURS.

THE CONTRACTOR WILL NOTIFY THE DEPARTMENT OF WATER AND WATER SUPPLY FORTY-EIGHT (48) HOURS PRIOR TO SCHEDULE AN INSPECTION FOR WATER, SANITARY AND STORM UTILITY WORK.

NOTES

1. THE CONTRACTOR SHALL OBTAIN A STREET OPENING PERMIT AND A STREET ACCESS APPLICATION (CURB-CUT) FROM THE DEPARTMENT OF GENERAL SERVICES FOR ANY WORK WITHIN THE CITY'S ROW. CONTACT GARY BOHL AT 518-462-3529

2. A GRADING PERMIT IS REQUIRED. CONTRACTOR TO CONTACT PATRICK MCCUTCHEON, ENGINEERING DEPARTMENT (518-434-2387) FOR APPLICATION AND REVIEW.

3. A MAINTENANCE AND PROTECTION OF TRAFFIC IS REQUIRED PRIOR TO THE START OF WORK. CONTACT WILLIAM TRUDEAU, APD/TRAFFIC ENGINEERING AND SAFETY AT 518-434-5791.

4. NEW CONCRETE SIDEWALKS SHALL BE POURED AT ANY LOCATION THAT CONSTRUCTION HAS DAMAGED EXISTING. ALL PLANTINGS SHALL BE REVIEWED WITH COA FORESTRY. STREET OPENING PERMIT FOR ALL UTILITY TIE-INS, DRIVEWAY AND SIDEWALK CONSTRUCTION.

LEGEND

R.O.W.	RIGHT OF WAY		MONUMENT
No.	NUMBER		IRON ROD
enc.	ENCROACHMENT	MH	MANHOLE
P.O.B.	POINT OF BEGINNING	OR	CATCHBASIN
S.F.	SQUARE FEET		SIGN
N/F	NOW OR FORMERLY		BOLLARD
Ft.	FEET	x	FENCE LINE
Deg.	DEGREE		GUARD RAIL
R	RECORD		OVERHEAD WIRE, UTILITY POLE & GUY WIRE
M	MEASURED		TRAFFIC FLOW ACCESS AREA
N	NORTH		WATER SHUT OFF
S	SOUTH	YD	YARD DRAIN
E	EAST	WV	WATER VALVE
W	WEST		HYDRANT
tel.	TELEPHONE	GV	GAS VALVE
elec.	ELECTRIC		STREET LIGHT
L.	LIBER		LIGHT POLE
P.	PAGE		CONCRETE
	TREE		PAVEMENT

PROPOSED CONCRETE

PROPOSED PAVEMENT

PROPOSED WATER MAIN (W)

PROPOSED SANITARY SEWER (S)

PROPOSED STORM SEWER (ST)

PROPOSED CONTOURS (199 / 200)

PROPOSED CATCH BASIN

PROPOSED RETAINING WALL

PROPOSED CONCRETE CURB

PROPOSED LIGHT POLE

PROPOSED WALL PACK

PARKING ANALYSIS TABLE

description	requirment	quantity	# required
dwelling, mutli family	1 per unit	83	83
commercial area	1 per 150 SF	6,240 SF	42
total off-street parking spaces required (after proximity to transit adjustment and with allowance for shared parking)			91
on street parking (Quail Street)			6
on street parking (Western Ave)			3
off street spaces provided			82
total parking spaces (INCLUDING 4 H.C.)			69

EXISTING SITE COVERAGE STATISTICS

description	s.f.	acres	%
gross site area	70,794	1.62	100.00
impervious area	42,697	0.98	60.4
building coverage	18,768	0.43	26.5
pavement/sidewalk coverage	23,929	0.55	33.9
pervious area	28,097	0.64	39.6

RECREATION SPACE TABLE

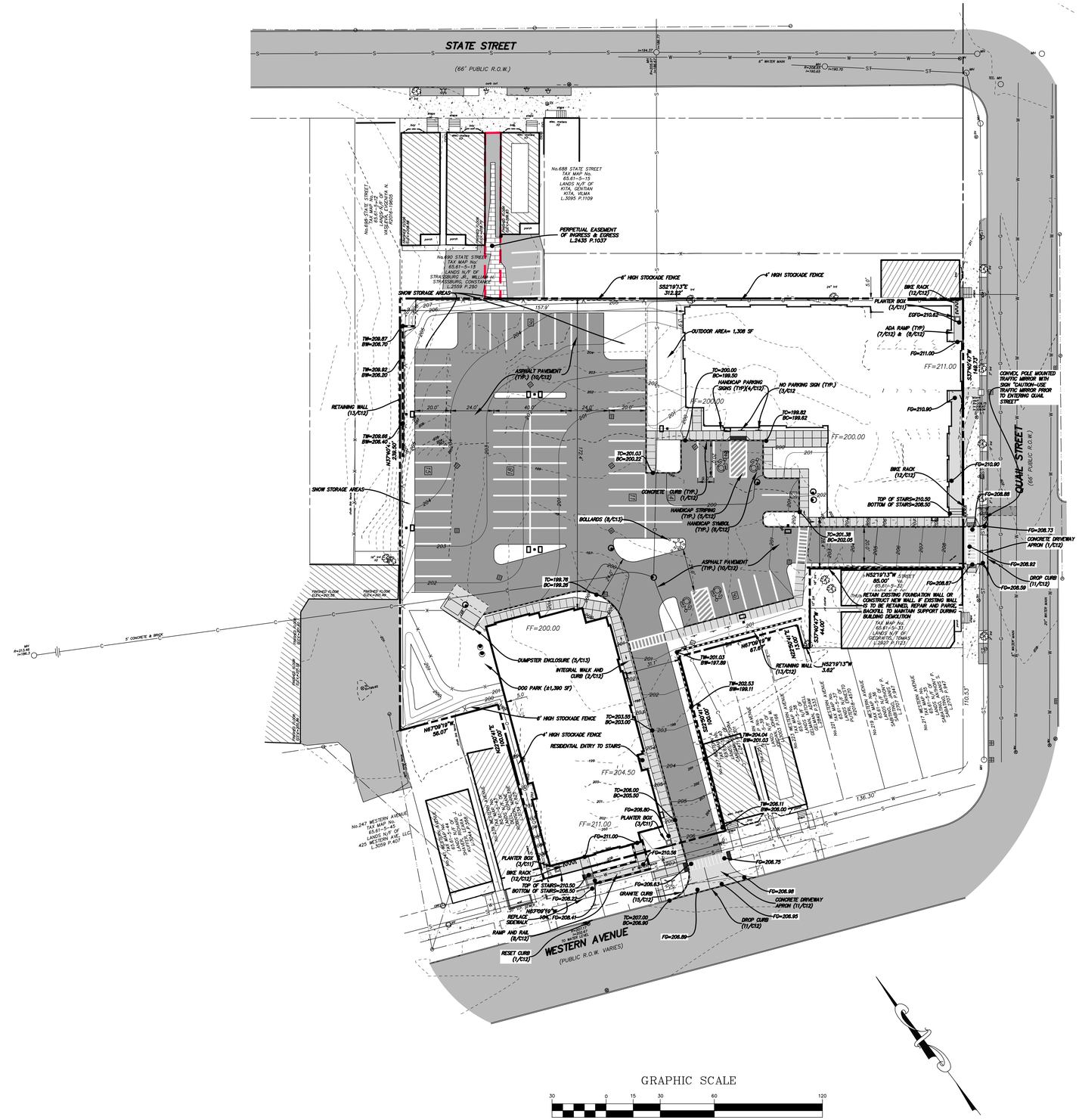
description	requirment	quantity	# required
dwelling, mutli family	10% of site area	70,794 sf	7,794 sf
area 1: dog park			1,390 sf
area 2: outdoor area			1,308 sf
area 3: indoor recreation (gym, lounge, etc.)			5,096 sf
TOTAL			7,794 sf

PROPOSED SITE COVERAGE STATISTICS

description	s.f.	acres	%
gross site area	70,794	1.62	100.00
impervious area	55,966	1.29	79.1
building coverage	22,270	0.51	31.5
pavement/sidewalk coverage	33,696	0.77	47.6
pervious area	14,828	0.33	20.9

STREET FURNITURE REQUIRED AT #237 WESTERN AVENUE

SITE FRONTAGES	L.F.
TOTAL #237	254
TOTAL PIECES OF STREET FURNITURE REQUIRED AT 1 PER 50 FEET (2 BIKE RACKS, 3 PLANTER BOXES)	5



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

HERSHBERG & HERSHBERG

Consulting Engineers and Land Surveyors

18 Locust Street
Albany, New York 12203

STATE OF NEW YORK — DANIEL R. HERSHBERG — LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR — 044226

REVISIONS

REMARKS	DATE
PERMIT SET	7/24/19
AND COMMENTS	9/5/19
STORM SEWER REVISED	9/10/19
GENERAL REVISIONS	8/27/21
BUILDING LAYOUT REV	10/11/21
COMMENT REVISIONS	10/20/21

SITE PLAN
LOFTS AT PINE HILLS
237 WESTERN AVENUE
CITY OF ALBANY, NEW YORK STATE, ALBANY COUNTY

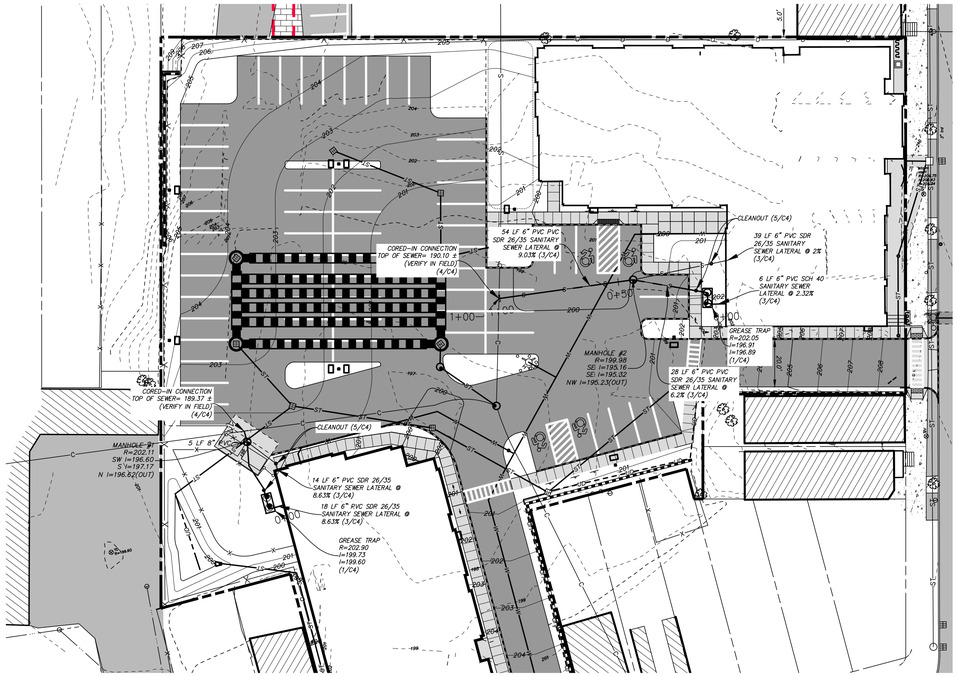
FILE: 180172 | SCALE: 1"=30' | BY: WD | CHK: DRH | DATE: 7/9/19 | 180172-1.DWG

C3 OF 15

MAP POCKET #2

SHEET C-4

SEWER PLAN, PROFILE, AND DETAILS



SANITARY SEWER PLAN

SCALE=1"=30'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

LEGEND

R.O.W.	RIGHT OF WAY		MONUMENT
No.	NUMBER		IRON ROD
enc.	ENCROACHMENT	MH	MANHOLE
P.O.B.	POINT OF BEGINNING	CB	CATCHBASIN
S.F.	SQUARE FEET		SIGN
N/F	NOW OR FORMERLY		BOLLARD
Ft.	FEET	x	FENCE LINE
Deg.	DEGREE		GUARD RAIL
R	RECORD		OVERHEAD WIRE, UTILITY POLE & GUY WIRE
M	MEASURED		TRAFFIC FLOW ACCESS AREA
N	NORTH		WATER SHUT OFF
S	SOUTH	YD	YARD DRAIN
E	EAST	WV	WATER VALVE
W	WEST		HYDRANT
tel.	TELEPHONE	GV	GAS VALVE
elec.	ELECTRIC		STREET LIGHT
L.	LIBER		LIGHT POLE
P.	PAGE		CONCRETE
	TREE		PAVEMENT

PROPOSED CONCRETE

PROPOSED PAVEMENT

W PROPOSED WATER MAIN

S PROPOSED SANITARY SEWER

ST PROPOSED STORM SEWER

199 / 200 PROPOSED CONTOURS

PROPOSED CATCH BASIN

PROPOSED RETAINING WALL

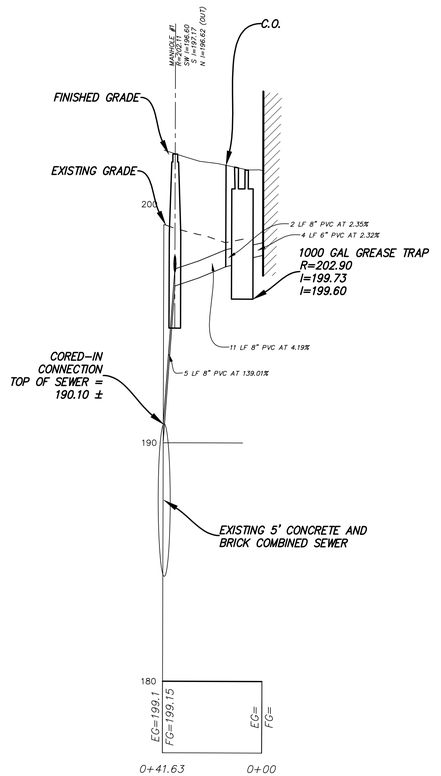
PROPOSED CONCRETE CURB

NOTES

1. 48 HOURS NOTICE MUST BE GIVEN TO DEPARTMENT OF WATER FOR INSPECTIONS FOR THE SANITARY, WATER AND STORMWATER UTILITIES.

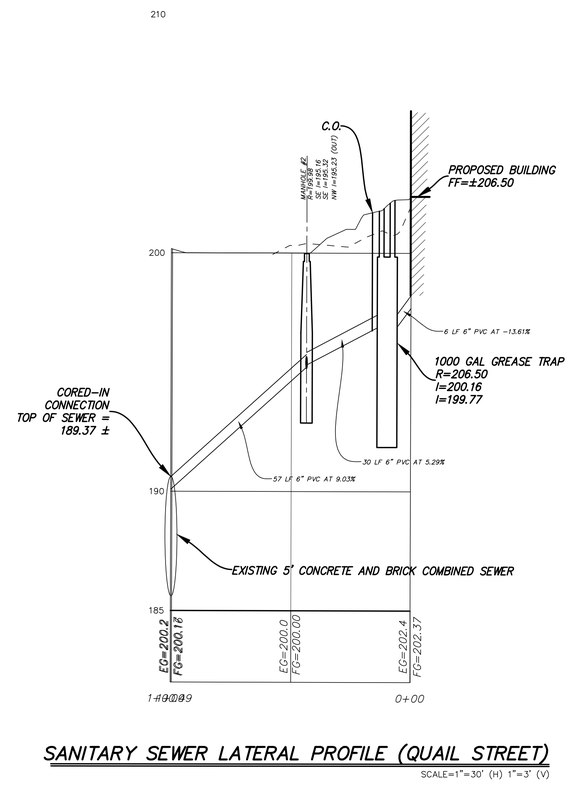
2. BACKFLOW PREVENTORS TO BE INSTALLED ON SANITARY SEWER LATERALS.

3. LOCATION OF EXISTING SANITARY SEWER LATERALS ARE UNKNOWN. CONTRACTOR TO LOCATE IN FIELD. DOCUMENTATION OF PROPOSED EASEMENTS WILL BE PROVIDED ONCE LOCATIONS OF EXISTING SANITARY SEWER LATERALS ARE FOUND.



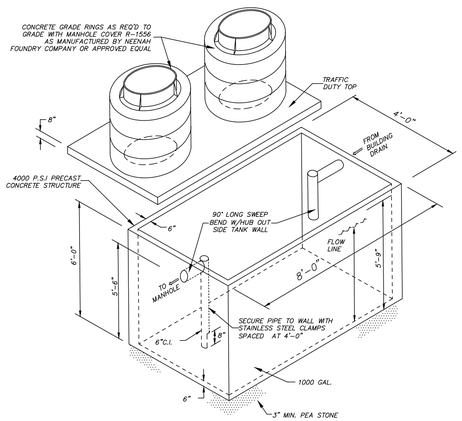
SANITARY SEWER LATERAL PROFILE (QUAIL STREET)

SCALE=1"=30' (H) 1"=3' (V)



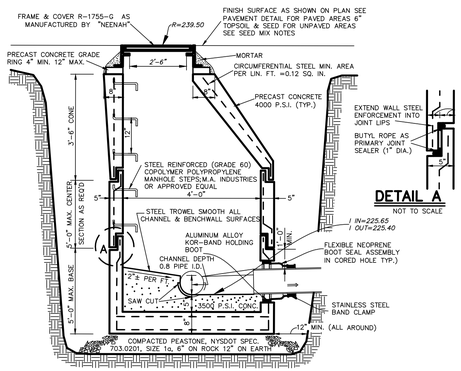
SANITARY SEWER LATERAL PROFILE (WESTERN AVENUE)

SCALE=1"=30' (H) 1"=3' (V)



1/C4 GREASE & OIL INTERCEPTOR DETAIL

NOT TO SCALE

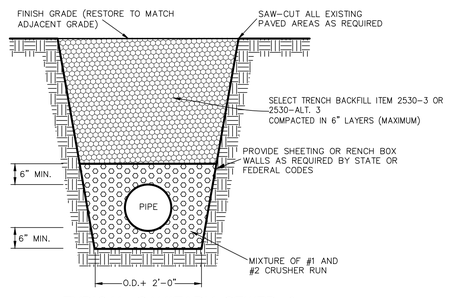


DETAIL A

NOT TO SCALE

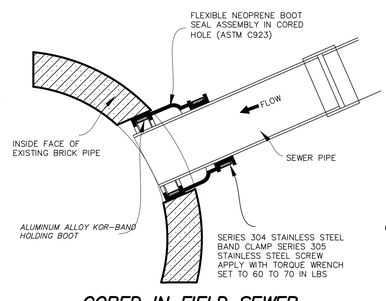
2/C4 SANITARY SEWER MANHOLE DETAIL

NOT TO SCALE



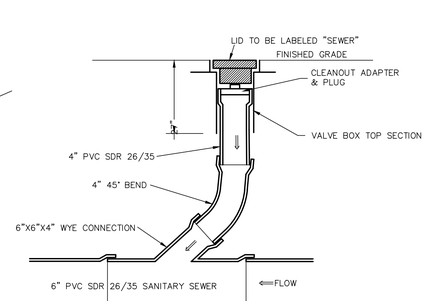
3/C4 TYPICAL SANITARY SEWER & WATER MAIN TRENCH DETAIL

NOT TO SCALE



4/C4 CORED IN FIELD SEWER PIPE CONNECTION

NOT TO SCALE



5/C4 IN LINE CLEANOUT DETAIL

NOT TO SCALE

HERSHBERG & HERSHBERG
Consulting Engineers and Land Surveyors
18 Locust Street
Albany, New York 12203

STATE OF NEW YORK DANIEL R. HERSHBERG 044226 LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR

REVISIONS

REMARKS	DATE
PERMIT SET	7/24/19
AND COMMENTS	9/5/19
STORM SEWER REVISED	9/10/19
GENERAL REVISIONS	8/27/20
BUILDING LAYOUT REV	10/01/21
COMMENT REVISIONS	10/20/21

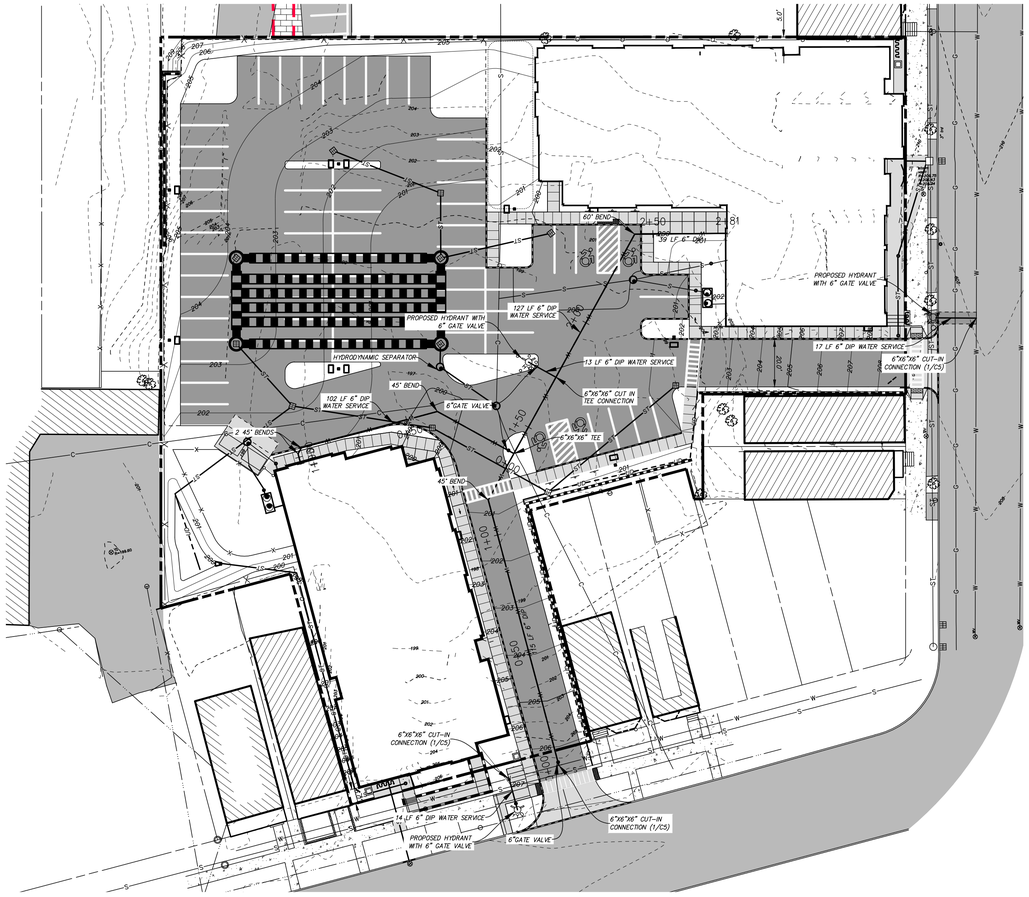
SEWER PLAN, PROFILE, AND DETAILS FOR
LOFTS AT PINE HILLS
237 WESTERN AVENUE
CITY OF ALBANY, NEW YORK STATE, ALBANY COUNTY

FILE: 180312 | SCALE: 1"=30' | BY: ND | CHK: DRH | DATE: 2/26/19 | 180312-1.DWG

MAP POCKET #3

SHEET C-5

WATER PLAN, PROFILE, AND DETAILS



WATER SERVICE PROFILE

SCALE=1"=30' (H) 1"=3' (V)

WATER PLAN

SCALE=1"=30'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

LEGEND

R.O.W.	RIGHT OF WAY		MONUMENT
No.	NUMBER		IRON ROD
enc.	ENCROACHMENT	MH	MANHOLE
P.O.B.	POINT OF BEGINNING	OR	CATCHBASIN
S.F.	SQUARE FEET		SIGN
N/F	NOW OR FORMERLY		BOLLARD
Ft.	FEET		FENCE LINE
Deg.	DEGREE		GUARD RAIL
R	RECORD		OVERHEAD WIRE, UTILITY POLE & GUY WIRE
M	MEASURED		TRAFFIC FLOW ACCESS AREA
N	NORTH		WATER SHUT OFF
S	SOUTH	YD	YARD DRAIN
E	EAST	WV	WATER VALVE
W	WEST		HYDRANT
tel.	TELEPHONE	GV	GAS VALVE
elec.	ELECTRIC		STREET LIGHT
L.	LIBER		LIGHT POLE
P.	PAGE		CONCRETE
	TREE		PAVEMENT

PROPOSED CONCRETE

PROPOSED PAVEMENT

PROPOSED WATER MAIN (W)
PROPOSED SANITARY SEWER (S)
PROPOSED STORM SEWER (ST)
PROPOSED CONTOURS 199 / 200
PROPOSED CATCH BASIN
PROPOSED RETAINING WALL
PROPOSED CONCRETE CURB

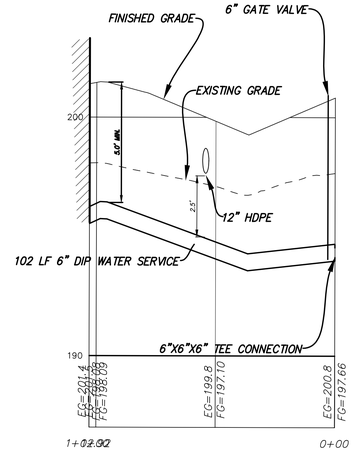
NOTES

1. 48 HOURS NOTICE MUST BE GIVEN TO DEPARTMENT OF WATER FOR INSPECTIONS FOR THE SANITARY, WATER AND STORMWATER UTILITIES.

2. PRESSURE AND LEAKAGE TESTING OF THE WATER MAIN SHALL BE WITNESSED BY DEPARTMENT STAFF AND ACCEPTABLE BACTERIOLOGICAL TEST MUST BE SUBMITTED AND ACCEPTED BY THE DEPARTMENT PRIOR TO FINAL OF THE NEW WATER MAIN.

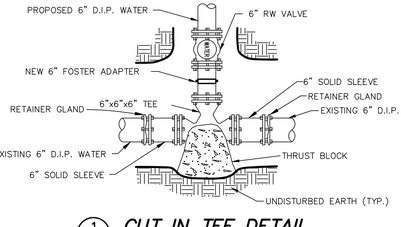
3. PRIOR TO USE, ALL WATER LINES MUST BE CHLORINATED AND HAVE A BACTERIOLOGICAL TEST PERFORMED IN ACCORDANCE WITH CITY OF ALBANY STANDARDS.

4. FOUNDATION OF BUILDING TO BE WATERPROOF. SEE ARCHITECTURAL DRAWINGS.



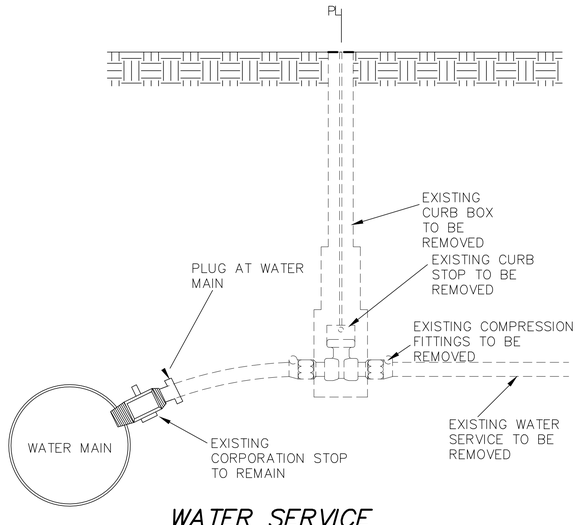
WATER SERVICE PROFILE

SCALE=1"=30' (H) 1"=3' (V)



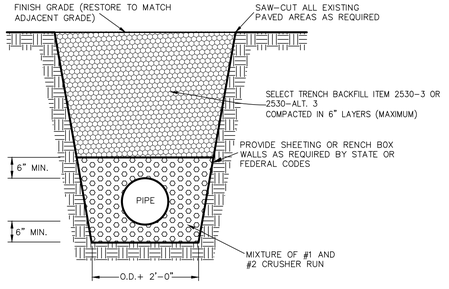
1/C5 CUT IN TEE DETAIL

NOT TO SCALE



2/C5 WATER SERVICE ABANDONMENT DETAIL

NOT TO SCALE



3/C5 TYPICAL SANITARY SEWER & WATER MAIN TRENCH DETAIL

NOT TO SCALE

HERSHBERG & HERSHBERG
Consulting Engineers and Land Surveyors
18 Locust Street
Albany, New York 12203

STATE OF NEW YORK DANIEL R. HERSHBERG LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR 044226

REVISIONS		
REMARKS	DATE	
PERMIT SET	7/24/19	
AND COMMENTS	9/5/19	
STORM SEWER REVISED	9/10/19	
GENERAL REVISIONS	8/27/21	
BUILDING LAYOUT REV	10/11/21	
COMMENT REVISIONS	10/20/21	

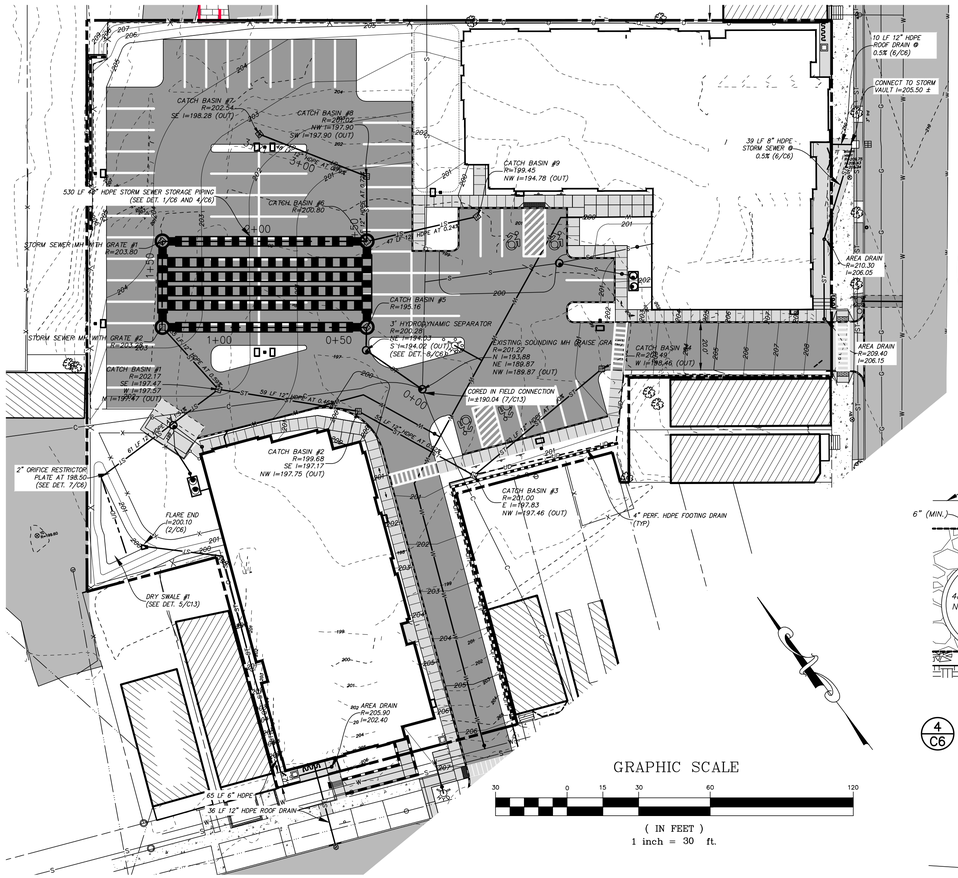
WATER PLAN, PROFILE, AND DETAILS FOR LOFTS AT PINE HILLS
237 WESTERN AVENUE
CITY OF ALBANY, NEW YORK STATE, ALBANY COUNTY

FILE: 180312 | SCALE: 1"=30' | BY: ND | CHK: DRH | DATE: 2/26/19 | 180312-1.DWG

MAP POCKET #4

SHEET C-6

STORM PLAN, PROFILE, AND DETAILS



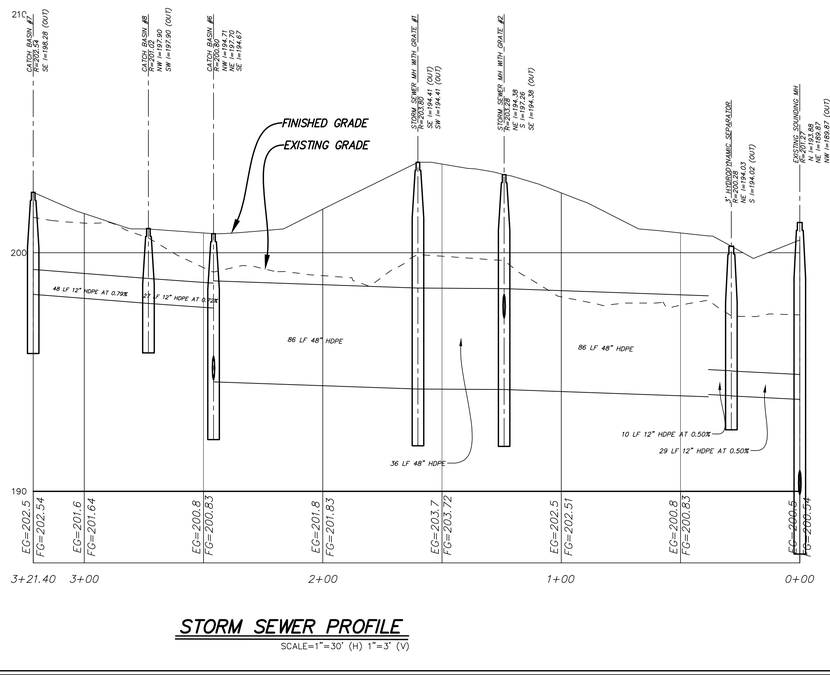
GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

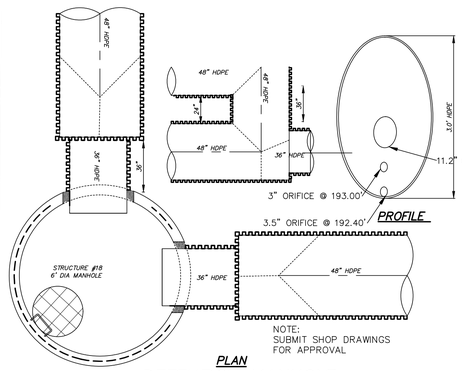
STORM SEWER PLAN

SCALE: 1"=30'



STORM SEWER PROFILE

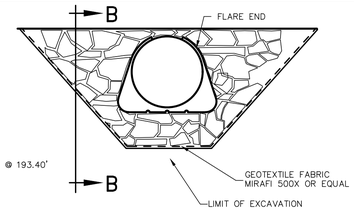
SCALE=1"=30' (H) 1"=3' (V)



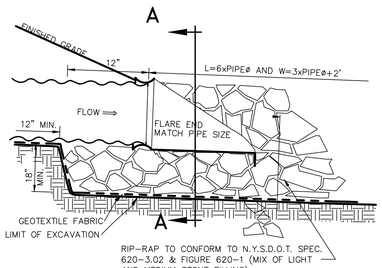
PLAN

1/C6 DETENTION MANHOLE PIPE STORAGE DETAIL

NOT TO SCALE



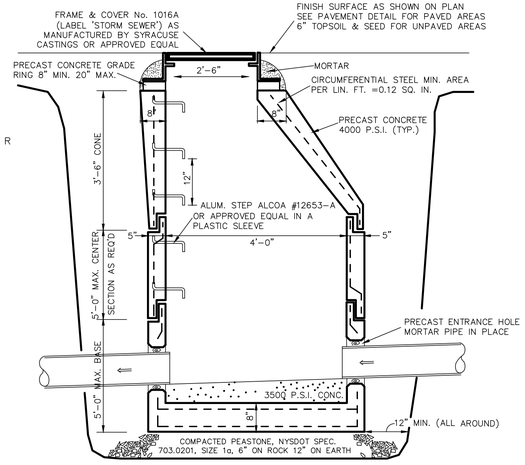
SECTION A–A



SECTION B–B

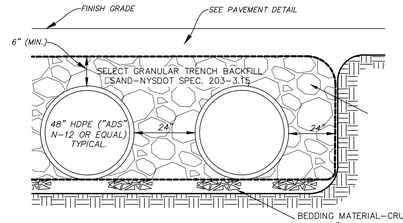
2/C6 FLARE END SECTION DETAIL

NOT TO SCALE



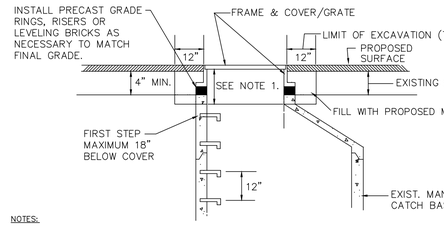
3/C6 STORM SEWER MANHOLE DETAIL

NOT TO SCALE



4/C6 DETENTION GALLERY SECTION

NOT TO SCALE

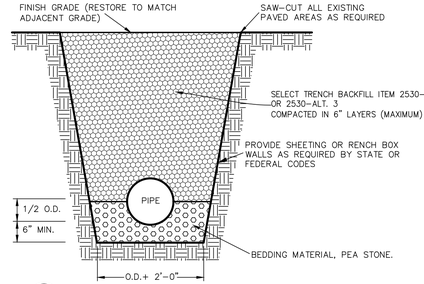


NOTES:

1. WHERE DEPTH OF NECK EXCEEDS 24 INCHES, ADJUST MANHOLE/CATCH BASIN TO GRADE BY INSERTING NEW BARREL SECTION BETWEEN THE CONE/SLAB AND EXISTING BARREL.
2. GRADE RINGS, CONCRETE RISERS AND CONCRETE BRICK SHALL BE SET IN 3/4" NON-SHRINK GROUT, PLASTER SMOOTH INSIDE AND OUT.
3. STEPS OR HAND HOLDS SHALL BE ADDED AS NEEDED.
4. PRECAST GRADE RINGS AND RISERS MUST BE CAST WITH GROOVE TO ALLOW FIELD INSTALLATION OF SAFETY STEP.
5. REPLACE EXISTING FRAME AND COVER/GRATE IF NON-STANDARD OR WORN.
6. GROUT INSIDE AND OUTSIDE OF MANHOLE/CATCH BASIN NECK TO ACHIEVE WATER TIGHT CONSTRUCTION. FINISH SMOOTH THE INSIDE OF THE NECK. USE NON-SHRINK GROUT ONLY.

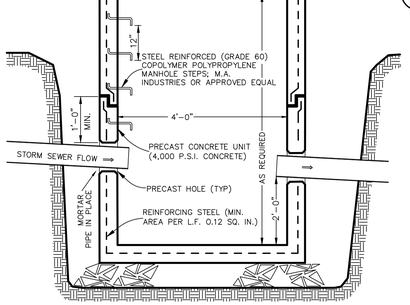
5/C6 MANHOLE/CATCHBASIN GRADE ADJUSTMENT DETAIL

NOT TO SCALE



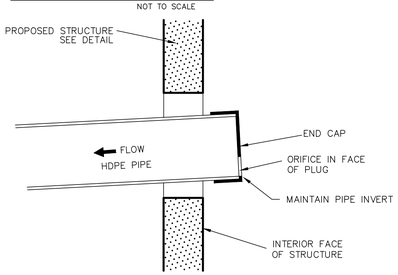
6/C6 TYPICAL STORM SEWER TRENCH DETAIL

NOT TO SCALE



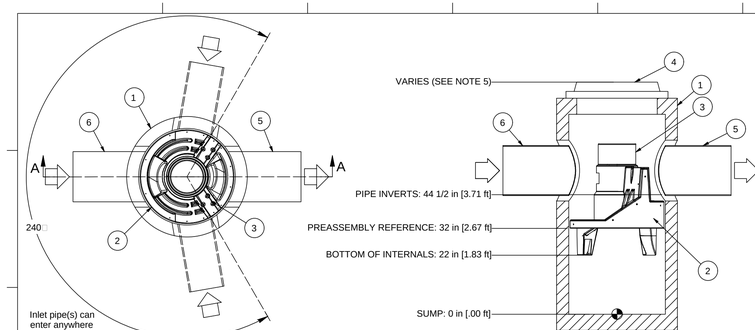
7/C6 CATCH BASIN DETAIL

NOT TO SCALE



7/C6 RESTRICTOR PLATE DETAIL

NOT TO SCALE



SECTION A-A

GENERAL NOTES:
1. General Arrangement drawings only. Contact Hydro International for site specific fabrication drawings.
2. The diameter of the inlet & outlet pipes may be no more than 18".
3. Multiple inlet pipes possible (refer to project plans).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plans).
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

PRODUCT SPECIFICATIONS:
A. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
B. The treatment system shall fit within the limits of excavation (area and depth) as shown in the project plans and will not exceed the dimensions for the design flow rates specified herein.
C. The treatment system shall remove greater than or equal to 90% of TSS based on the Target Particle Size (TPS) of 106 Microns and/or 80% of TSS based on the TPS of 230 microns at 0.3 cfs and 0.53 cfs, respectively.
D. The treatment system shall convey the Peak On-line Flow Rates of up to 15 cfs without causing upstream surcharge conditions. Full-scale independent laboratory scour testing shall demonstrate effluent control of less than or equal to 5 mg/L for all flows up to 200% of MTFR-106.
E. The treatment system shall be capable of capturing and retaining fine silt and sand size particles. Analysis of captured sediment from full-scale field installations shall demonstrate particle sizes predominately in the 20-micron range

PARTS LIST		
ITEM	SIZE (in)	DESCRIPTION
1	36	I.D. PRECAST MANHOLE
2		LEDGER SUPPORT
3		SEPARATION MODULE
4	30	FRAME AND COVER (ROUND)
5	15	OUTLET PIPE (BY OTHERS)
6	15	INLET PIPE (BY OTHERS)

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± 1/16
DECIMALS ± .06
ANGLES ± 1°

APPROX WEIGHT: N/A
MATERIAL:
NEXT ASSEMBLY: N/A
DRAWING NO.: F3HCS1
SHEET SIZE: B
SHEET: 1 OF 1
Rev: *

PROJECTION

COMMENTS:
1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

REVISION HISTORY		
REV BY	DESCRIPTION	DATE
JB	RELEASE	9/1/16

DATE: 9/1/2016
SCALE: NTS
DRAWN BY: JB
CHECKED BY:
APPROVED BY:
TITLE: 3-ft DIAMETER FIRST DEFENSE HIGH CAPACITY

GENERAL ARRANGEMENT

Hydro International

94 Hutchins Drive
Portland, ME 04102
Tel: +1 (207) 756-6200
Fax: +1 (207) 756-6212
hydro-int.com

8/C6 3' FIRST DEFENSE HYDRODYNAMIC SEPARATOR

NOT TO SCALE

HERSHBERG & HERSHBERG
Consulting Engineers and Land Surveyors
18 Locust Street
Albany, New York 12203

STATE OF NEW YORK — DANIEL R. HERSHBERG — LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR — 044226

REMARKS	DATE
PERMIT SET	7/24/19
AMD COMMENTS	8/5/19
STORM SEWER REVISED	9/10/19
GENERAL REVISIONS	8/27/21
BUILDING LAYOUT REV	10/11/21
COMMENT REVISIONS	10/20/21

REVISIONS

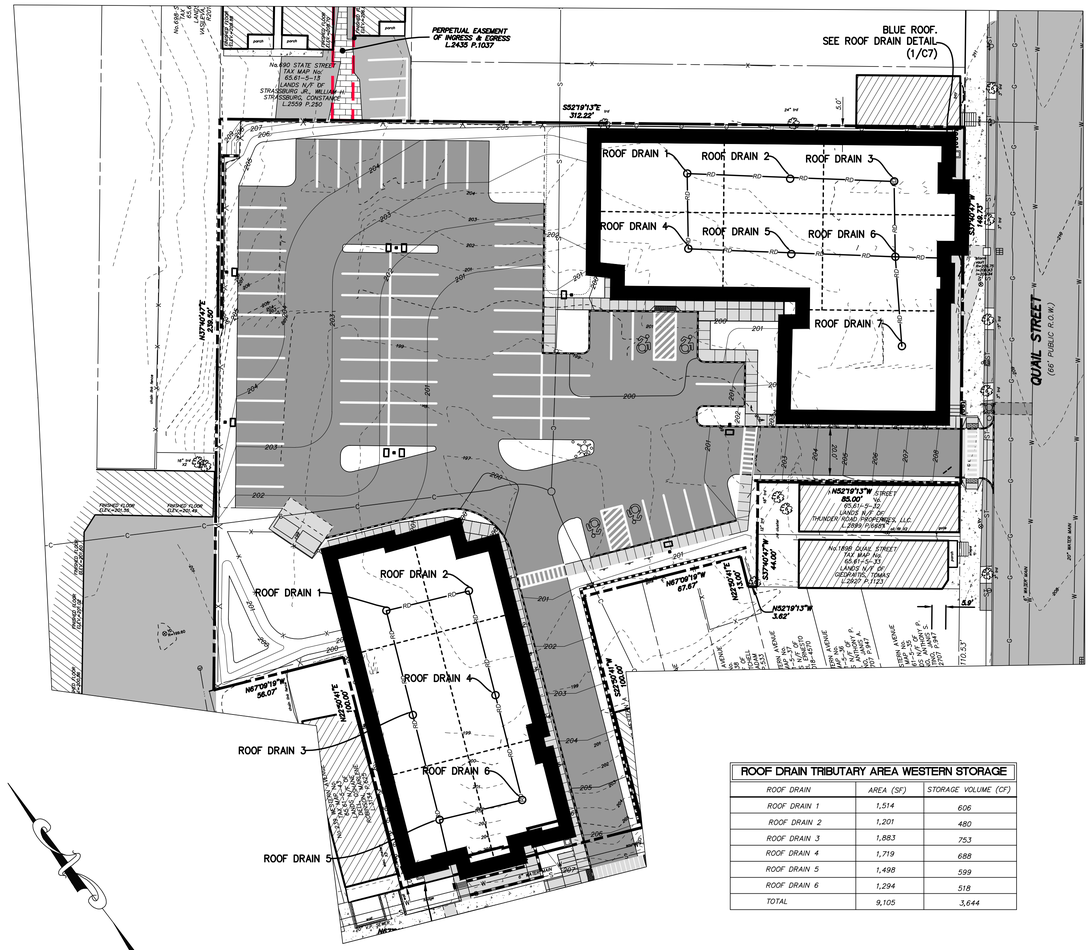
SWPPP PLAN, PROFILE AND DETAILS FOR LOFTS AT PINE HILLS
237 WESTERN AVENUE
CITY OF ALBANY, NEW YORK STATE, ALBANY COUNTY

FILE: 180312 | SCALE: 1"=30' | BY: ND | CHK: DRH | DATE: 2/26/19 | 180312-1.DWG

MAP POCKET #5

SHEET C-7

BLUE ROOF DETAILS



0 30 60 Feet

LEGEND

R.O.W.	RIGHT OF WAY		MONUMENT
No.	NUMBER		IRON ROD
enc.	ENCROACHMENT	MH	MANHOLE
P.O.B.	POINT OF BEGINNING	CB OR	CATCHBASIN
S.F.	SQUARE FEET		SIGN
N/F	NOW OR FORMERLY		BOLLARD
Ft.	FEET	x	FENCE LINE
Deg.	DEGREE		GUARD RAIL
R	RECORD		OVERHEAD WIRE, UTILITY POLE & GUY WIRE
M	MEASURED		TRAFFIC FLOW ACCESS AREA
N	NORTH		WATER SHUT OFF
S	SOUTH	YD	YARD DRAIN
E	EAST	WV	WATER VALVE
W	WEST		HYDRANT
tel.	TELEPHONE	GV	GAS VALVE
elec.	ELECTRIC		STREET LIGHT
L.	LIBER		LIGHT POLE
P.	PAGE		CONCRETE
	TREE		PAVEMENT

PROPOSED CONCRETE

PROPOSED PAVEMENT

PROPOSED WATER MAIN

PROPOSED SANITARY SEWER

PROPOSED STORM SEWER

199 PROPOSED CONTOURS 200

PROPOSED CATCH BASIN

PROPOSED RETAINING WALL

PROPOSED CONCRETE CURB

ROOF DRAIN TRIBUTARY AREA WESTERN STORAGE

ROOF DRAIN	AREA (SF)	STORAGE VOLUME (CF)
ROOF DRAIN 1	1,514	606
ROOF DRAIN 2	1,201	480
ROOF DRAIN 3	1,883	753
ROOF DRAIN 4	1,719	688
ROOF DRAIN 5	1,498	599
ROOF DRAIN 6	1,294	518
TOTAL	9,105	3,644

ROOF DRAIN TRIBUTARY AREA QUAIL STORAGE

ROOF DRAIN	AREA (SF)	STORAGE VOLUME (CF)
ROOF DRAIN 1	1,437	719
ROOF DRAIN 2	1,428	714
ROOF DRAIN 3	1,595	798
ROOF DRAIN 4	1,664	832
ROOF DRAIN 5	1,773	887
ROOF DRAIN 6	1,948	974
ROOF DRAIN 7	3,335	1,668
TOTAL	13,180	6,592

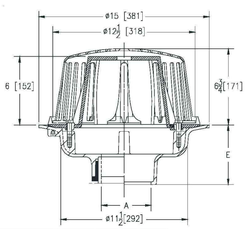
NOTES

1. LOCATIONS OF ROOF DRAINS ARE APPROXIMATE AND TO BE COORDINATED WITH STRUCTURAL ENGINEER AND ARCHITECT.

ZURN **Z105-10** SPECIFICATION SHEET

CONTROL-FLO ROOF DRAIN WITH 6 [152] PARABOLIC WEIR TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



A- Pipe Size In. [mm]	Approx. Wt. Lbs. [kg]	Dome Open Area Sq. In. [cm²]
2,3,4 [51,76,102]	34 [15]	103 [665]

Specify Number of Notches in Weir	
-N1	One Notch
-N2	Two Notches
-N3	Three Notches
-N4	Four Notches
-N5	Five Notches
-N6	Six Notches

ENGINEERING SPECIFICATION: ZURN Z105-10
15" [381mm] Diameter Control-Flo roof drain for sloped roof construction, Dura-Coated cast iron body, 6" [152mm] High Parabolic Control-Flo weir for sloped roof shall be linear functioning with integral membrane flashing clamp/gravel guard. All data shall be verified proportional to flow rates. Each notch will allow 10 GPM of flow per inch of rain water build up above the drain.

OPTIONS (Check/specify appropriate options)

PIPE SIZE
3, 4 [51,76,102]
2 ,3, 4 [51,76,102]
2 ,3, 4 [51,76,102]

OUTLET (Specify size/type)
____ IC Inside Caulk
____ NH No-Hub
____ NL Neo-Loc

E BODY HT. DIM.
5-1/4 [133]
5-1/4 [133]
4-9/16 [116]

PREFIXES
____ZA D.C.C.I. Body with 6-3/4 [171] High Aluminum Dome
____ZC D.C.C.I. Body with 6-3/4 [171] High Cast Iron Dome*

SUFFIXES
____-C Underdeck Clamp
____-DP Top-Set® Deck Plate (Replaces both -C & -R)
____-E Static Extension 1 [25] thru 4 [102] (Specify Ht.)
____-EA Adjustable Extension Assembly 2-1/8 [54] thru 3-1/2 [89]
____-G Galvanized Cast Iron
____-R Roof Sump Receiver
____-TC Neo-Loc Test Cap Gasket (2,3,4 [51,76,102] NL Bottom Outlet Only)
____-VP Vandal Proof Secured Top

* Regularly furnished unless otherwise specified.

Zurn Industries, LLC | Specification Drainage Operation
1801 Pittsburgh Avenue, Erie, PA U.S.A. 16502 · Ph. 855-663-9876, Fax 814-454-7929
In Canada | **Zurn Industries Limited**
3544 Nashua Drive, Mississauga, Ontario L4V 1L2 · Ph. 905-405-8272, Fax 905-405-1292
www.zurn.com

Rev. B
Date: 09/29/2017
C.N. No. 138160
Prod. | Dwg. No. Z105-10

1/C7 ROOF DRAIN FOR BLUE ROOF DETAIL

NOT TO SCALE

HERSHBERG & HERSHBERG
Consulting Engineers and Land Surveyors
18 Locust Street
Albany, New York 12203

STATE OF NEW YORK DANIEL R. HERSHBERG LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR 044226

REVISIONS

REMARKS	DATE
PERMIT SET	7/24/19
AHD COMMENTS	9/5/19
STORM SEWER REVISED	9/10/19
GENERAL REVISIONS	8/27/21
BUILDING LAYOUT REV	10/11/21
COMMENT REVISIONS	10/20/21

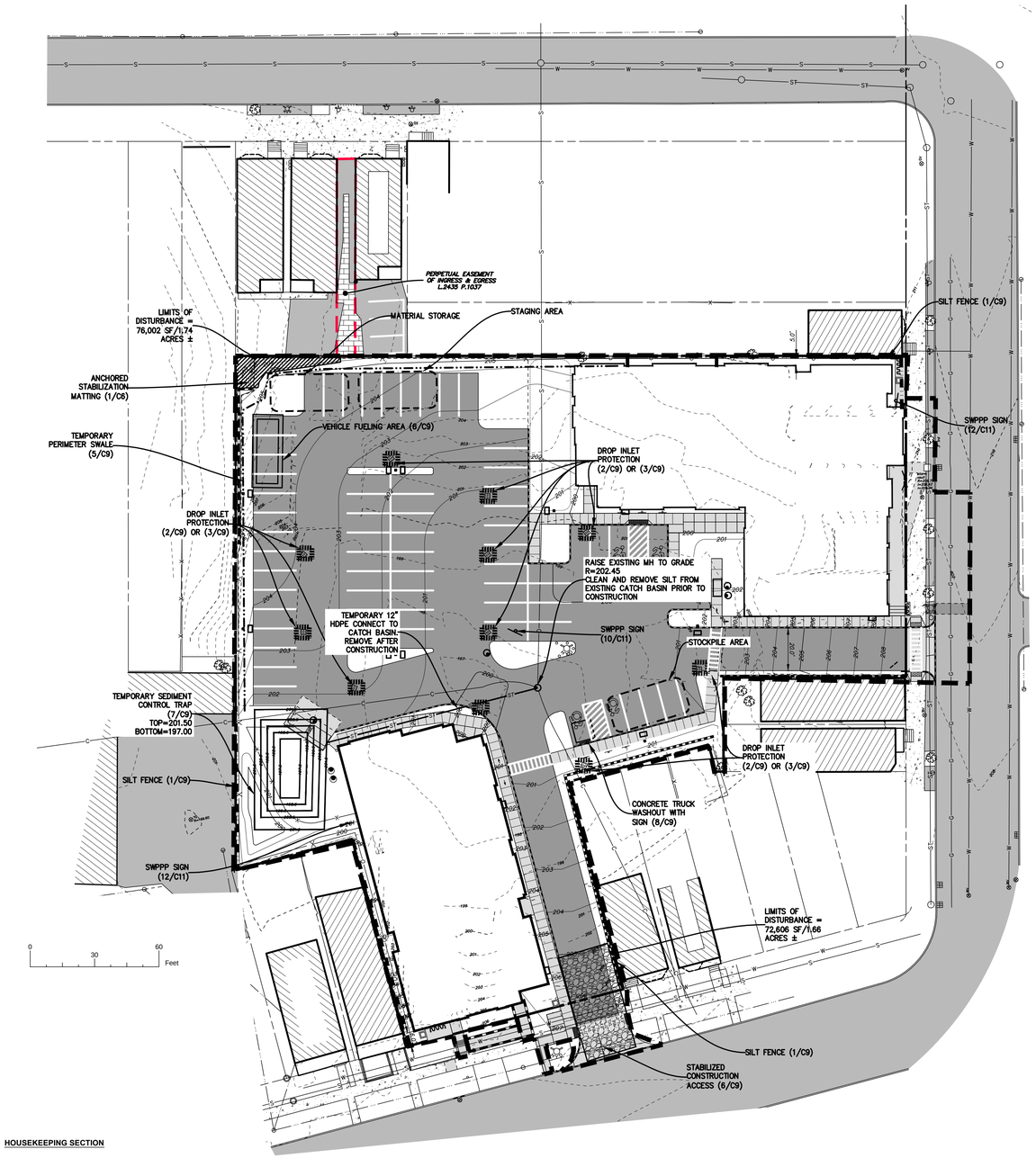
BLUE ROOF DETAILS
LOFTS AT PINE HILLS
237 WESTERN AVENUE
CITY OF ALBANY, NEW YORK STATE, ALBANY COUNTY

TITLE: 180312 | SCALE: AS NOTED | BY: ND | CHK: DRH | DATE: 5/22/19 | 180312-1.DWG

MAP POCKET #6

SHEET C-8

EROSION AND SEDIMENT CONTROL PLAN



LEGEND

R.O.W.	RIGHT OF WAY		MONUMENT
No.	NUMBER		IRON ROD
enc.	ENCROACHMENT	MH	MANHOLE
		OR	CATCHBASIN
P.O.B.	POINT OF BEGINNING		SIGN
S.F.	SQUARE FEET		BOLLARD
N/F	NOW OR FORMERLY	x	FENCE LINE
Ft.	FEET		GUARD RAIL
Deg.	DEGREE		OVERHEAD WIRE, UTILITY POLE & GUY WIRE
R	RECORD		TRAFFIC FLOW ACCESS AREA
M	MEASURED		WATER SHUT OFF
N	NORTH	YD	YARD DRAIN
S	SOUTH	WV	WATER VALVE
E	EAST		HYDRANT
W	WEST	GV	GAS VALVE
tel.	TELEPHONE		STREET LIGHT
elec.	ELECTRIC		LIGHT POLE
L.	LIBER		CONCRETE
P.	PAGE		PAVEMENT
	TREE		

PROPOSED CONCRETE

PROPOSED PAVEMENT

PROPOSED WATER MAIN (W)

PROPOSED SANITARY SEWER (S)

PROPOSED STORM SEWER (ST)

199 / 200 PROPOSED CONTOURS

PROPOSED CATCH BASIN

PROPOSED RETAINING WALL

PROPOSED CONCRETE CURB

ESC LEGEND

SILT FENCE

LIMITS OF DISTURBANCE

201 TEMPORARY SEDIMENT CONTROL TRAP CONTOURS

TEMPORARY PERIMETER SWALE

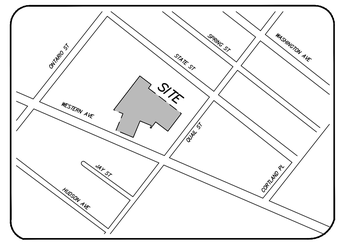
DROP INLET PROTECTION

ANCHORED STABILIZATION MATTING

FUELING AREA

STOCKPILE, STAGING, AND MATERIAL STORAGE AREA

TC=20.00 TEMPORARY GRADE OF PERIMETER SWALE



VICINITY MAP

MAP NOT TO SCALE

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

TEMPORARY EROSION AND SEDIMENT CONTROL NOTES

1. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE JULY 2016 "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL," (aka: THE BLUE BOOK) EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITIES.

2. IT IS THE INTENT OF THESE PLANS AND NOTES TO BE USED AS A GUIDE BY THE CONTRACTOR TO ENSURE THAT NO ERODED MATERIAL MIGRATES FROM THE SITE OR ENTERS ANY WATER COURSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THIS GOAL IS MET, BY IMPLEMENTING THESE PLANS AND ANY ADDITIONAL MEANS THAT MAY BE NECESSARY. FURTHER MEASURES MAY BE REQUIRED BY THE CITY, VILLAGE, OR TOWN ENGINEER. WHILE MANY OF THE EROSION CONTROL DETAILS CONTAINED WITHIN THESE PLANS ARE TAKEN DIRECTLY FROM THE BLUE BOOK, THE CONTRACTOR SHOULD CONSIDER ANY OF THE DETAILS CONTAINED IN THE JULY 2016 NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL AS ACCEPTABLE PRACTICE IN THE APPROPRIATE APPLICATION.

3. THE DEVELOPER/CONTRACTOR OR HIS BUILDER SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RAINFALL EVENT THROUGH THE ENTIRE DEVELOPMENT PROCESS. TO ASSURE PROPER FUNCTION, SILTATION BARRIERS SHALL BE MAINTAINED IN GOOD CONDITION AND REINFORCED, EXTENDED, REPAIRED, RE-SEEDED AND PROTECTED FROM FURTHER EROSION. ALL SEDIMENT ACCUMULATED SHALL BE REMOVED AND CONTAINED IN APPROPRIATE SPOIL AREAS. WATER SHALL BE APPLIED TO NEWLY SEEDED AREAS AS NEEDED UNTIL GRASS COVER IS WELL ESTABLISHED. DURING THESE PERIODIC INSPECTIONS, THE FOLLOWING ITEMS SHOULD BE PAID PARTICULAR ATTENTION:

   A. THE BASIN INLET LOCATIONS SHALL BE INSPECTED FOR SILT ACCUMULATION CAUSED BY THE LACK OF ESTABLISHED SURROUNDING VEGETATION.
   B. CATCH BASINS SHALL BE CHECKED FOR SEDIMENT ACCUMULATION.
   C. SILT FENCING SHALL BE INSPECTED REGULARLY FOR UNDERMINING AND DETERIORATION.
   E. SEEDED/MULCHED AREAS SHALL BE INSPECTED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE REPAIRED AS NECESSARY.

4. EROSION CONTROL DEVICES SHALL NOT BE REMOVED UNTIL THE ENGINEER HAS APPROVED FINAL STABILIZATION.

5. SILT FENCE SHALL BE INSTALLED IN ACCORDANCE WITH PLAN AND DETAIL LOCATIONS AND AS DESCRIBED IN THE NEW YORK STATE EROSION AND SEDIMENT CONTROL MANUAL DATED JULY 2016.

6. PRIOR TO CONSTRUCTION OF ANY PHASE, THE STABILIZED CONSTRUCTION ACCESS SHALL BE INSTALLED.

7. CONSTRUCTION TRAFFIC SHALL NOT CROSS STREAMS OR DITCHES EXCEPT AT SUITABLE CROSSING FACILITIES. EQUIPMENT SHALL NOT OPERATE, UNNECESSARILY,

8. EXISTING PAVEMENT AREAS SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER.

9. WATER TRUCKS SHALL BE USED TO MINIMIZE DUST POLLUTION ON SITE, AND ON ADJACENT ROADWAYS ROADWAY AREAS AS DIRECTED BY THE ENGINEER.

10. ANY WATER PUMPED AS A RESULT OF DEWATERING ACTIVITIES SHALL BE PUMPED INTO A DEWATERING PIT.

11. CONCRETE WASHOUT AREAS SHALL BE DESIGNATED BY THE DESIGN ENGINEER AND PROTECTED IN ACCORDANCE WITH THE NEW YORK STATE EROSION AND SEDIMENT CONTROL MANUAL DATED JULY 2016.

12. ALL AREAS DISTURBED IN THE CONSTRUCTION PROCESS SHALL BE RE-SEEDED AS SOON AS PRACTICABLE. PARTICULAR CARE SHALL BE TAKEN TO RE-SEED DISTURBED SLOPES IN A TIMELY MANNER.

13. IT IS RECOMMENDED THAT ALL EROSION CONTROL DEVICES BE PLACED FOR THE ENTIRE PHASE AS SHOWN ON THE EROSION CONTROL PLAN. PLACEMENT MAY BE DONE, HOWEVER, TO SUIT CONSTRUCTION SEQUENCING AS APPROVED BY THE ENGINEER.

14. STOCK PILES SHALL BE PROTECTED BY A SEDIMENT CONTROL FENCE OR TEMPORARY SEDIMENT CONTROL TRENCH PER THE NEW YORK STATE EROSION AND SEDIMENT CONTROL MANUAL DATED JULY 2016. THESE FENCES/TRENCHES SHALL BE MAINTAINED IN GOOD CONDITION UNTIL SAID STOCK PILES ARE REMOVED AND STOCK PILING AREAS ARE PERMANENTLY STABILIZED.

15. STOCK PILES SHALL BE SEEDED UPON SUSPENSION OF WORK OR IF MATERIAL IS NOT TO BE USED WITHIN 14 DAYS, IN ACCORDANCE WITH THE NEW YORK STATE EROSION AND SEDIMENT CONTROL MANUAL DATED JULY 2016.

16. IN NO CASE SHALL ERODIBLE MATERIALS BE STOCKPILED WITHIN 25 FEET OF ANY DITCH, STREAM OR OTHER SURFACE WATER BODY.

EROSION AND SEDIMENT CONTROL NOTES

1. ANY CONTRACTOR INVOLVED IN EARTHWORK ACTIVITIES, INCLUDING BUT NOT LIMITED TO: CLEARING, GRADING AND TRENCHING, SHALL REVIEW ALL PERMIT CONDITIONS AND CERTIFY UNDERSTANDING OF THESE CONDITIONS, IN WRITING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT ALL EROSION CONTROLS DESCRIBED IN GP-0-15-002, AND IT IS NOT THE INTENT OF THESE DRAWINGS TO REPLACE OR DISSEMINATE THE PERMIT REQUIREMENTS. THE CONTRACTOR SHALL REMAIN IN COMPLIANCE WITH THE PERMIT AT ALL TIMES.

2. AT ALL TIMES SOIL DISTURBING ACTIVITIES SHALL REMAIN LESS THAN 1 ACRE. THE CONTRACTOR SHALL COORDINATE EARTHWORK ACTIVITIES AND IMPLEMENTATION OF SOIL STABILIZATION MEASURES TO ENSURE COMPLIANCE TO THIS PERMIT REQUIREMENT. THE SITE WILL BE MONITORED AT ALL TIMES TO ENSURE SOIL DISTURBANCE DOES NOT EXCEED 1 ACRE. IF THE SOIL DISTURBANCE EXCEEDS ONE ACRE AT ANY TIME, A STOP WORK ORDER WILL ISSUED UNTIL THE SITE RECEIVES COVERAGE UNDER SPDES GENERAL PERMIT FOR CONSTRUCTION ACTIVITY.

3. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION AND EQUIPMENT ENTRANCE WHENEVER PRACTICABLE.

4. DISTURBED AREAS SHALL BE STABILIZED WITHIN 14 DAYS OF COMPLETION OR SUSPENSION OF GRADING OPERATIONS.

5. INSTALL TEMPORARY & PERMANENT SEEDING IN ACCORDANCE WITH THE NEW YORK GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL STANDARD AND SPECIFICATION FOR TEMPORARY CONSTRUCTION AREA SEEDING AND FOR MULCHING:

STANDARD AND SPECIFICATIONS FOR TEMPORARY CONSTRUCTION AREA PLANTINGS, PAGE 4.58:
WATER MANAGEMENT PRACTICES MUST BE INSTALLED AS APPROPRIATE FOR SITE CONDITIONS. THE AREA MUST BE ROUGH GRADED AND SLOPES PHYSICALLY STABLE. LARGE DEBRIS AND ROCKS ARE USUALLY REMOVED. SEEDBED MUST BE SEEDED WITHIN 24 HOURS OF DISTURBANCE OR SCARIFICATION OF THE SOIL SURFACE WILL BE NECESSARY PRIOR TO SEEDING.

FERTILIZER OR LIME ARE NOT TYPICALLY USED FOR TEMPORARY SEEDINGS.

IF: SPRING OR SUMMER OR EARLY FALL, THEN SEED THE AREA WITH RYEGRASS (ANNUAL OR PERENNIAL) AT 30 LBS. PER ACRE. (APPROXIMATELY 0.7 LB./1000 SQ. FT. OR USE 1 LB./1000 SQ. FT.)

IF: LATE FALL OR EARLY WINTER, THEN SEED CERTIFIED 'AROOSTOOK' WINTER RYE (CEREAL RYE) AT 1000 LBS. PER ACRE (2.5 LBS./1000 SQ. FT.).

ANY SEEDING METHOD MAY BE USED THAT WILL PROVIDE UNIFORM APPLICATION OF SEED TO THE AREA AND RESULT IN RELATIVELY GOOD SOIL TO SEED CONTACT.

MULCH THE AREA WITH HAY OR STRAW AT 2 TONS/ACRE (APPROX. 90 LBS./1000 SQ. FT. OR 2 BALES). QUALITY OF HAY OR STRAW MULCH ALLOWABLE WILL BE DETERMINED BASED ON LONG TERM USE AND VISUAL CONCERNS. MULCH ANCHORING WILL BE REQUIRED WHERE WIND OR AREAS OF CONCENTRATED WATER ARE OF CONCERN. WOOD FIBER HYDROMULCH OR OTHER SPRAYABLE PRODUCTS APPROVED FOR EROSION CONTROL (NYLON WEB OR MESH) MAY BE USED IF APPLIED ACCORDING TO MANUFACTURERS' SPECIFICATIONS. CAUTION IS ADVISED WHEN USING NYLON OR OTHER SYNTHETIC PRODUCTS. THEY MAY BE DIFFICULT TO REMOVE PRIOR TO FINAL SEEDING AND CAN BE A HAZARD TO YOUNG WILDLIFE SPECIES.

MULCH ANCHORING GUIDE – TABLE 4.3, PAGE 4.41:

TABLE 4.3
MULCH ANCHORING GUIDE

ANCHORING METHOD OR MATERIAL	KIND OF MULCH TO BE ANCHORED	HOW TO APPLY
PEG AND TWINE	HAY OR STRAW	AFTER MULCHING, DIVIDE AREAS INTO BLOCKS APPROXIMATELY 1 SQ. YD. IN SIZE. DRIVE 4–6 PEGS PER BLOCK TO WITHIN 2" TO 3" OF SOIL SURFACE. SECURE MULCH TO SURFACE BY STRETCHING TWINE BETWEEN PEGS IN CROSS–CROSS PATTERN ON SECURE TWINE AROUND EACH PEG WITH 2 OR MORE TIGHT TURNS. DRIVE PEGS FLUSH WITH SOIL. DRIVING STAKES INTO GROUND TIGHTENS THE TWINE.
MULCH NETTING	HAY OR STRAW	STAPLE THE LIGHT–WEIGHT PAPER, JUTE, WOOD FIBER, OR PLASTIC NETTINGS TO SOIL SURFACE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. SHOULD BE BIODEGRADABLE. MOST PRODUCTS ARE NOT SUITABLE FOR FOOT TRAFFIC.
WOOD CELLULOSE FIBER	HAY OR STRAW	APPLY WITH HYDROSEEDER IMMEDIATELY AFTER MULCHING. USE 500 LBS. WOOD FIBER PER ACRE. SOME PRODUCTS CONTAIN AN ADHESIVE MATERIAL ("TACKIFIER"), POSSIBLY ADVANTAGEOUS.
MULCH ANCHORING TOOL	HAY OR STRAW	APPLY MULCH AND PULL A MULCH ANCHORING TOOL (BLUNT, STRAIGHT DISCS) OVER MULCH AS NEAR TO THE CONTOUR AS POSSIBLE. MULCH MATERIAL SHOULD BE "TUCKED" INTO SOIL SURFACE ABOUT 3".
TACKIFIER	HAY OR STRAW	MIX AND APPLY POLYMERIC AND GUM TACKIFIERS ACCORDING TO MANUFACTURER'S INSTRUCTIONS. AVOID APPLICATION DURING RAIN. A 24–HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45° FAHRENHEIT ARE REQUIRED.

7. INSTALL PERMANENT RIP-RAP AT ALL PIPE END SECTIONS AT TIME OF INSTALLATION OF PIPE.

8. SEE REMAINDER OF PLANS FOR PERMANENT IMPROVEMENTS. PERMANENT IMPROVEMENTS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY.

9. PAVED AREAS ARE TO BE SWEPT DAILY TO REMOVE ANY SEDIMENT AND ALL NEWLY PAVED AREAS SHALL BE DIRECTED TO THE TEMPORARY OR FINAL SEDIMENT CONTROL BASINS.

CONSTRUCTION SEQUENCING & SEDIMENTATION AND EROSION CONTROL DURING CONSTRUCTION

The construction sequence for this project is shown below. Approximate timing is indicated where applicable in red following steps.

Prior to commencement of any work this SWPPP

- ü Assure that copy of SWMR & SWPPP is on the site. ON COMMENCEMENT
- ü Establish Qualified Individual who will be performing site inspection. ON COMMENCEMENT
- ü Inspections must be performed by the qualified professional must be submitted to the MS4 Coordinator. From Commencement until PROJECT COMPLETE
- ü Establish Trained Contractor who will be on site. At least one Trained Contractor must be on site whenever ground disturbing activities are being undertaken. ON COMMENCEMENT
- ü Establish contact person for Contractor/Subcontractor. ON COMMENCEMENT
- ü **IN CASE OF ANY SPILLS OF MATERIALS ON SITE, EXECUTE SPILL**
- ü **RESPONSE PLAN CONTAINED IN APPENDIX #7**

Construction Sequence

- ü Install traffic controls as required. PRIOR TO THE START OF ANY CONSTRUCTION
- ü Install construction fencing as required. PRIOR TO THE START OF ANY CONSTRUCTION
- ü Install silt fence or other controls as indicated on the plan. PRIOR TO COMMENCEMENT OF ANY GRADING - FENCE TO REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED.
- ü Commence work on site.
- ü Grade and prepare stabilized construction access. PRIOR TO COMMENCEMENT OF ANY GRADING - STABILIZED CONSTRUCTION ACCESS TO REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED.
- ü Establish fueling area. Relocate when required. MAINTAIN A FUELING AREA FOR EQUIPMENT UNTIL NO LONGER REQUIRED.
- ü The existing pavement must be kept swept clean to avoid tracking materials onto any streets. CONTINUOUSLY FROM INCEPTION TO COMPLETION OF STABILIZATION OR UNTIL PROJECT IS COMPLETE.
- ü Maintain this area clean of debris and verify condition and safety of storage of materials listed below. Requires daily inspection. CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.
- ü Any construction materials, chemicals or construction debris must be stored in sealed receptacles, trailers or buildings. Any storage piles of materials meant for installation (i.e., sand, etc.) must be surrounded by sedimentation fence.
- ü The list of anticipated materials stored on site during construction is provided below and must be updated if any additional materials are utilized: CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.
  - Select Fill
  - Fencing Materials
  - Pipes
  - Pipe Solvents
  - Concrete Structures
  - Reinforcing Steel
  - Brick
  - Concrete Additives
  - Concrete Sealers
- ü MSDS sheets must be available on site for all materials used or imported to the site. CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.
- ü Any chemical spills must be contained immediately on site and reported to NYSDEC. CONTINUOUSLY FROM INCEPTION TO FILING OF NOTICE UNTIL PROJECT IS COMPLETE.
- ü Oil and grease spills from equipment shall be treated immediately. CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.
- ü Direct drainage to storage system. PRIOR TO REMOVAL OF TEMPORARY PERIMETER SWALE AND CHECK DAMS.
- ü Complete construction of Project.
- ü Obtain approval of Project completion from the Department of Water & Water Supply.

HOUSEKEEPING SECTION

During construction any construction materials, chemicals or construction debris must be stored in sealed receptacles, trailers or buildings.

Any storage piles of materials meant for installation (i.e., sand, etc.) must be surrounded by sedimentation fence.

The list of anticipated materials stored on site during construction is provided below and must be updated if any additional materials are utilized:

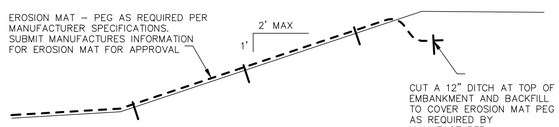
- Select Fill
- Fencing Materials
- Pipes
- Pipe Solvents
- Concrete Structures
- Reinforcing Steel
- Brick
- Concrete Additives
- Concrete Sealers

MSDS sheets must be available on site for all materials used or imported to the site.

Any chemical spills must be contained immediately on site and reported to NYSDEC.

IN CASE OF ANY SPILLS OF MATERIALS ON SITE, EXECUTE SPILL RESPONSE PLAN CONTAINED IN APPENDIX #9

Oil and grease spills from equipment shall be treated immediately. Vehicle fueling must take place in designated area. Relocate designated fueling area when required.



NOTE:

USE THIS DETAIL AS REQUIRED TO STABILIZE SLOPES DURING CONSTRUCTION AND UPON COMPLETION OF CLEARING AND GRADING TO PREVENT EROSION OF SLOPES.

1/C8 ANCHORED STABILIZATION MATTING

NOT TO SCALE

HERSHBERG & HERSHBERG
Consulting Engineers and Land Surveyors
18 Locust Street
Albany, New York 12203

STATE OF NEW YORK — DANIEL R. HERSHBERG — LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR — 044226

REVISIONS	DATE
AWD COMMENT LETTER	5/22/19
PERMIT SET	7/24/19
AWD COMMENTS	9/10/19
GENERAL REVISIONS	8/27/21
BUILDING LAYOUT REV.	10/11/21
COMMENT REVISIONS	10/20/21

EROSION AND SEDIMENT CONTROL PLAN
LOFTS AT PINE HILLS
237 WESTERN AVENUE
CITY OF ALBANY, NEW YORK STATE, ALBANY COUNTY

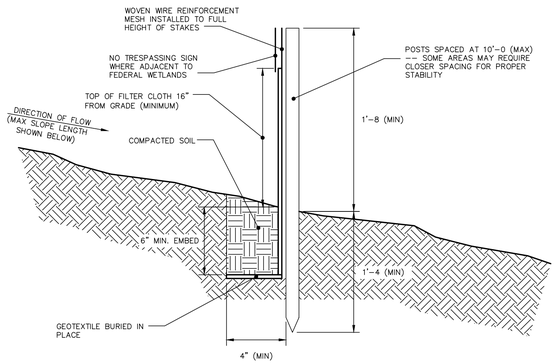
FILE: 180312 | SCALE: 1"=30' | BY: ND | CHK: DRH | DATE: 2/26/19 | 180312-1.DWG

MAP POCKET #7

SHEET C-9

EROSION AND SEDIMENT CONTROL

DETAILS



MAXIMUM ALLOWABLE SLOPE LENGTH

MAXIMUM ALLOWABLE SLOPE LENGTHS CONTRIBUTING RUNOFF TO A SECTION OF SILT FENCE SHALL BE AS FOLLOWS:

SLOPE STEEPNESS:	MAX. SLOPE LENGTH:
1:2	25 FT
1:3	50 FT
1:4	75 FT
1:5 OR FLATTER	100 FT

NOTE: MAXIMUM DRAINAGE AREA FOR OVERLAND FLOW TO SILT FENCE SECTION SHALL NOT EXCEED 1/4 ACRE PER 100 FT OF FENCE. CONCENTRATED DISCHARGE OF SEDIMENT LADEN WATER SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO THE FENCING.

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

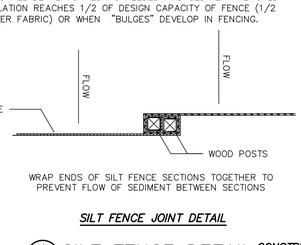
1. INSTALL SILT FENCE IN ACCORDANCE WITH "THE NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL", SECTION 7A.
2. WOVEN WIRE FENCE SHALL BE 12 1/2 GA., 6" MAXIMUM MESH OPENING, FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
3. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
4. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE WRAPPED TOGETHER PER SILT FENCE JOINT DETAIL ON THIS SHEET.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SEDIMENT REMOVED WHEN ACCUMULATION REACHES 1/2 OF DESIGN CAPACITY OF FENCE (1/2 HEIGHT OF FILTER FABRIC) OR WHEN "BULGES" DEVELOP IN FENCING.

POSTS: STEEL EITHER "T" OR "U" TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE, 12 1/2 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.



WRAP ENDS OF SILT FENCE SECTIONS TOGETHER TO PREVENT FLOW OF SEDIMENT BETWEEN SECTIONS

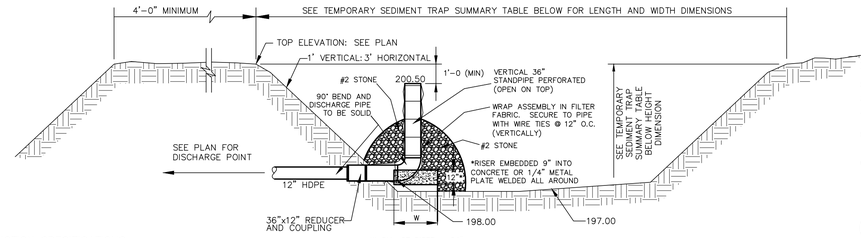
SILT FENCE JOINT DETAIL

1/C9 SILT FENCE DETAIL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS:

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT, THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
3. VOLUME OF SEDIMENT STORAGE SHALL BE 3600 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE.
4. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ½ THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND STABILIZED.
5. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SEDIMENT ARE CONTROLLED.
7. THE STRUCTURE SHALL BE REMOVED AND AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
8. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER; CUT SLOPES 1:1 OR FATTER.
9. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT.
10. THE TOP 2/3 OF THE RISER SHALL BE PERFORATED WITH ONE (1) INCH DIAMETER HOLES OR SLITS SPACED SIX (6) INCHES VERTICALLY AND HORIZONTALLY AND PLACED IN THE CONCAVE PORTION OF PIPE. NO HOLES WILL BE ALLOWED WITHIN SIX (6) INCHES OF THE HORIZONTAL BARREL.
11. THE RISER SHALL BE WRAPPED WITH 1/4 TO 1/2 INCH HARDWARE CLOTH WIRE THEN WRAPPED WITH FILTER CLOTH (HAVING EQUIVALENT SIEVE SIZE OF 40-80). THE FILTER CLOTH SHALL EXTEND SIX (6) INCHES ABOVE THE HIGHEST HOLE AND SIX (6) INCHES BELOW THE LOWEST HOLE. WHERE ENDS OF THE FILTER CLOTH COME TOGETHER, THEY SHALL BE OVER-LAPPED, FOLDED AND STAPLED TO PREVENT BYPASS.
12. STRAPS OR CONNECTING BANDS SHALL BE USED TO HOLD THE FILTER CLOTH AND WIRE FABRIC IN PLACE. THEY SHALL BE PLACED AT THE TOP AND BOTTOM OF THE CLOTH.
13. FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE HAND COMPACTED IN FOUR (4) INCH LAYERS. A MINIMUM OF TWO (2) FEET OF HAND COMPACTED BACKFILL SHALL BE PLACED OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
14. THE RISER SHALL BE ANCHORED WITH EITHER A CONCRETE BASE OR STEEL PLATE TO PREVENT FLOTATION. FOR CONCRETE BASE THE DEPTH SHALL BE TWELVE (12) INCHES WITH THE RISER EMBEDDED NINE (9) INCHES, A 1/4 INCH MINIMUM THICKNESS STEEL PLATE SHALL BE ATTACHED TO THE RISER BY A CONTINUOUS WELD AROUND THE BOTTOM TO FORM A WATERTIGHT CONNECTION AND THE PLACE TWO (2) FEET OF STONE, GRAVEL, OR TAMPED EARTH ON THE PLATE.



W=DIA. OF RISER + 24"

DESIGN CRITERIA:

IF THE DRAINAGE AREA TO THE PROPOSED TRAP LOCATION EXCEEDS 5 ACRES, OR THE TRAP IS IN PLACE BEYOND ON CONSTRUCTION SEASON, OR ANY OF THE ADDITIONAL DESIGN CRITERIA PRESENTED HERE CANNOT BE MET, A FULL SEDIMENT BASIN MUST BE USED. SEE STANDARD AND SPECIFICATION FOR SEDIMENT BASIN ON PAGE 5.19.

DRAINAGE AREA – THE MAXIMUM DRAINAGE AREA FOR ALL SEDIMENT TRAPS SHALL BE 5 ACRES.

LOCATION – SEDIMENT TRAPS SHALL BE LOCATED SO THAT THEY CAN BE INSTALLED PRIOR TO GRADING OR FILLING IN THE DRAINAGE AREA THEY ARE TO PROTECT. TRAPS MUST **NOT BE LOCATED ANY CLOSER THAN 20 FEET** FROM A PROPOSED BUILDING FOUNDATION IF THE TRAP IS TO FUNCTION DURING BUILDING CONSTRUCTION. LOCATE TRAPS TO OBTAIN MAXIMUM STORAGE BENEFIT FROM THE TERRAIN AND FOR EASE OF CLEANOUT AND DISPOSAL OF THE TRAPPED SEDIMENT.

TRAP SIZE – THE VOLUME OF A SEDIMENT TRAP AS MEASURED AT THE ELEVATION OF THE CREST OF THE OUTLET SHALL BE AT LEAST 3,600 CUBIC FEET PER ACRE OF DRAINAGE AREA. A MINIMUM LENGTH TO WIDTH RATIO OF 2:1 SHOULD BE PROVIDED. THE VOLUME OF A CONSTRUCTED TRAP SHALL BE CALCULATED USING STANDARD MATHEMATICAL PROCEDURES. THE VOLUME OF A NATURAL SEDIMENT TRAP MAY BE APPROXIMATED BY THE EQUATION: VOLUME (CU.FT.) = 0.4 X SURFACE AREA (SQ.FT.) X MAXIMUM DEPTH (FT.).

TRAP CLEANOUT – SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO THE ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ½ OF THE DESIGN DEPTH OF THE TRAP. SEDIMENT REMOVED FROM THE TRAP SHALL BE DEPOSITED IN A PROTECTED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.

EMBANKMENT – ALL EARTH EMBANKMENTS FOR SEDIMENT TRAPS SHALL NOT EXCEED FIVE (5) FEET IN HEIGHT AS MEASURED AT THE LOW POINT OF THE ORIGINAL GROUND ALONG THE CENTERLINE OF THE EMBANKMENT. EMBANKMENTS SHALL HAVE A MINIMUM FOUR (4) FOOT WIDE TOP AND SIDE SLOPES OF 2:1 OR FLATTER. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH AS SOON AS IT IS COMPLETED.

THE ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER TO ANY SEDIMENT TRAP WILL EQUAL OR EXCEED THE MAXIMUM HEIGHT OF THE OUTLET STRUCTURE ALONG THE ENTIRE LENGTH OF THE TRAP.

EXCAVATION – ALL EXCAVATION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMAL. EXCAVATED PORTIONS OF SEDIMENT TRAPS SHALL HAVE 1:1 OR FLATTER SLOPES.

OUTLET – THE OUTLET SHALL BE DESIGNED, CONSTRUCTED, AND MAINTAINED IN SUCH A MANNER THAT SEDIMENT DOES NOT LEAVE THE TRAP AND THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.

SEDIMENT TRAPS MUST OUTLET ONTO STABILIZED (PREFERABLE UNDISTURBED) GROUND, INTO A WATERCOURSE, STABILIZED CHANNEL, OR INTO A STORM DRAIN SYSTEM. DISTANCE BETWEEN INLET AND OUTLET SHOULD BE MAXIMIZED TO THE LONGEST LENGTH PRACTICABLE. ALL TRAPS MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER CONSTRUCTION.

MINIMUM SIZES

BARRREL DIAMETER[1] (INCHES)	RISER DIAMETER[1] (INCHES)	MAXIMUM DRAINAGE AREA (ACRES)
12	15	1
15	18	2
18	21	3
21	24	4
21	27	5

[1] BARREL DIAMETER MAY BE SAME SIZE AS RISER DIAMETER

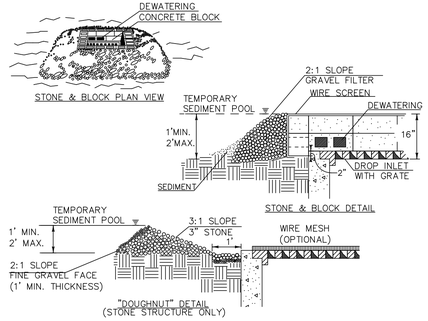
CONSTRUCTION SEQUENCE SUMMARY TABLE	
CS#	*DISTURBED AREA*
CS1	1.62

TEMPORARY SEDIMENT TRAP SUMMARY TABLE	
DESCRIPTION	*TRAP No.1*
TYPE	/
DRAINAGE AREA	1.62 ACRES
STORAGE REQ'D	215 C.Y.
STORAGE PROVIDED*	249 C.Y.
PIPE OUTLET	12"
DEPTH BELOW OUTLET	12"
ENBANKMENT HT.	4.5'
50% CLEANOUT ELEVATION	199.25
INVERT OUT ELEVATION	198.00
LENGTH x WIDTH x HT*	55'x35'X3.5'

*STORAGE CAPACITY FROM THE TOP ELEVATION OF THE RISER PIPE OUTLET TO THE TRAP BOTTOM

7/C9 TEMPORARY SEDIMENT CONTROL TRAP DETAIL

NOT TO SCALE

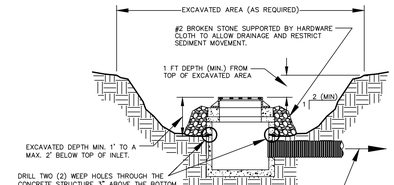


CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2" MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2"- 3/4" IN DIAMETER PLACED 2" BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1' THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3" STONE AS SHOWN ON THE DRAWINGS. MAXIMUM DRAINAGE AREA 1 ACRE

2/C9 EXCAVATED DROP INLET PROTECTION

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

1. INSTALL INLET PROTECTION IN ACCORDANCE WITH THE JULY 2016 "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL".
2. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
3. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
4. WEEP HOLES SHALL BE PROTECTED BY 2"ø STONE OR GRAVEL.
5. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL EXCAVATION WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.
6. THE MAXIMUM DRAINAGE AREA SHALL BE 1 ACRE.

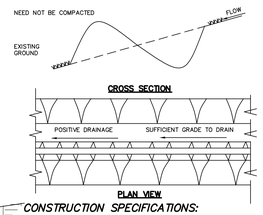
DESIGN CRITERIA:

LIMIT THE DRAINAGE AREA TO THE INLET DEVICE TO ONE (1) ACRE. EXCAVATED SIDE SLOPES SHALL BE NO STEEPER THEN 2:1. THE MINIMUM DEPTH SHALL BE 1 FOOT AND THE MAXIMUM DEPTH 2 FEET AS MEASURED FROM THE CREST OF THE INLET STRUCTURE. SHAPE THE EXCAVATED BASIN TO FIT CONDITIONS WITH THE LONGEST DIMENSION ORIENTATED TOWARD THE LONGEST INFLOW AREA TO PROVIDE MAXIMUM TRAP EFFICIENCY. THE CAPACITY OF THE EXCAVATED BASIN SHOULD BE ESTABLISHED TO CONTAIN 900 CUBIC FEET PER ACRE OF DISTURBED AREA. WEEP HOLES, PROTECTED BY FABRIC AND STONE, SHOULD BE PROVIDED FOR DRAINING THE TEMPORARY POOL.

INSPECT AND CLEAN THE EXCAVATED BASIN AFTER EVERY STORM. SEDIMENT SHOULD BE REMOVED WHEN 50 PERCENT OF THE STORAGE VOLUME IS ACHIEVED. THIS MATERIAL SHOULD BE INCORPORATED INTO THE SITE IN A STABILIZED MANNER.

3/C9 STONE AND BLOCK DROP INLET PROTECTION DETAIL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

1. ALL PERIMETER DIKE/SWALE SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSION VELOCITY.
4. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED IN THE STANDARD.
5. STABILIZATION OF THE AREA DISTURBED BY THE DIKE AND SWALE SHALL BE DONE IN ACCORDANCE WITH THE STANDARD AND SPECIFICATIONS FOR TEMPORARY SEEDING AND MULCHING, AND SHALL BE DONE WITHIN 10 DAYS.
6. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

MAX. DRAINAGE AREA LIMIT: 2 ACRES

DESIGN CRITERIA:

THE PERIMETER DIKE/SWAL SHALL NOT BE CONSTRUCTED OUTSIDE PROPERTY LINES OR SETBACKS WITHOUT OBTAINING LEGAL EASEMENTS FROM AFFECTED ADJACENT PROPERTY OWNERS. A DESIGN IS NOT REQUIRED FOR PERIMETER DIKE/SWALE. THE FOLLOWING CRITERIA SHALL BE USED:

DRAINAGE AREA – LESS THAN 2 ACRES (FOR DRAINAGE AREAS LARGER THAN 2 ACRES BUT LESS THAN 10 ACRES, SEE EARTH DIKE OR CONSTRUCTION DITCH; FOR DRAINAGE AREAS LARGER THAN 10 ACRES, SEE STANDARD AND SPECIFICATIONS FOR DIVERSION).

HEIGHT – 18 INCHES MINIMUM FROM BOTTOM OF SWALE TO TOP OF DIKE EVENLY DIVIDED BETWEEN DIKE HEIGHT AND SWALE DEPTH.

BOTTOM WIDTH OF DIKE – 2 FEET MINIMUM.

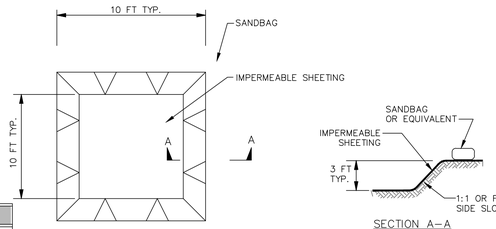
WIDTH OF SWALE – 2 FEET MINIMUM

GRADE – DEPENDENT UPON TOPOGRAPHY, BUT SHALL HAVE POSITIVE DRAINAGE (SUFFICIENT GRADE TO DRAIN) TO AN ADEQUATE OUTLET. MAXIMUM ALLOWABLE GRADE NOT TO EXCEED 8 PERCENT.

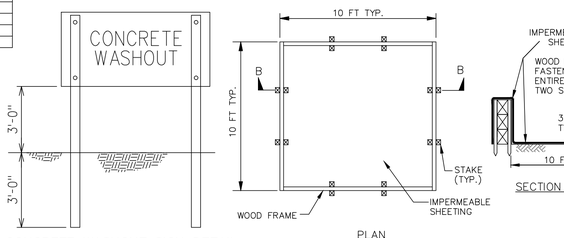
STABILIZATION – THE DISTURBED AREA OF THE DIKE AND SWALE SHALL BE STABILIZED WITHIN 2 DAYS OF INSTALLATION FOR CONSTRUCTION DITCH (SEE PAGE 3.4).

5/C9 TEMPORARY PERIMETER DIKE OR SWALE DETAIL

NOT TO SCALE



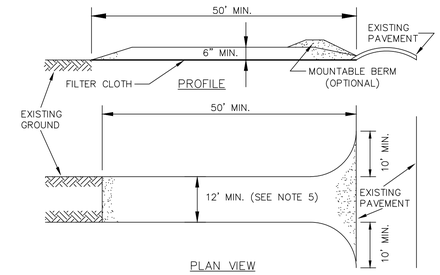
EXCAVATED WASHOUT STRUCTURE



CONCRETE WASHOUT SIGN DETAIL

(OR EQUIVALENT)

WASHOUT STRUCTURE WITH WOOD PLANKS

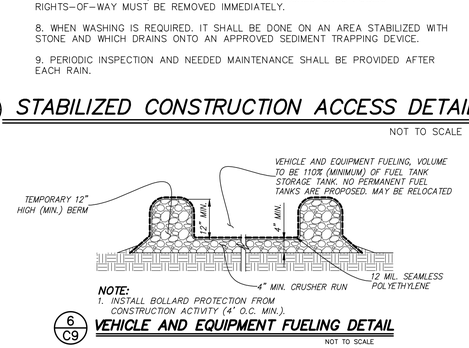


CONSTRUCTION SPECIFICATIONS:

1. INSTALL CONSTRUCTION ACCESS IN ACCORDANCE WITH "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL", SECTION 7A.
2. STONE SIZE –USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
3. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
4. THICKNESS– NOT LESS THAN (6) INCHES.
5. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. IF CONSTRUCTED AS THE ONLY ENTRANCE TO THE SITE, WIDTH SHALL BE TWENTY-FOUR (24) FEET.
6. STABILIZATION FABRIC – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
7. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
8. MAINTENANCE – THE ACCESS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
9. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS ONTO AN APPROVED SEDIMENT TRAPPING DEVICE.
10. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

4/C9 STABILIZED CONSTRUCTION ACCESS DETAIL

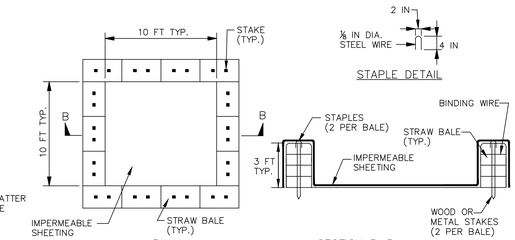
NOT TO SCALE



NOTE:
1. INSTALL BOLLARD PROTECTION FROM CONSTRUCTION ACTIVITY (4' O.C. MIN.).

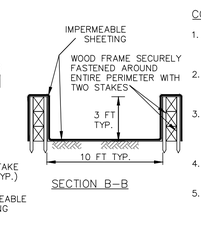
6/C9 VEHICLE AND EQUIPMENT FUELING DETAIL

NOT TO SCALE



NOTE: CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH

WASHOUT STRUCTURE WITH STRAW BALES



CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED), EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

8/C9 ONSITE CONCRETE TRUCK WASHOUT STRUCTURE DETAIL

NOT TO SCALE

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18 Locust Street
Albany, New York 12203

STATE OF NEW YORK — DANIEL R. HERSHBERG — LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR — 044226

REMARKS	DATE
PERMIT SET	7/24/19
AND COMMENTS	8/5/19
STORM SEWER REVISED	9/10/19
GENERAL REVISIONS	8/27/20
BUILDING LAYOUT REV	10/1/20
COMMENT REVISIONS	10/20/20

REVISIONS

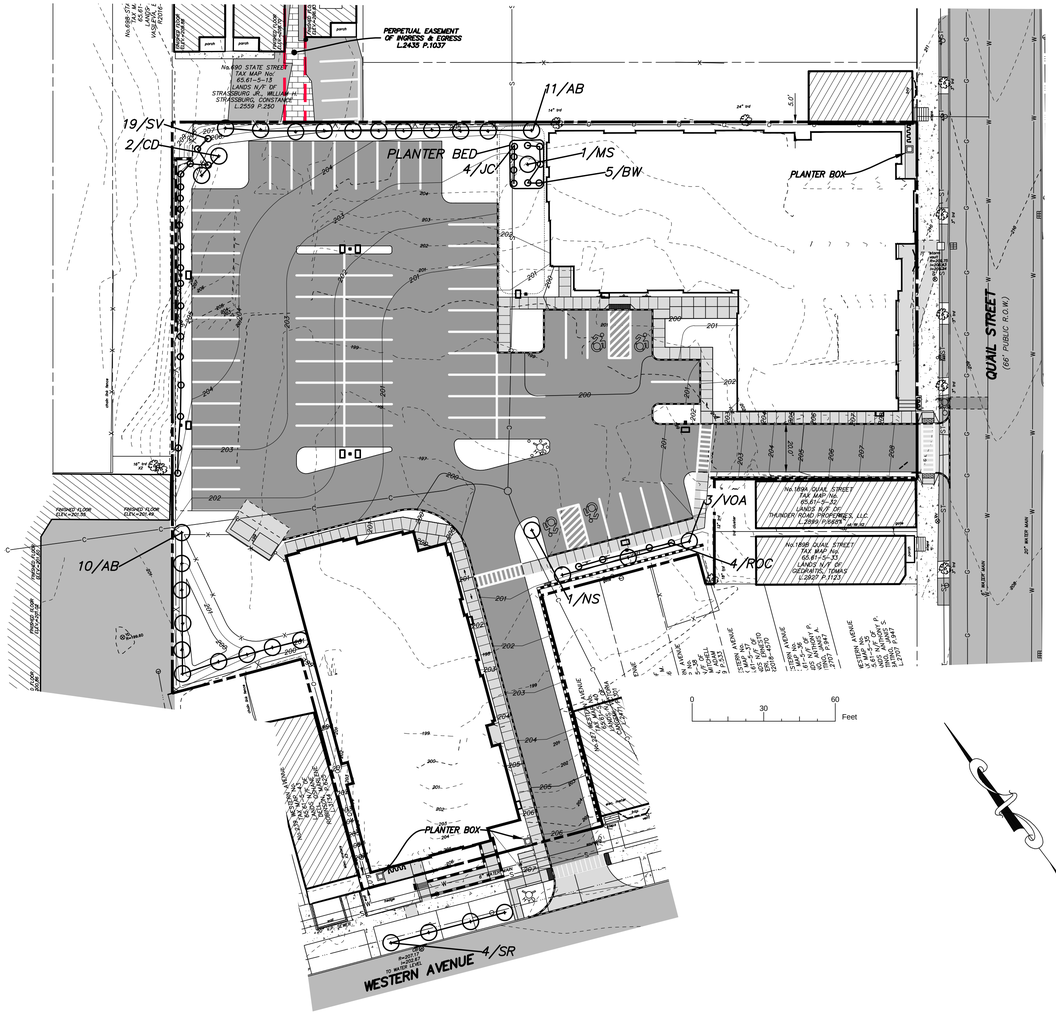
EROSION AND SEDIMENT CONTROL DETAILS
LOFTS AT PINE HILLS
237 WESTERN AVENUE
CITY OF ALBANY, NEW YORK STATE, ALBANY COUNTY

FILE: 180312 | SCALE: AS NOTED | BY: ND | CHK: DRH | DATE: 2/26/19 | 180312-1.DWG

MAP POCKET #8

SHEET C-11

LANDSCAPING PLAN



LEGEND

R.O.W.	RIGHT OF WAY		MONUMENT
No.	NUMBER		IRON ROD
enc.	ENCROACHMENT	MH	MANHOLE
P.O.B.	POINT OF BEGINNING	OR	CATCHBASIN
S.F.	SQUARE FEET		SIGN
N/F	NOW OR FORMERLY		BOLLARD
Ft.	FEET	x	FENCE LINE
Deg.	DEGREE		GUARD RAIL
R	RECORD		OVERHEAD WIRE, UTILITY POLE & GUY WIRE
M	MEASURED		TRAFFIC FLOW ACCESS AREA
N	NORTH		WATER SHUT OFF
S	SOUTH	YD	YARD DRAIN
E	EAST	WV	WATER VALVE
W	WEST		HYDRANT
tel.	TELEPHONE	GV	GAS VALVE
elec.	ELECTRIC		STREET LIGHT
L.	LIBER		LIGHT POLE
P.	PAGE		CONCRETE
	TREE		PAVEMENT

PROPOSED CONCRETE

PROPOSED PAVEMENT

PROPOSED WATER MAIN

PROPOSED SANITARY SEWER

PROPOSED STORM SEWER

199 / 200 PROPOSED CONTOURS

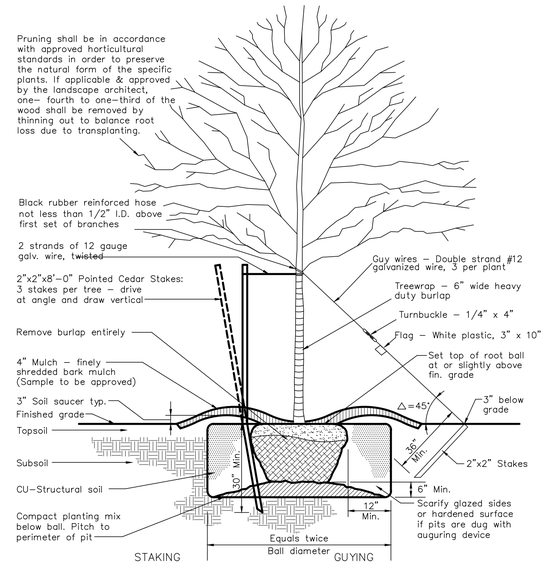
PROPOSED CATCH BASIN

PROPOSED RETAINING WALL

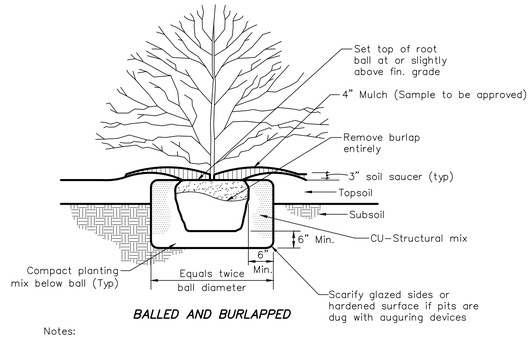
PROPOSED CONCRETE CURB

PLANT MATERIAL SCHEDULE (SITE)

SYM	BOTANICAL NAME	COMMON NAME	SIZE	AMT	COMMENTS
		TREES			
AB	ABIES CONCOLOR	WHITE FIR	5'-6' HT.	21	B & B
CD	CERCIS CANADENSIS	EASTERN REDBUD	2"-2 1/2" CAL.	2	B & B
NS	NYSSA SYLVATICA	BLACK GUM	2 1/2"-3" CAL.	1	B & B-NYNS
MS	MAGNOLIA STYLETTA	STAR MAGNOLIA	5'-6' HT.	1	B & B
SR	SYRINGA RETICULATA	JAPANESE TREE LILAC	2"-2 1/2" CAL.	4	B & B
		SHRUBS			
BW	BUXUS x 'WINTER GEM'	WINTER GEM BOXWOOD	18" HT.	5	CONTAINER GROWN
JC	JUNIPERUS CHINENSIS 'PFITZERIANA'	GOLD TIP PFITZER	3'-4' HT.	4	B & B
RB	RHODODENDRON 'BOULE DE NEIGE'	BOULE DE NEIGE RHODODENDRON	24"-30" HT.	2	B & B
ROL	RHODODENDRON 'ORCHID LIGHTS'	ORCHID LIGHTS AZALEA	24"-30" HT.	4	B & B, NYNS
SV	SYRINGA VULGARIS	COMMON LILAC	4' HT.	19	B & B
VOA	VIBURNUM OPULUS VAR. AMERICANUM	AMERICAN CRANBERRYBUSH VIBURNUM	3'-4' HT.	3	B & B, NYNS



1/C11 **TREE PLANTING DETAIL**
NOT TO SCALE

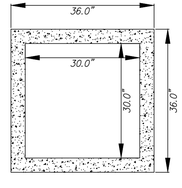


BALLED AND BURLAPPED

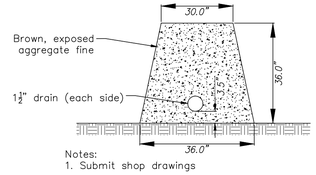
Notes:
1. In areas of mass planting, continuously excavate and mulch entire bed.
2. Do not add fertilizer to planting mix for fall planting.

2/C11 **SHRUB PLANTING DETAIL**
NOT TO SCALE

PLAN VIEW



SECTION VIEW



Notes:
1. Submit shop drawings

3/C11 **PLANTER BOX DETAIL**
NOT TO SCALE

HERSHBERG & HERSHBERG
Consulting Engineers and Land Surveyors
18 Locust Street
Albany, New York 12203

STATE OF NEW YORK — DANIEL R. HERSHBERG — LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR — 044226

REVISIONS		
REMARKS	DATE	
PERMIT SET	7/24/19	
AHD COMMENTS	9/5/19	
STORM SEWER REVISED	9/10/19	
GENERAL REVISIONS	8/27/21	
BUILDING LAYOUT REV	10/11/21	
COMMENT REVISIONS	10/20/21	

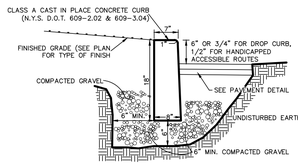
LANDSCAPING PLAN
LOFTS AT PINE HILLS
237 WESTERN AVENUE
CITY OF ALBANY, NEW YORK STATE, ALBANY COUNTY

FILE: 180312 | SCALE: AS NOTED | BY: ND | CHK: DRH | DATE: 2/26/19 | 180312-1.DWG

MAP POCKET #9

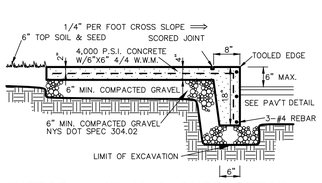
SHEET C-12

DETAILS 1



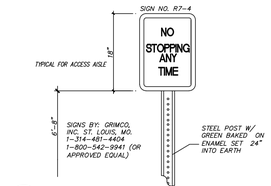
1 C12 **CONCRETE CURB (CAST IN PLACE) DETAIL**

NOT TO SCALE



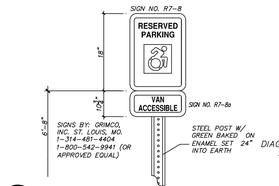
2 C12 **INTEGRAL WALK & CURB DETAIL**

NOT TO SCALE



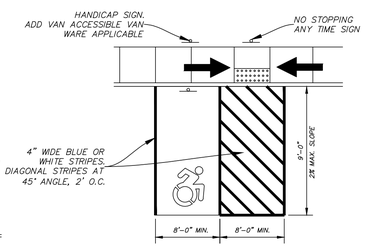
3 C12 **HANDICAP SIGN**

N.T.S. TYPICAL FOR ACCESS AISLE

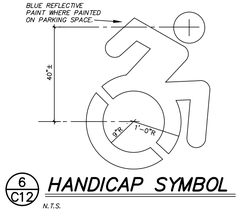


4 C12 **HANDICAP SIGN**

N.T.S. TYPICAL FOR PARKING SPACE

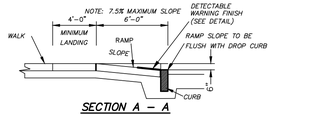


5 C12 **HANDICAPPED PAVEMENT STRIPING DETAIL**

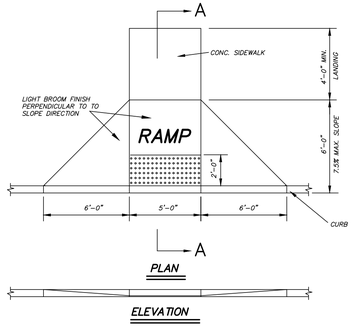


6 C12 **HANDICAP SYMBOL**

N.T.S.

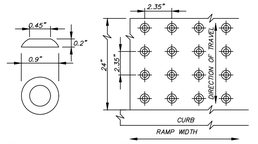


SECTION A – A



PLAN

ELEVATION



DETECTABLE WARNING SURFACE NOTES:

1. THE DETAILS PROVIDED ARE NOT DRAWN TO SCALE. THE QUANTITY OF DOMES DEPICTED ON THE DETECTABLE WARNING UNIT (THE DOMES AND THE ENTIRE 24" LEVEL SURFACE) IS FOR ILLUSTRATION ONLY.

2. INSTALLATION SHALL MEET ALL APPLICABLE ADA CODES AND STANDARDS.

3. CONFORM TO STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION MAPS ENTITLED 'DETECTABLE WARNING DETAILS, No. M608-5R1'.

DETECTABLE WARNING UNIT DIMENSIONS:
1. THE SIZE OF THE DETECTABLE WARNING FIELD SHALL BE 24" IN THE DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE, EXCLUSIVE OF SIDE FLARES.

DOME ALIGNMENT:
1. THE ROWS OF DOMES SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL TO THE GRADE BREAK BETWEEN THE RAMP LANDING OR CURB RAMP AND THE STREET.

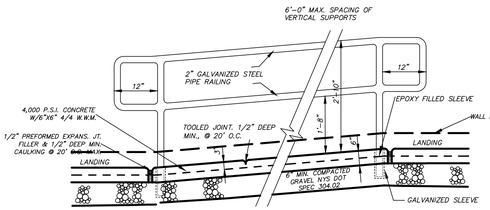
2. WHERE DOMES ARE ARRAYED RADIALLY THEY MAY DIFFER IN DOME DIAMETER AND CENTER-TO-CENTER SPACING WITHIN THE RANGES SPECIFIED ON THIS SHEET.

DETECTABLE WARNINGS COLOR REQUIREMENTS:
1. THE DETECTABLE WARNING FIELD SHALL BE THE COLOR SPECIFIED IN THE CONTRACT DOCUMENTS OR MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

DETECTABLE WARNINGS LOCATIONS:
1. DETECTABLE WARNINGS SHALL BE LOCATED SO THAT THE EDGE OR CORNER OF THE WARNING FIELD NEAREST TO THE ROADWAY IS 5" TO 9" FROM THE FRONT OF THE CURB OR THE ROADWAY EDGE (12" WHERE TRAVERSABLE CURB IS USED).

2. THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 6'-0" MINIMUM AND 15'-0" MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL.

DETECTABLE WARNING SURFACE DETAIL

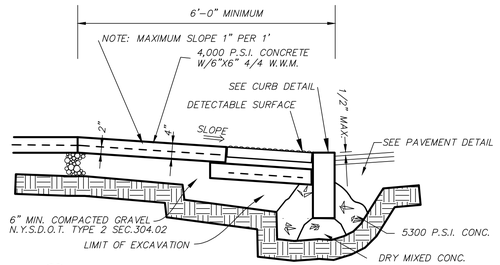


LONGITUDINAL SECTION

NOTE: MAXIMUM GRADE 1 HORIZONTAL ON 12 VERTICAL. MAXIMUM LENGTH 30'

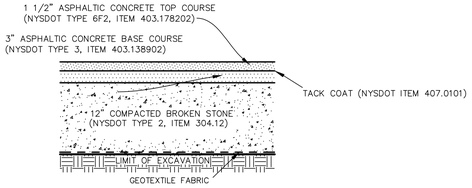
8 C12 **RAMP AND RAIL DETAIL**

NOT TO SCALE

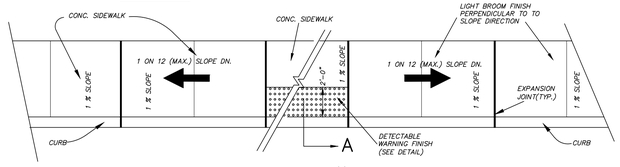


9 C12 **HANDICAPPED RAMP DETAIL**

NOT TO SCALE

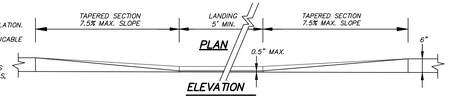


10 C12 **ASPHALT PAVEMENT DETAIL**



RAMP NOTES:

1. SEE STANDARD DETAILS FOR CURBS, SIDEWALK, AND SIDEWALK RAMP INSTALLATION.
2. INSTALLATION SHALL MEET ALL APPLICABLE ADA CODES AND STANDARDS.
3. CONFORM TO STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION MAPS ENTITLED 'SIDEWALK CURB RAMP DETAILS, No. M608-3R2'



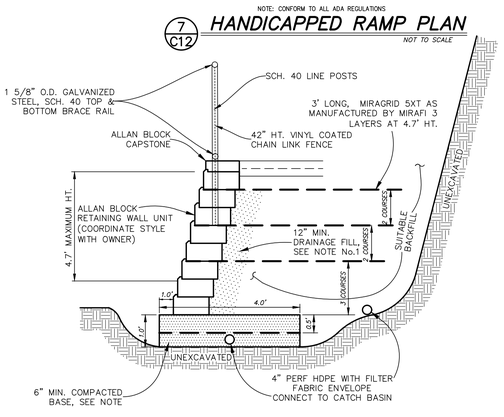
PLAN

ELEVATION

NOTE: CONFORM TO ALL ADA REGULATIONS

7 C12 **HANDICAPPED RAMP PLAN**

NOT TO SCALE



FOR WALLS OVER 3.5' HIGH (UP TO 4.7')

NOTES:

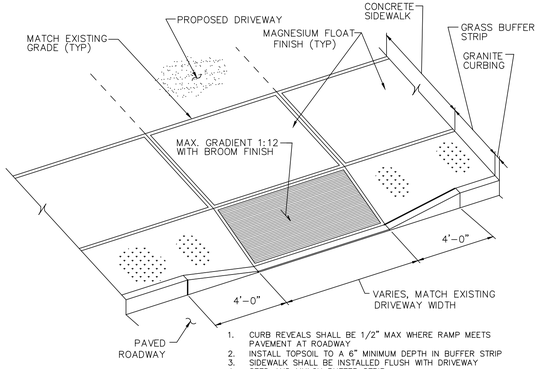
1. BASE AND DRAINAGE MATERIAL MUST BE WELL GRADED COMPACTIBLE AGGREGATE, 0.25 INCH TO 1.5 INCH, (5mm-38mm) WITH NO MORE THAN 10% PASSING THE #200 SIEVE.

2. SUBMIT SHOP DRAWINGS FOR APPROVAL STAMPED BY A NEW YORK STATE LICENSED ENGINEER FOR FINAL WALL DESIGN.

3. SEE FENCE (FOR FALL PROTECTION) INSTALLATION DETAIL.

13 C12 **SEGMENTED BLOCK RETAINING WALL DETAIL**

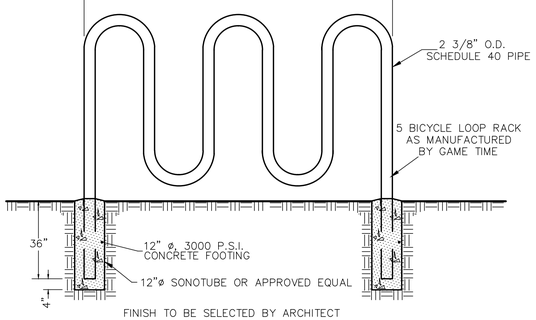
NOT TO SCALE



1. CURB REVEALS SHALL BE 1/2" MAX WHERE RAMP MEETS PAVEMENT AT ROADWAY
2. INSTALL TOPSOIL TO A 6" MINIMUM DEPTH IN BUFFER STRIP
3. SIDEWALK SHALL BE INSTALLED FLUSH WITH DRIVEWAY
4. SEED AND MULCH BUFFER STRIP
5. SEE STANDARD SIDEWALK DETAIL FOR SIDEWALK INSTALLATION.

11 C12 **DRIVEWAY/SIDEWALK DROP CURB DETAIL**

NOT TO SCALE

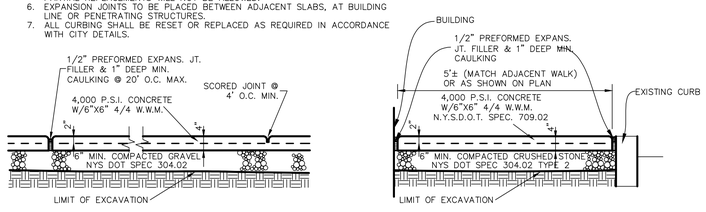


FINISH TO BE SELECTED BY ARCHITECT
SUBMIT SHOP DRAWINGS FOR APPROVAL

12 C12 **BICYCLE LOOP RACK DETAIL**

NOT TO SCALE

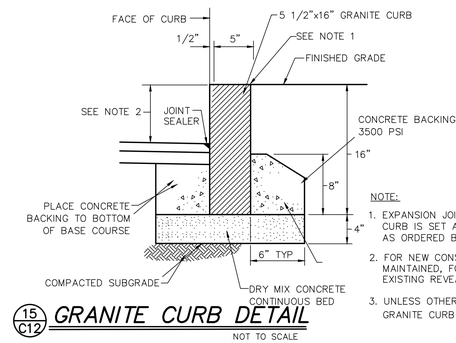
NOTES:
1. SIDEWALK SLOPE FROM BUILDING WALL TO CURB TO BE 1/8" PER FOOT
2. SIDEWALK FINISH TO BE MAGNESIUM FLOAT FINISH
3. CONCRETE WALK TO CONFORM TO CITY OF ALBANY ENGINEERING SPECIFICATIONS
4. CONCRETE USED SHALL HAVE AN AIR CONTENT OF 5% MIN. TO 7% MAX., AND A SLUMP OF THREE INCHES MIN. TO FIVE INCHES MAX.
5. ALL CONCRETE SIDEWALK REPLACEMENT SHALL BE TO FULL PANEL LIMITS. PARTIAL REPLACEMENTS WILL NOT BE ALLOWED.
6. EXPANSION JOINTS TO BE PLACED BETWEEN ADJACENT SLABS, AT BUILDING LINE OR PENETRATING STRUCTURES.
7. ALL CURBING SHALL BE RESET OR REPLACED AS REQUIRED IN ACCORDANCE WITH CITY DETAILS.



LONGITUDINAL SECTION *CROSS SECTION*

14 C12 **CONCRETE WALK REPAIR DETAIL IN CITY R.O.W.**

NOT TO SCALE



NOTE:

1. EXPANSION JOINT MATERIAL SHALL INSTALLED WHEN CURB IS SET AGAINST NEW OR EXISTING SIDEWALK AS ORDERED BY THE ENGINEER.
2. FOR NEW CONSTRUCTION, A 6" CURB REVEAL SHALL BE MAINTAINED, FOR CURB REPLACEMENT OR RESETTING, MATCH EXISTING REVEAL. FOR DROP CURB, MAXIMUM HEIGHT SHALL BE 1/2".
3. UNLESS OTHERWISE NOTED, ALL ITEMS ASSOCIATED WITH GRANITE CURB INSTALLATION SHALL BE PAID FOR UNDER ITEM 609.0201

15 C12 **GRANITE CURB DETAIL**

NOT TO SCALE

HERSHBERG & HERSHBERG
Consulting Engineers and Land Surveyors
18 Locust Street
Albany, New York 12203

STATE OF NEW YORK DANIEL R. HERSHBERG LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR 044226

REMARKS	DATE
AMD. COMMENT LETTER	5/22/19
PERMIT SET	7/24/19
AMD. COMMENTS	9/5/19
GENERAL REVISIONS	8/27/21
BUILDING LAYOUT REV.	10/11/21
COMMENT REVISIONS	10/20/21

REVISIONS

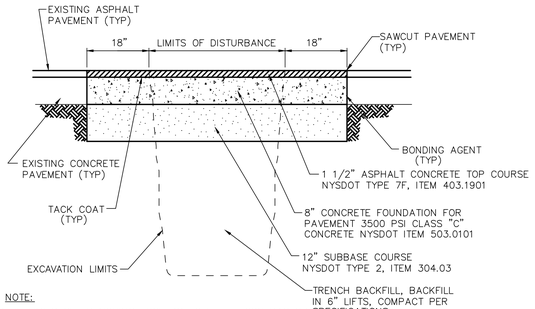
DETAILS #1
LIFTS AT PINE HILLS
237 WESTERN AVENUE
CITY OF ALBANY, NEW YORK STATE, ALBANY COUNTY

FILE: 180312 | SCALE: AS NOTED | BY: ND | CHK: DRH | DATE: 1/9/19 | 180312-1.DWG

MAP POCKET #9

SHEET C-13

DETAILS 2



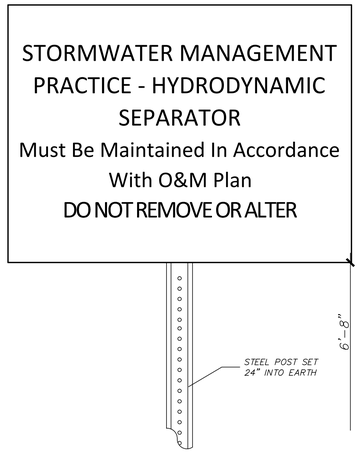
NOTE:

1. IF LIMITS OF TRENCHING EXCEEDS 50 FEET, CONTRACTOR SHALL COMPLETE CURB TO CURB MILLING PER CITY DETAILS

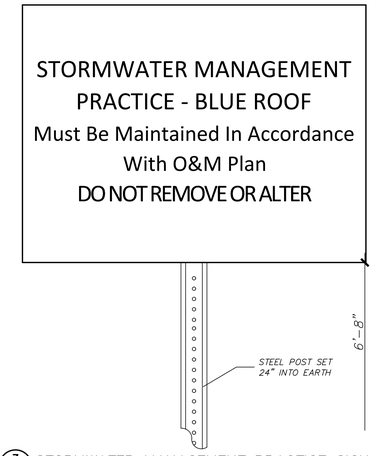
2. ALL PAVEMENT MARKINGS DISTURBED SHALL BE RESTORED TO THE SATISFACTION OF THE CITY

3. ALL JOINTS TO BE SEALED WITH ASPHALT EMULSION (AC-20) NYSDOT ITEM 702-0500

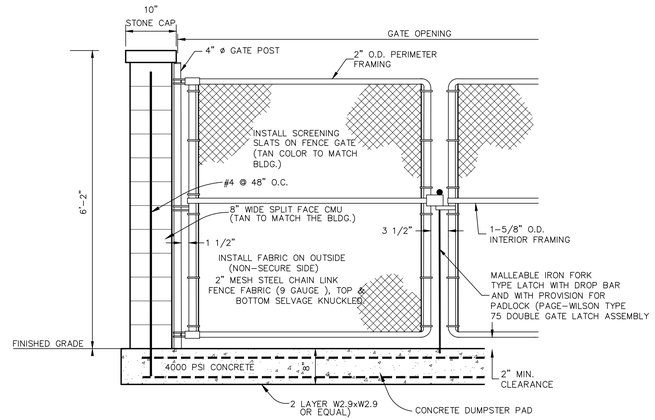
1/C13 **STREET RESTORATION CONCRETE PAVEMENT DETAIL (CITY R.O.W.)**
NOT TO SCALE



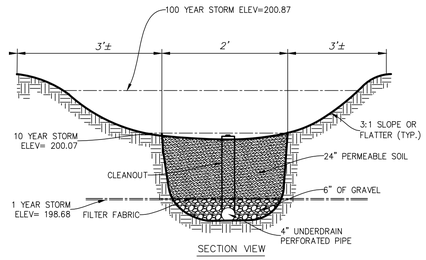
2/C13 **STORMWATER MANAGEMENT PRACTICE SIGN (AT HYDRODYNAMIC SEPARATOR LOCATION)**
NOT TO SCALE



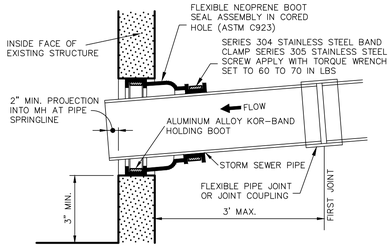
3/C13 **STORMWATER MANAGEMENT PRACTICE SIGN (AT BLUE ROOF LOCATION)**
NOT TO SCALE



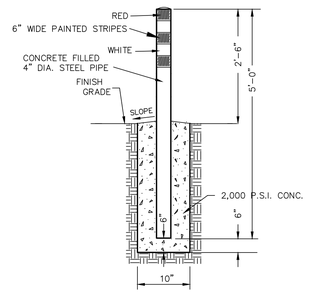
4/C13 **DUMPSTER ENCLOSURE & GATE DETAIL**
NOT TO SCALE



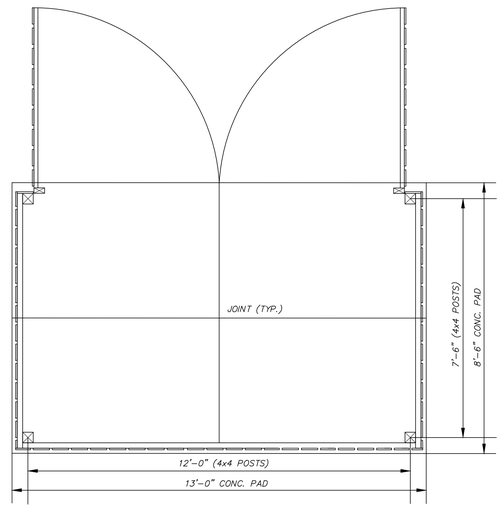
5/C13 **DRY SWALE DETAIL**
NOT TO SCALE



7/C13 **CORED IN FIELD CONNECTION**
NOT TO SCALE



8/C13 **BOLLARD DETAIL**
NOT TO SCALE



6/C13 **TRASH ENCLOSURE**
NOT TO SCALE

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Albany, New York 12203

STATE OF NEW YORK DANIEL R. HERSHBERG LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR 044226

REVISIONS	DATE
PERMIT SET	7/24/19
LMD COMMENTS	9/5/19
STORM SEWER REVISED	9/10/19
GENERAL REVISIONS	8/27/21
BUILDING LAYOUT REV	10/11/21
COMMENT REVISIONS	10/20/21

DETAILS #2
LOFTS AT PINE HILLS
237 WESTERN AVENUE
CITY OF ALBANY, NEW YORK STATE, ALBANY COUNTY

FILE: 180312 | SCALE: AS NOTED | BY: ND | CHK: DRH | DATE: 2/26/19 | 180312-LDWG