January 23, 2017

Ray Burger, Director of Planning
Town of Dryden Planning and Zoning Department
93 East Main Street
Dryden, NY 13053

RE: Evergreen Townhouses Site Plan Review Submission

Dear Ray,

Please find attached our submission for Site Plan Review and Special Permit for your review and referral to the Planning Board for consideration at the February 23rd meeting. As you know, on October 5, 2016, the project received approval of PUD Concept plan and a SEQR negative declaration from the Town Board.

We are submitting the following materials for your review:

1. Cover letter and transmittal
2. Project Description and Proposed Amenities
3. Drawings:
    - L001 Site Rendering
    - L002 Open Space Diagram
    - L003 Context Diagram
    - C100 Utility Plan
    - C101 Erosion and Sediment Control Plan
    - C102 Stormwater Management Plan
    - C500 Erosion and Sediment Control Details
    - C501 Erosion and Sediment Control Details
    - C502 Storm & Sanitary Details
    - C503 Storm Sewer Details
    - C504 Stormwater Management Details
    - C505 Water System Details
    - L101 Site Clearing & Demolition Plan
    - L201 Layout Plan
    - Photometric Site Plan
    - L301 Grading Plan
    - L401 Planting Plan
    - L501 Site Details
    - L502 Site Details
    - A101 Floor Plans – Building A
    - A102 Floor Plans – Building B
    - A201 Exterior Elevations – Building Type A
    - A202 Exterior Elevations – Building Type B
    - AP101 Perspectives – Building Type A
    - AP102 Perspectives – Building Type B
    - AP103 Site Perspectives

Trowbridge Wolf Michaels Landscape Architects LLP
1001 West Seneca Street, Suite 201 Ithaca, New York 14850 ph: 607.277.1400
www.twm.la

- AP104 Example Color Palette
- PV100 PV Roof Plan – Building Type A
- PV101 PV Roof Plan – Building Type B

4. Site Amenities Cut Sheets
5. NYSDOT Correspondence
6. Draft Preliminary Stormwater Pollution Prevention Plan
7. Draft Town of Dryden Notice of Ground Disturbance/Area Tally Form
8. Application fee will be delivered by client under separate cover

The Town Board requested that the following conditions be addressed:

a. That an approvable Stormwater Pollution Prevention Plan (SWPPP) be developed and reviewed by the Town engineer. *Draft Preliminary Stormwater Pollution Prevention Plan, dated January 2017, is attached.*

b. The applicant shall work with the NYS Department of Transportation to develop appropriate signage and pavement markings to allow safe pedestrian crossing of Route 366. *Informational material has been provided to NYSDOT and preliminary comments have been received.*

c. Investigate the incorporation of switchbacks to provide more accessible bike and pedestrian access to the Varna-Freeville Trail located on the property. *Refer to site plans for layout and grading of proposed trail access.*

d. The applicant shall redesign the project so there is an unobstructed (no decks or patios, among other things) 15-foot yard between units 25 through 36 and the southeast property line; however, walls and fences are allowed within the 15-foot yard. *Refer to site and architectural plans for modifications.*

Please feel free to contact me with any questions regarding this submission, or if you should need additional information. We look forward to meeting with you and the Town Board on February 23, 2017.

Sincerely,

Kimberly Michaels, RLA LEED AP
Principal

PROJECT DESCRIPTION & PROPOSED AMENITIES

Project Purpose, Need & Benefit

The proposed Evergreen Townhouse development is located at 1061 Dryden Road in the Town of Dryden. This project includes 36 units of townhouse-style residential units situated along a residential drive, and will increase density and population base within the Hamlet of Varna. In addition, the project will provide public amenity in the form of development of a section of the Varna-Freeville Trail along the former Lehigh Valley Railroad railbed.

The proposed development consists of 36 units of attached 2-story, for-rent townhouses constructed on the 6.537-acre tax parcel 55-1-16, located at 1061 Dryden Road in the Town of Dryden. The subject parcel is currently zoned Rural Residential District. We are proposing that the parcel be rezoned as a Planned Unit Development District (PUD) to provide a design that increases density and population base within the Hamlet of Varna. The project incorporates shared green space and amenities, and completes a crucial link in the Varna-Freeville Rail-Trail to connect to the Ithaca, Freeville and Dryden trail network.

Zoning Analysis & PUD Request

The existing site, tax parcel 55-1-16 is currently zoned as Rural Residential (RR) which is described as "residential uses situated in a rural landscape. Single-and two-family homes are the predominant form of development. Agriculture is also expected to be a substantial land use well into the future." The parcel currently has access to both sanitary sewer and water services. By right, the project could support approximately fourteen 10,000 sf lots which could contain a two-family home, for a total of 28 possible units. Development in this manner would result in impacts to existing vegetation and divide open space in a traditionally suburban layout.

The project seeks approval as a Planned Unit Development (PUD) in order to provide clustered housing, preserve vegetation, limit site disturbance, and conglomerate open space.

The proposed residential use is a permitted use as of right, but the proposed density of 5.5 dwelling units per acre would only be feasible within a Planned Unit Development District. In the existing RR district, multi-family dwellings are permitted, with a Special Use Permit.

The proposed parcel abuts two other districts, the Varna Hamlet Residential District (VHRD) and Neighborhood Residential District (NR) to the south. For townhouse development, the Varna Hamlet Residential District permits up to 11 dwelling units per acre and 60% of the lot is required to be green space. The proposed Evergreen Townhouse development would provide half that density with 5.5 dwelling units per acre and includes approximately 68% of green space.

The project design has been updated since the PUD Concept submission to minimize impacts on the neighboring properties to the east:

- Modifications were made so that porches at the backs of all buildings are inboard of the building footprint; porches were added at the ends of the buildings to provide equivalent amenity for the end units. There will be no obstructions in the 15-foot side yard behind Buildings E& F (Units 25-36
- Layout of buildings and roads has shifted to the west to eliminate a site retaining wall along the east property line and to minimize impacts to the existing vegetative buffer. A privacy fence was added along the eastern property line.

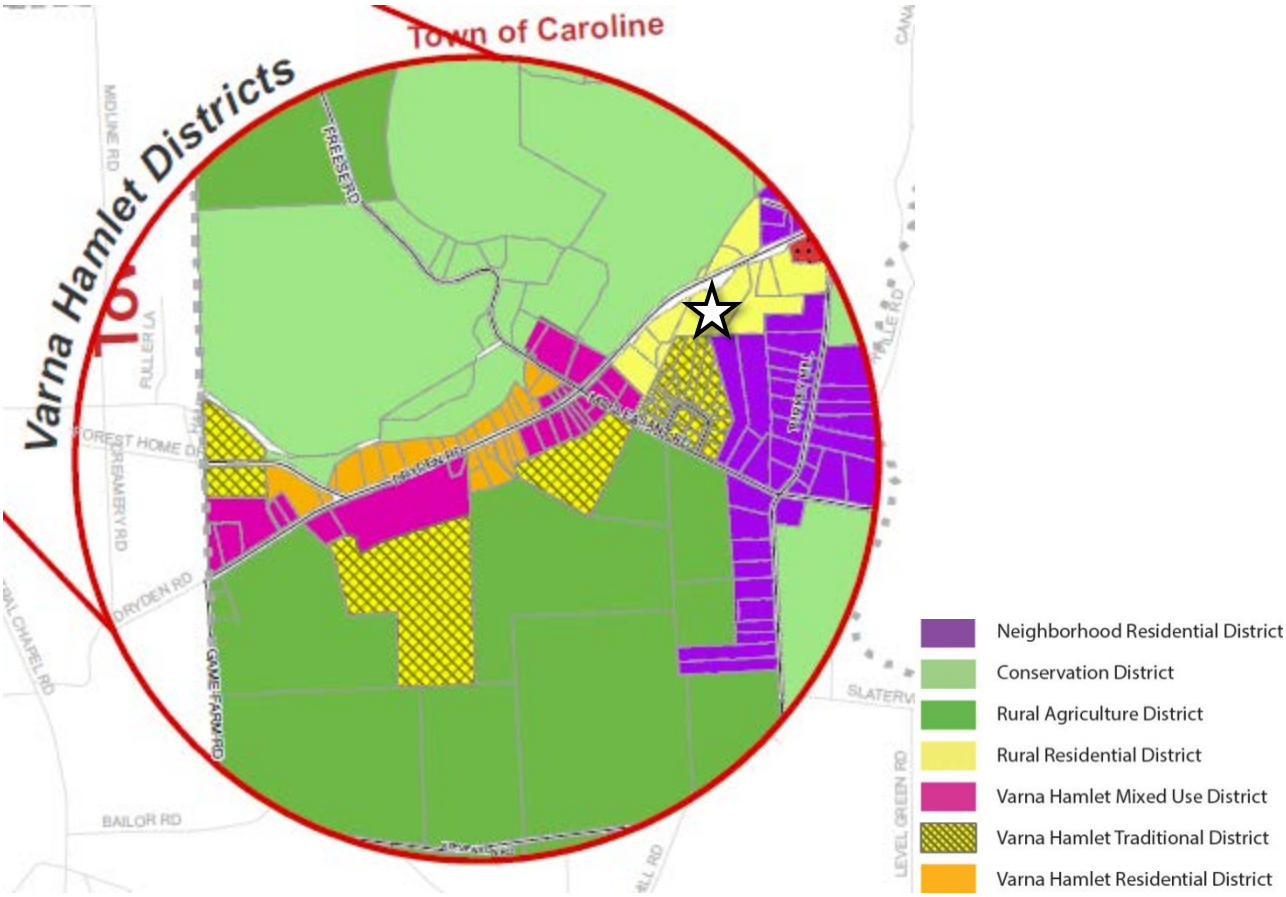


Figure 1: Town of Dryden Zoning Map with Varna Inset, dated December 1, 2012. Subject parcel is identified with a white star.

Conformance with Other Planning Initiatives:

The project design takes into consideration the guidelines and recommendations in the Town of Dryden Residential Development Guidelines, the Varna Community Development Plan, and the Varna Design Guidelines and Landscape Standards.

The Town's planning documents share a common theme of recommending increased density at important nodes, specifically within the Hamlet of Varna. The vision for the hamlet is a mixed-use, pedestrian-oriented community that is well-designed with a high level of amenity. The success of this vision is largely dependent on increased population density to support retail and community services that will make the hamlet a vibrant place to live. The Evergreen Townhouse development will contribute to realization of this vision with increased residential density in a manner that is consistent with the adopted guidelines and recommendations.

While not in the Varna Core Study Area of the Varna Community Development Plan, the project site is located within the greater Varna Hamlet Area, and in fact abuts the Core Study Area along the south property line. The project site is approximately 1/3 of a mile from the intersection of Route 366 and Freese Road/Mt. Pleasant Road. One of the recommended residential design typologies is the "Varna Hollow," a townhouse development with community amenities at 6 dwelling units (DU) per acre. The Evergreen Townhouse development closely approximates this recommended density with a proposed density of 5.5 DU per acre. The development is appropriately sited in terms of connectivity to existing transportation networks, including three TCAT bus routes and satisfactory cycling routes, and access to existing electric, water and sewer services.

Another important recommendation of the planning studies is to conserve and protect existing vegetated buffers. The project site is surrounded by existing deciduous and evergreen tree buffers, and the intent is for them to be retained as much as possible. Proposed development is situated in the large open meadow area central to the parcel. Because this existing buffer will remain, views to the site will remain largely unchanged.

The property contains approximately 740 feet of Lehigh Valley Railroad rail bed that is identified as the Varna-Freeville Rail-Trail. As a further contribution towards protecting existing green space, approximately 1.2 acres of open space will be preserved. The project proposes improvements to the trail within the property boundaries and the developer will deed the trail property to the Town of Dryden. This area of the project site is directly adjacent to a parcel already owned by the Town of Dryden that connects southward toward Mount Pleasant Road, and the Town of Dryden already holds an easement for water and sewer lines. Completing this section of the Varna-Freeville trail will be an important amenity that can be shared by residents of the development and the large community. Concrete sidewalks will connect all the units within the site, with a connection to the Varna-Freeville trail and future sidewalk network that will be included in the Route 366 corridor within the hamlet.

The site is graded to minimize cut and fill as much as possible by following the natural contours while maintaining ADA accessibility. The intent is for any excavated suitable soil material to be redistributed on site and revegetated, minimizing trucking and disposal. Best practices for erosion and sedimentation control will be employed during construction and as required by NYSDEC for the SPDES permit. For post-construction control, a series of bioretention basins and a detention basin will be designed as attractive green spaces that soften the landscape around and between townhouse units.

Figure 2: Project Site within Hamlet Study Area (Varna Community Development Plan, 2011)

Building Design

Situated on the site are a series of six (6) two-story townhouse buildings, each containing a grouping of six (6) units. The overall goal for this Planned Unit Development (PUD) was to create a tight-knit, walkable residential community.

Each townhouse building is designed to be two-stories with traditional gabled roofs, deep covered entry porches, and typical (yet durable) residential building materials. Each of the buildings is connected to one

another with a continuous sidewalk that loops the entire development, and each unit has its own private drive and entry walk. Each unit will have a kitchen, dining area, living area, two and one-half bathrooms, and three (3) bedrooms.

Each townhouse building will contain some units where all of the bedrooms will be on the second floor and some where the master suite is located on the ground floor. The units will be clad with materials that are both aesthetic and durable and that will maintain their beauty for years. These materials may include a combination of stone, cementitious materials and vinyl. Each building will employ energy efficient doors and windows, building envelope and mechanical systems.

A 20 x 30' maintenance building is proposed near Building F, at the top of the entrance drive. The building will house maintenance equipment and supplies. The architecture and materials of the maintenance building will be in keeping with the townhome buildings.

Circulation

The proposed project has a single vehicular entrance located on NYS Route 366/Dryden Road. The existing driveway is accessed via a shared curb cut with a driveway easement agreement. The current plan places the proposed driveway entirely on the parcel, requiring modifications to the existing shared curb cut on Route 366. Schematic drawings of the driveway have been provided to NYSDOT for their initial review and comment. Refer to attached correspondence.

The internal roadway will serve all 36 units and provide a turnaround area that can accommodate a standard aerial apparatus fire truck. Also proposed is a small, 11-space parking lot in the center of the driveway loop. The driveway will be 24 feet wide and asphalt paved.

Pedestrian circulation within the property is accommodated with concrete sidewalks along the drive. A connection to the Varna-Freeville Rail-Trail segment that traverses the site is also proposed. The portion of the trail that falls within the property will be a 4-foot wide asphalt paved pathway. In order to minimize site disturbance, minimize stormwater runoff, and to retain visual and aesthetic consistency with the existing trail adjacent to the project, the applicant proposes to install trail subbase but include future paving in asphalt in escrow.

The parcel is served by TCAT bus routes 40, 43 and 53. There is a bus stop in front of the property and an existing bus shelter is located across Route 366 in front of the Pine Ridge Residences.

NYS Route 366/Dryden Road is identified on the Tompkins County Bicycle Map as "Good" in terms of suitability for cycling.

Bicycle racks are provided at two locations, one near the maintenance building and one in the central parking island. It is assumed that covered bike storage is inside individual units or garages.

Proposed Amenities

The proposed project will contribute to the tax base for the community. Based on an anticipated assessment of $4.5 million, the total anticipated yearly tax revenue will be $191,000. The project will include physical improvements to the section of the Varna-Freeville Rail-Trail in the form of a paved, 4-foot wide asphalt path within the property boundaries, approximately 740 linear feet. After the improvements have been completed, the developer will deed the trail lands (approximately 1.2 acres) to the Town of Dryden.

In addition, the site design includes picnic areas along the improved trail, a fire pit located next to the infiltration facility, dumpster and recycling bin enclosure, bicycle racks, fire hydrants, and entrance drive lighting.

Traffic Impacts

Route 366 accommodates the daily traffic volume adequately, as noted in the Varna Community Development Plan, which analyzed 2011 traffic count data and concluded that it operates at Level of Service

(LOS) A. A traffic impact assessment was prepared by SRF Associates and submitted to the Town on August 9, 2016. It was determined that both the level of service and sight distances are adequate.

Landscape

The landscape design will consist of a number of types: buffer vegetation, stormwater plantings, townhouse plantings, and open lawn. While the existing buffer vegetation will remain, additional trees and large shrubs will be added to enhance the buffer and fill in any existing gaps. Stormwater plantings will be selected to effectively treat and slow down runoff, and provide habitat for birds and pollinators. Townhouse plantings will include ornamental trees, shrubs, perennials and bulbs to provide foundation landscaping and curb appeal. Open lawn areas will be preserved to allow for recreational use. No plants on the Tompkins County or NYS invasive plant lists will be proposed, and where possible, native plant materials will be used. All plantings will be suited to soil conditions, and will not require irrigation beyond the initial establishment period.

Stormwater

The existing 6.537-acre site is primarily comprised of meadow. There is approximately 35 feet of fall from the highest point to the lowest point of the site, with drainage generally flowing from east to west. Drainage from the site eventually makes its way to Fall Creek, which is classified by the New York State Department of Environmental Conservation (NYS DEC) as Class "A" stream. According to the Tompkins County Soil Survey, the site is located in Hydrologic Soils Groups "A/D" and "C".

The proposed site design plans to add approximately 2 acres of impervious cover which will include the housing units, access drives, parking and sidewalks. The increase in runoff due to the added impervious cover will be treated by multiple water quality treatment and runoff reduction practices and a detention pond to meet the requirements of the NYS DEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002). All standard practices for soil and erosion control during construction will be included and monitored per the permit.

Standard practices will be installed to meet the runoff reduction and water quality treatment standard. The practices include a hydrodynamic unit, grass lined swales and two infiltration basins. A draft preliminary Stormwater Pollution Prevention Plan (SWPPP) and a Draft Notice of Ground Disturbance have been completed for this submission, refer to attached report.

Utilities

The proposed site is located adjacent to an 8" sanitary line which is located in the Turkey Hill Sewer District. A new main system of mains would be constructed running east to west across the site and tie into the existing line south of the site. The connection would be made by constructing a new manhole over the existing Town main.

A 6" ductile iron water main is located north of the site along NYS Route 366 and there is an existing hydrant northeast of the site. The project plans to tie into the existing 6" service and provide a 6" ductile iron pipe main through the site. New fire hydrants have been sited within the project site as necessary.

Natural gas service will be provided by NYSEG and there is an existing line at the northeast corner of the site. Electric service will be provided to the site via NYSEG overhead wire that currently exists along Route 366.

We have discussed the project with the Town Engineer and based on the projected usage and loads there are no capacity issues with either water distribution or sanitary sewer at the project location. The Town Engineer has also stated that areas of concern in the system that services this site are being addressed and that this project should not add any additional stress to the systems.

We have submitted notifications to NYSEG's engineering department and are waiting on information from NYSEG about whether natural gas is available. We expect to hear from NYSEG within 30 days. If natural gas is not available at the site then propane will be provided by an independent supplier.

Site Lighting

Limited site lighting is proposed at the entrance drive and at the central parking spaces. The light fixtures will be pedestrian scaled, LED luminaires. The driveway poles will be sited away from the eastern property line on the west side of the drive. The fixtures have a BUG rating of U-1, minimizing uplight pollution. The remainder of proposed lighting will consist of architectural porch and garage lighting typical of residential homes. Refer to attached photometric site plan based on preliminary layout and fixture selection.

Solar Photovoltaic

A solar photovoltaic (PV) system is planned for each townhouse cluster. Due to the siting of the townhouses, three townhouse clusters will have solar PV on the front of the building and three will have solar PV on the rear of the building. This can be seen in the renderings of the townhomes.

It has been decided to allocate the energy that is produced by the solar PV array directly to each townhome. This will allow the tenant to reap the benefits of the solar energy production and in turn lower the tenant's electric utility bill. This will be executed by directly tying 1/6 of the solar PV modules in any single townhome cluster to each individual townhome.

Due to the building orientation and roof layout the amount of solar energy generated will vary from townhome cluster to townhome cluster. The following provides a summary of the estimated energy production and utility bill savings per year.

	System size (kW DC)	Energy produced (AC kWh)	Dollars saved ($/yr.)[1]	Dollars saved per individual townhome ($/yr.)[1]
Building A (homes 1-6)	18.0	21,612	$2,161	$360
Building B (homes 7-12)	18.0	21,861	$2,186	$364
Building C (homes 13-18)	18.0	20,791	$2,079	$346
Building D (homes 19-24)	23.4	28,926	$2,892	$482
Building E (homes 25-30)	23.4	28,582	$2,858	$476
Building F (homes 31-36)	23.4	28,582	$2,858	$476
Total Site	**124.2**	**150,355**	**$15,035**	

1. Assuming a utility rate of $0.10/kWh

The energy saved from this solar PV system is equivalent to an estimated reduction of 110,448 lbs. of carbon dioxide per year.

Heating, Cooling, and Ventilation (HVAC)

The HVAC system basis of design is high efficiency gas fired furnaces, one per townhouse.

M&R Entities, LLC
EVERGREEN TOWNHOMES

SITE MATERIAL CUT SHEETS

HOLT ARCHITECTS

TWLA

Solana®

The modern geometric design of the Solana® complements a diverse assortment of contemporary architectural settings. It's urbanesque yoke design offers not only aesthetic beauty, durability optical efficiency, but takes street, area, and medium mount lighting to the next level. Our convective AAD™ Advanced Air-flow Dynamics, maximizes heat sink effectiveness to deliver unsurpassed thermal management for long-life LED performance and energy efficiency.

Solana®
SL760 Post Top

Post Top SL760, SL660

- Glare reducing Soft View™ lens system
- DLC Listed
- Cast aluminum body
- Tool-less access to driver
- Mounts over a standard 3" tenon
- Optional tear drop lens
- Wide range of lumen outputs
- Dimmable driver (0-10 volts)
- House Side Shield (HSS) option
- Powder coat finish in 6 standard colors

SOLANA® SL660

The **Solana® SL660** Post-Top Luminaire's modern geometric design complements a diverse assortment of contemporary architectural settings. It's urbanesque yoke design offers not only aesthetic beauty, durability and optical efficiency, but takes street, area, and medium mount lighting to another level. The **Solana® SL660** is well suited for all roadway, site and pedestrian environments.

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED

PROJECT: _____

TYPE: _____

ORDERING EXAMPLE: PT-SL660-CA-84L45T5-F-MDH05-R1-MOT1-HSS-FHD / UBKT

	SL660												
MOUNTING CONFIG.	SERIES	LENS	NO. OF LEDS	COLOR TEMP K	DISTRIBUTION TYPE	DISTRIBUTION ORIENTATION	DRIVER	CONTROLS	MOTION SENSOR	HOUSE SIDE SHIELD	DUAL FUSE & HOLDER	COLOR	
PT	Medium Area Post Top	CA	84L	27(00) K	T2	F	MDL03	OPTIONS				UBKT	UBK
1W		FG	56L[1]	35(00) K	T3		MDL05	R	MOT1[2]	HSS	FHD	UBT	UB
1A		SV1*	42L[1]	45(00) K	T3R		MDH03	R1	MOT2[2]			ULBT	ULB
2A		SV2**			T4		MDH05	PEC				USLT	USL
2A90					T5							UWHT	UWH
1AM												UCHS	
2AM													
			[1] Not available in 05 driver										

A = Arm Mount **AM** = Arm Mid-Mount **W** = Wall Mount (*Designate 1WCB if surface mount box required)

Product Specs

Optical
- IP65 rated optic module with BUG rating of U-1.
- Available in IES Type 2, 3, 3R, 4 and 5 distribution.
- Utilizes high output, high brightness LEDs.
- Operates at -40°C (-40°F) to +50°C (122°F) ambient air temperature range.
- Typical CRI of 70, CCT 2700, 3500 and 4500K. Call factory for custom CCT.
- LM-79 and LM-80 tests in accordance with IESNA standards.
- Lumen depreciation rating L_{70}>150,000 hrs. projected per TM-21 guideline using 525mA drive at 25°C ambient.
- RoHS Compliant.

Electrical
- 120-277 volt and 347-480 volt available.
- Minimum drivers power factor: >0.9.
- Electrical surge protection in accordance with IEEE/ANSI C62.41.2 guidelines.
- UL or ETL listed in U.S. and Canada.

Mechanical
- Cast aluminum heat sink, arms, lens cover, housing top cover and housing/fitter.
- Spun aluminum heat sink cover.
- Fitter installs on standard 3 in tenon.
- Tool-less driver access and removeable driver tray.
- AAD™ "Advanced Air-flow Dynamics" maximizes heat sink expulsion.

Controls
- Supplied with dimmable driver.
- Optional Roto-lock photocell receptacle only R.
- Optional Roto-lock receptacle with photo cell R1.
- Optional electronic button photocell: PEC (120-277V).

Finish
- Durable, color retentive powder coat finish.

Warranty & Standards
LED Systems and Drivers - 7 years. All fixtures shall be free from all defects in materials and workmanship for a period of 7 years from the date of manufacture. The luminaire manufacturer shall warrant the LED boards/system, during the stated warranty period, against failure defined as more than 10 percent of non-operating LEDs.

Motion Sensors:
MOT1[2]: 360° lens, maximum coverage 40' diameter from 20' height
MOT2[2]: 360° lens, maximum coverage 70' diameter from 20' height

[2] Note: Requires acrylic flat lens (CA, SV1 or SV2)

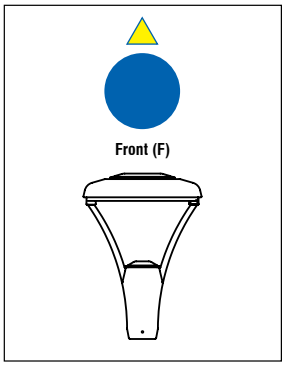
Drivers:
MDL03: 350mA, 120-277V
MDL05: 525mA, 120-277V
MDH03: 350mA, 347-480V
MDH05: 525mA, 347-480V

Lens:
CA - Clear Flat Acrylic
FG - Clear Flat Glass

Soft Vue:
SV1* - Flat Medium Diffuse Acrylic Lens
SV2** - Flat Heavy Diffuse Acrylic Lens
*Provides moderate reduction in Brightness while only a minimal reduction in lumen output. **Provides maximum reduction in Brightness while only a nominal reduction in lumen output. Consult photometric files for exact lumen performance as percentages noted are averages.

Colors:
UBKT - Urban Black Textured
UBT - Urban Bronze Textured
ULBT - Urban Light Bronze Textured
USLT - Urban Silver Textured
UWHT - Urban White Textured
UCHS - Urban Champagne Satin Smooth
UBK - Urban Black Matte
UB - Urban Bronze Matte
ULB - Urban Light Bronze Matte
USL - Urban Silver Matte
UWH - Urban White Matte

Distribution Orientation:



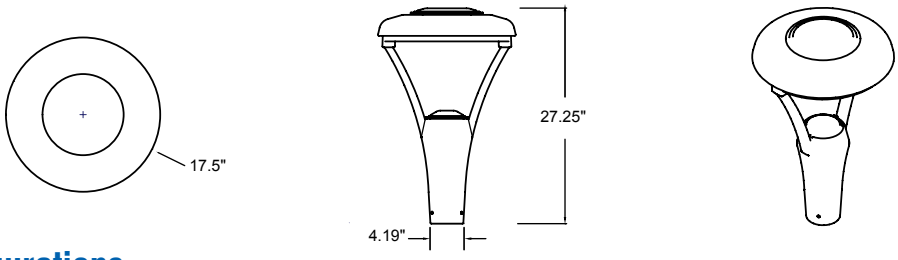
Performance (Based on FG Lens)

MODEL #	T2 DELIVERED LUMENS	EFFICACY (LPW)	T3 DELIVERED LUMENS	EFFICACY (LPW)	T3R DELIVERED LUMENS	EFFICACY (LPW)	T4 DELIVERED LUMENS	EFFICACY (LPW)	T5 DELIVERED LUMENS	EFFICACY (LPW)	WATTAGE
42L27T_-MD_03	3325	66.0	3155	63.0	3200	64.0	3110	62.0	3240	64.0	50
42L35T_-MD_03	3790	75.0	3600	72.0	3650	73.0	3545	70.0	3685	73.0	50
42L45T_-MD_03	4040	80.0	3835	76.0	3890	77.0	3780	75.0	3940	78.0	50
56L27T_-MD_03	4075	60.0	3965	59.0	3965	59.0	4105	61.0	4295	64.0	67
56L35T_-MD_03	4645	69.0	4525	67.0	4520	67.0	4680	69.0	4895	73.0	67
56L45T_-MD_03	4950	73.0	4820	71.0	4815	71.0	4990	74.0	5220	77.0	67
84L27T_-MD_03	6035	59.0	5985	59.0	6040	59.0	6175	61.0	5865	58.0	101
84L35T_-MD_03	6885	68.0	6825	67.0	6885	68.0	7045	69.0	6685	66.0	101
84L45T_-MD_03	7335	72.0	7270	71.0	7335	72.0	7505	74.0	7125	70.0	101
84L27T_-MD_05	8290	55.0	8190	54.0	8010	53.0	8055	54.0	7970	53.0	149
84L35T_-MD_05	9450	63.0	9335	62.0	9135	61.0	9185	61.0	9090	61.0	149
84L45T_-MD_05	10070	67.0	9950	66.0	9735	65.0	9790	65.0	9690	65.0	149

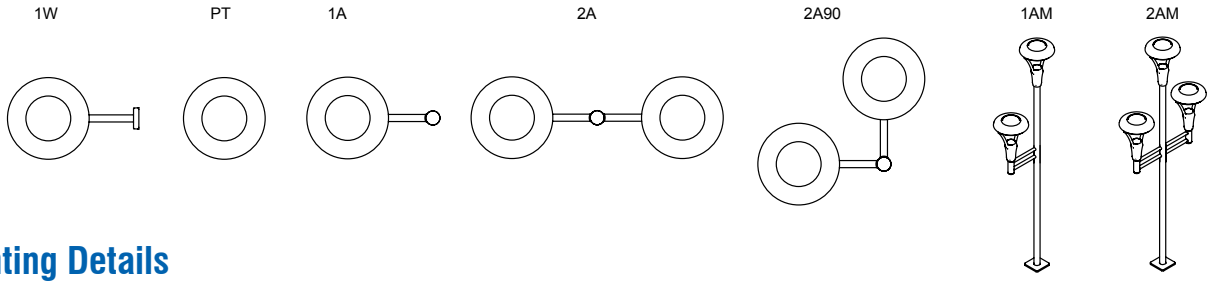
800-621-3376 | 555 Lawrence Ave., Roselle, IL 60172 | info@sternberglighting.com | www.sternberglighting.com

Product Dimensions and Features

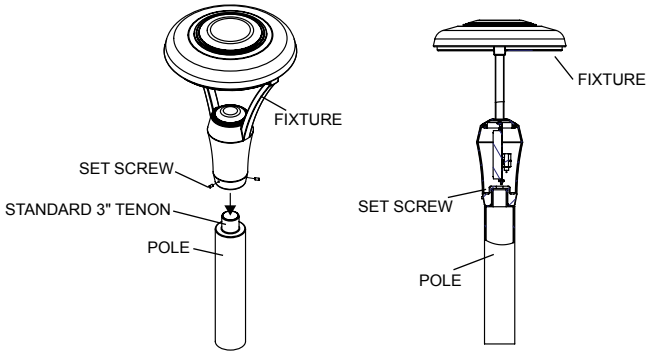
EPA: 0.9 SQUARE FT
WEIGHT: 29 LBS



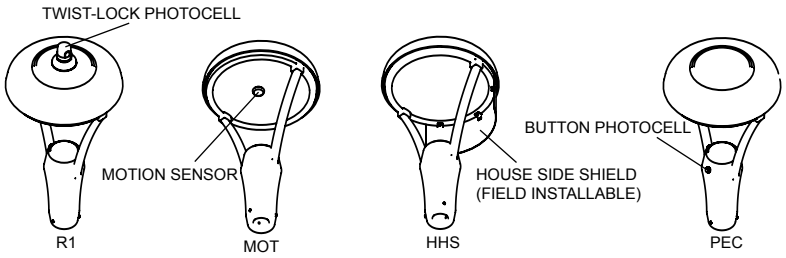
Mounting Configurations



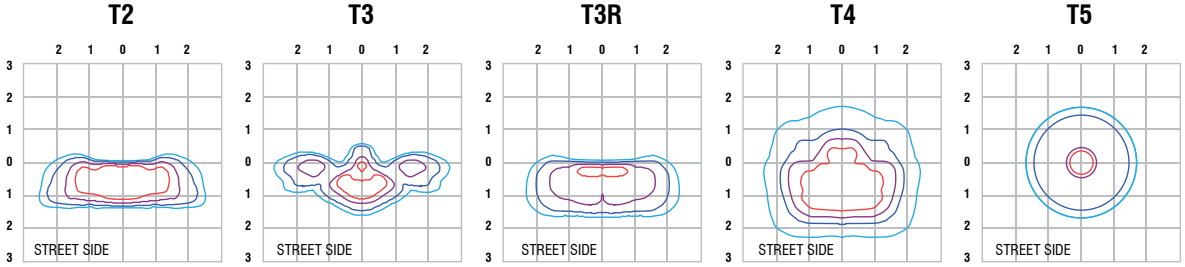
Mounting Details



Other Options



ISO Footcandle Plots



All published luminaire photometric testing performed to IESNA LM-79 standards by NVLAP, certified laboratory. ISO footcandle plots above demonstrate the SOLANA'S light patterns only. Not for total fixture output. For complete specifications and IES files, see website.

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED

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555 Lawrence Ave., Roselle, IL 60172
info@sternberglighting.com
www.sternberglighting.com

210 SERIES

MLPT210-S-PC

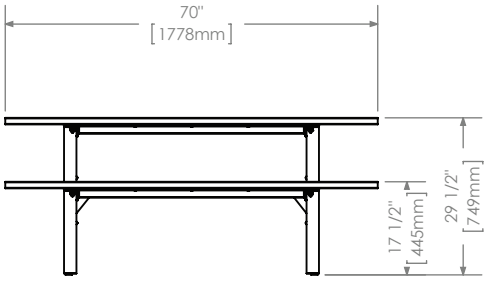
MATERIALS: Table frame is made from 3" x 2-3/8" structural I-Beam with mitered corners.
Horizontal support beams are used for super stability and structural integrity. Surface material is high density paper composite.

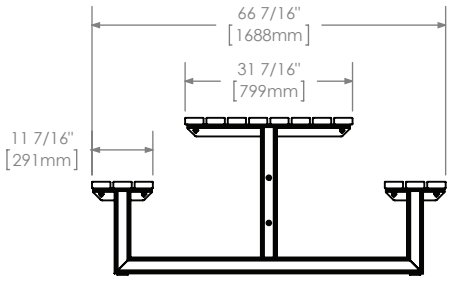
FINISH: All steel components are protected with E-Coat rust proofing. The Maglin Powdercoat System provides a durable finish on all metal surfaces.

INSTALLATION: The MLPT210 Series Cluster Seating surface mount tables are delivered pre-assembled.

TO SPECIFY: Select MLPT210-S-PC
Choose:
- Ipe
  - Surface Mount (MLPT210-S-PC)
  - Direct Burial (MLPT210-DB-PC)
- Powdercoat Color

OPTIONS:
- Gaming board (GB)
- Wheelchair accessibility (WCA)





DIMENSIONS:

Table Height:	29.5” (74.9 cm)
Seat Height:	17.5” (44.5 cm)
Length:	70” (177.8 cm)
Weight:	420.73 lbs (190.8 kg)

MAGLIN

T 800-716-5506
F 877-260-9393
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SALES@MAGLIN.COM

ROSETTA®

FIRE PIT KITS

ROUND FIRE PIT KIT

SQUARE FIRE PIT KIT

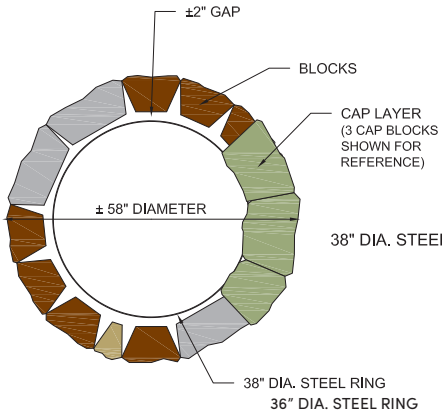
ROSETTA

FIRE PIT KITS

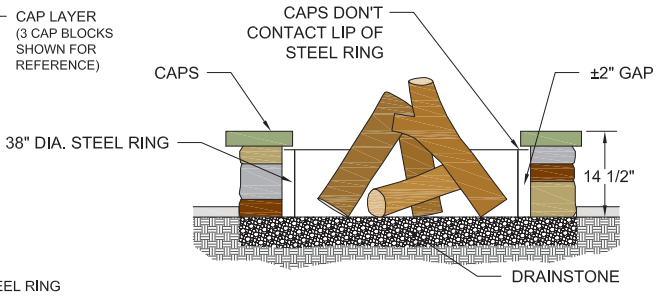
ROUND FIRE PIT
Matches Belvedere Texture

Round Fire Pit Pallet: 1,275 lbs

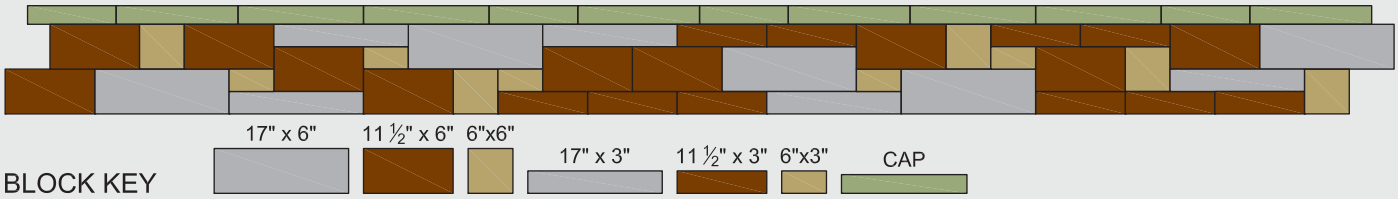
TOP VIEW



CROSS-SECTION



BLOCK LAYOUT PATTERN FOR ROUND FIRE PIT



INSTRUCTIONS: For Both Round & Square Fire Pit Kits

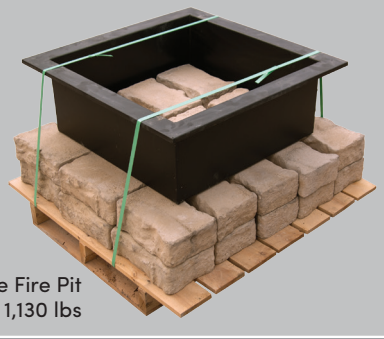
1. Familiarize yourself with the construction details shown on this page.
2. Mark out the location for your fire pit. Note dimensions shown are nominal so mark an area slightly larger than shown.
3. Excavate for drain stone base (approx. 6")
4. Fill excavated area with drain stone, level, and compact.
5. Place and center steel ring on prepared base.
6. Place blocks per the pattern. (For Round Kit, keep Blocks 1 1/2" off steel ring)
7. WARNING: Do not place Rosetta Fire Pits directly on Rosetta Flagstone products or any comparable concrete product as high heat can adversely affect the integrity of the product.

FOLLOWING STEPS FOR ROUND FIRE PIT ONLY

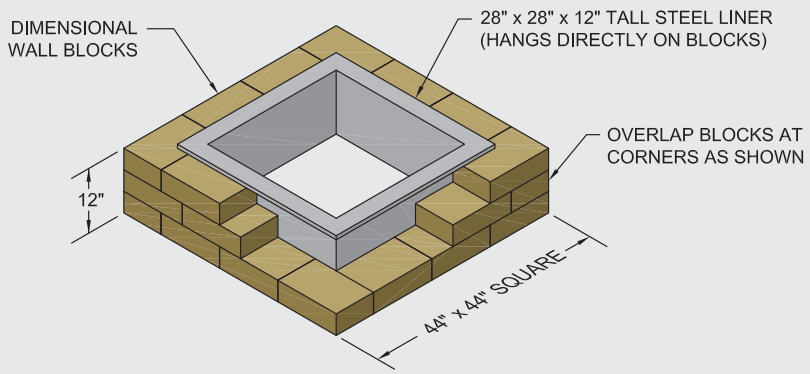
8. After placing blocks around the ring, adjust the blocks in or out to make the circle close and fit tight. If the blocks do not close the circle, move all blocks slightly in. If the blocks seem too long, move the blocks slightly out.
9. Place caps in circle around fire pit. Adjust the caps in or out to make them fit tightly together.
10. Note: Not suitable for large fires. Fire size should not allow flame to contact Caps on Round Fire Pit.

*Gas Conversion Kits Available

SQUARE FIRE PIT
Matches Dimensional Wall Texture



Square Fire Pit
Pallet: 1,130 lbs



Florence Centralized Mailboxes are Built to Last

vital™ Cluster Box Units are meticulously crafted to meet or exceed all USPS security requirements, delivering uncompromising durability.

Sloped top for moisture runoff

Standard silver adhesive identification decals contain up to five characters (engraving optional)

Fully Integrated parcel locker(s) with key trapping lock

Interlocking, overlapping seams and tight clearances to prevent prying

Integrated Outgoing Mail Slot with weather protection hood

Convenient solid aluminum integrated outgoing mail collection compartment prepped for USPS Arrow Lock

Easy release handle to open master gate

Heavy-duty tenant cam lock with three keys

Rugged, weather-resistant powder coat finish in six architectural colors

Matching Aluminum Pedestal (included)

Stainless steel hold open door catch on each side of master gate

Aluminum comb prevents mail fishing in outgoing mail collection compartment

Heavy duty cam latches through frame for added security

January 10, 2017

Mark Bush
NYSDOT Cortland Office
3668 NY-281
Cortland, NY 13045

RE: **Evergreen Townhouses – Driveway Design**
1061 Dryden Road, Ithaca, NY

Dear Mark,

Thank you for taking my call today. As discussed, I wanted to give you more information regarding our project listed above. I am attaching the site survey for your reference in locating the property, as well as a preliminary site plan.

The proposed development consists of 36 units of attached 2-story, for-rent townhouses constructed on the 6.537-acre tax parcel 55-1-16, located at 1061 Dryden Road/NYS Route 366 in the Town of Dryden. The subject parcel is currently zoned Rural Residential District. The project proposes that the parcel be rezoned as a Planned Unit Development District (PUD). Please refer to the existing Boundary & Topographic Map, with right-of-way and property line along Route 366 outlined in red, and existing driveways highlighted in yellow.

The proposed design includes improvements to the entrance driveway, which currently consists of a single shared driveway that lies wholly on the adjacent property at 1065 Dryden Road. 1067 Dryden Road also utilizes this shared driveway; both 1061 Dryden Road and 1067 Dryden Road have agreements allowing use of the driveway.

Figure 1: Google Street View of shared driveway, looking southwest.

Trowbridge Wolf Michaels Landscape Architects LLP
1001 West Seneca Street, Suite 201 Ithaca, New York 14850 ph: 607.277.1400
www.twm.la

The proposed improvements seek to create a driveway on the 1061 Dryden Road property, and to improve the neighboring driveway at 1065 Dryden Road. The two driveways have been laid out using the NYSDOT Policy and Standards for the Design of Entrances to State Highways, dated January 15, 2015, Figure 5A-4 Residential Driveway – Typical Plan, Profiles and Radius Layout. Please refer to the attached drawing L1.1 Driveway Layout for dimensions.

There does not appear to be a drainage swale or closed drainage system on Route 366. There appears to be concrete gutter further west on Route 366. Please refer to the attached site survey and photos below for reference.

Figure 2: Existing driveway looking northeast.

Figure 3: Google Street View of south side of Route 366, portions of existing concrete gutter in foreground.

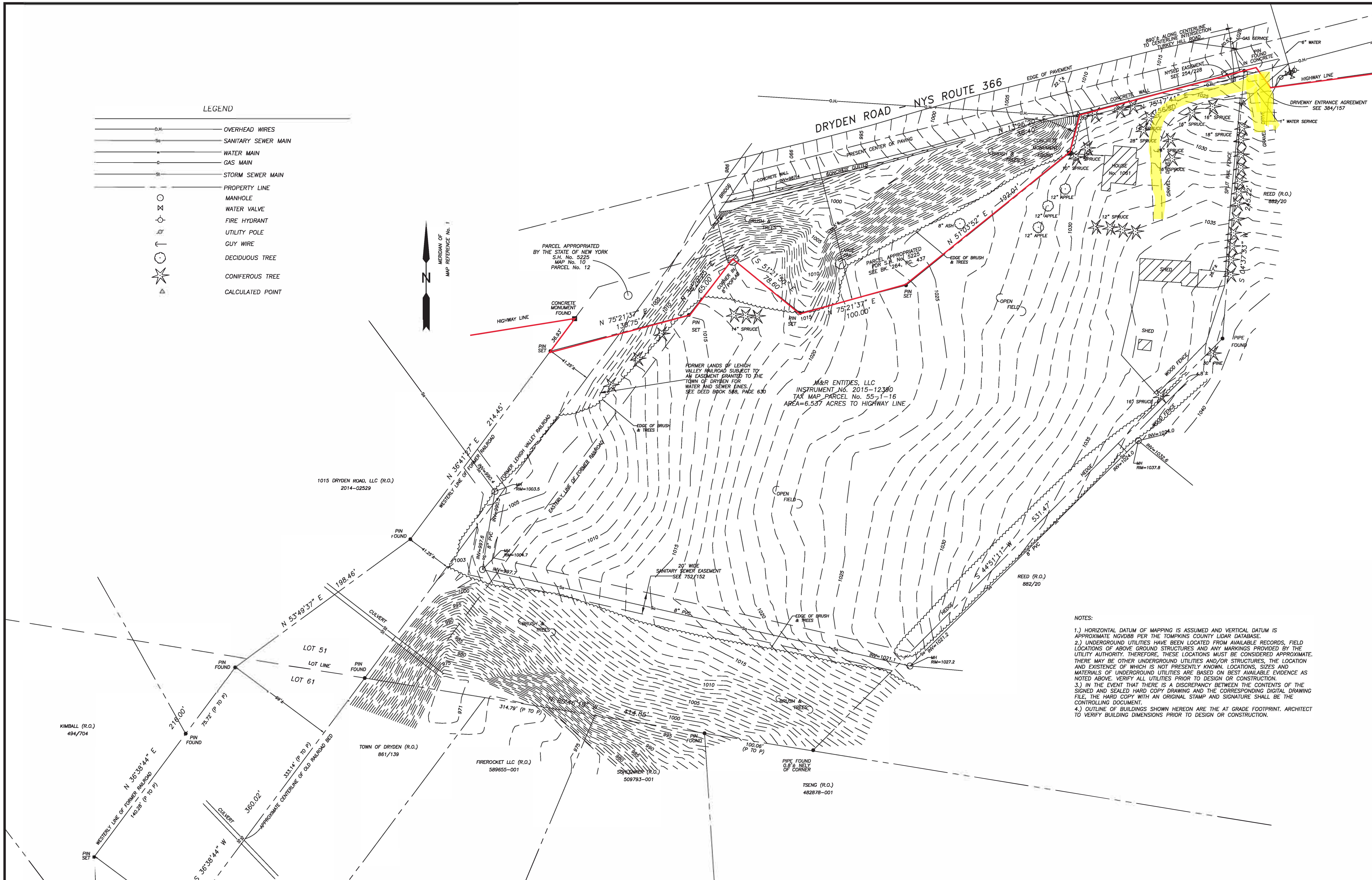
We would appreciate review and comment on the attached driveway layout for inclusion in both our submission for Site Plan Review in the Town of Dryden on January 20, 2017, as well as for incorporation into our final construction documents and permitting with NYSDOT.

Please feel free to contact me by phone at 607-277-1400, or by email at mdc@twm.la. I appreciate your attention to this matter.

Sincerely,

Margot D. Chiuten, RLA
Project Manager

Cc: N. Brown, G. Sloan, Town of Dryden, file



NOTES:

1.) HORIZONTAL DATUM OF MAPPING IS ASSUMED AND VERTICAL DATUM IS APPROXIMATE NGVD88 PER THE TOMPKINS COUNTY LIDAR DATABASE.
2.) UNDERGROUND UTILITIES HAVE BEEN LOCATED FROM AVAILABLE RECORDS, FIELD LOCATIONS OF ABOVE GROUND STRUCTURES AND ANY MARKINGS PROVIDED BY THE UTILITY AUTHORITY. THEREFORE, THESE LOCATIONS MUST BE CONSIDERED APPROXIMATE. THERE MAY BE OTHER UNDERGROUND UTILITIES AND/OR STRUCTURES, THE LOCATION AND EXISTENCE OF WHICH IS NOT PRESENTLY KNOWN. LOCATIONS, SIZES AND MATERIALS OF UNDERGROUND UTILITIES ARE BASED ON BEST AVAILABLE EVIDENCE AS NOTED ABOVE. VERIFY ALL UTILITIES PRIOR TO DESIGN OR CONSTRUCTION.
3.) IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THE CONTENTS OF THE SIGNED AND SEALED HARD COPY DRAWING AND THE CORRESPONDING DIGITAL DRAWING FILE, THE HARD COPY WITH AN ORIGINAL STAMP AND SIGNATURE SHALL BE THE CONTROLLING DOCUMENT.
4.) OUTLINE OF BUILDINGS SHOWN HEREON ARE THE AT GRADE FOOTPRINT. ARCHITECT TO VERIFY BUILDING DIMENSIONS PRIOR TO DESIGN OR CONSTRUCTION.

REFERENCE MAPS:

1.) SURVEY MAP LANDS OF WAYNE & HEIDI WOODWARD..." DATED 11/8/2013 BY MICHAEL J. REAGAN.
2.) LEHIGH VALLEY RAILROAD RIGHT OF WAY AND TRACK MAP DATED JUNE 20, 1917.
3.) "SURVEY MAP OF 68 MOUNT PLEASANT ROAD..." LAST REVISED 9/10/1996 BY KENNETH A. BAKER
4.) "FINAL PLAT PLEASANT MOUNT SUBDIVISION..." DATED 8/26/1997 BY MICHAEL J. REAGAN.
5.) "MAP OF CHARLES & MARY MILLER PROPERTY..." DATED 5/6/1944 BY CARL CRANDALL.
6.) "SURVEY MAP No. 1061 DRYDEN ROAD..." DATED SEPTEMBER 8, 2015 BY T.G. MILLER P.C.

T. G. MILLER P.C.
ENGINEERS AND SURVEYORS
203 NORTH AURORA STREET
ITHACA, NEW YORK 14851
PHONE (607) 272-6477

BOUNDARY & TOPOGRAPHIC MAP
No. 1061 DRYDEN ROAD
TOWN OF DRYDEN, TOMPKINS COUNTY, NEW YORK

BY	REVISION	DATE

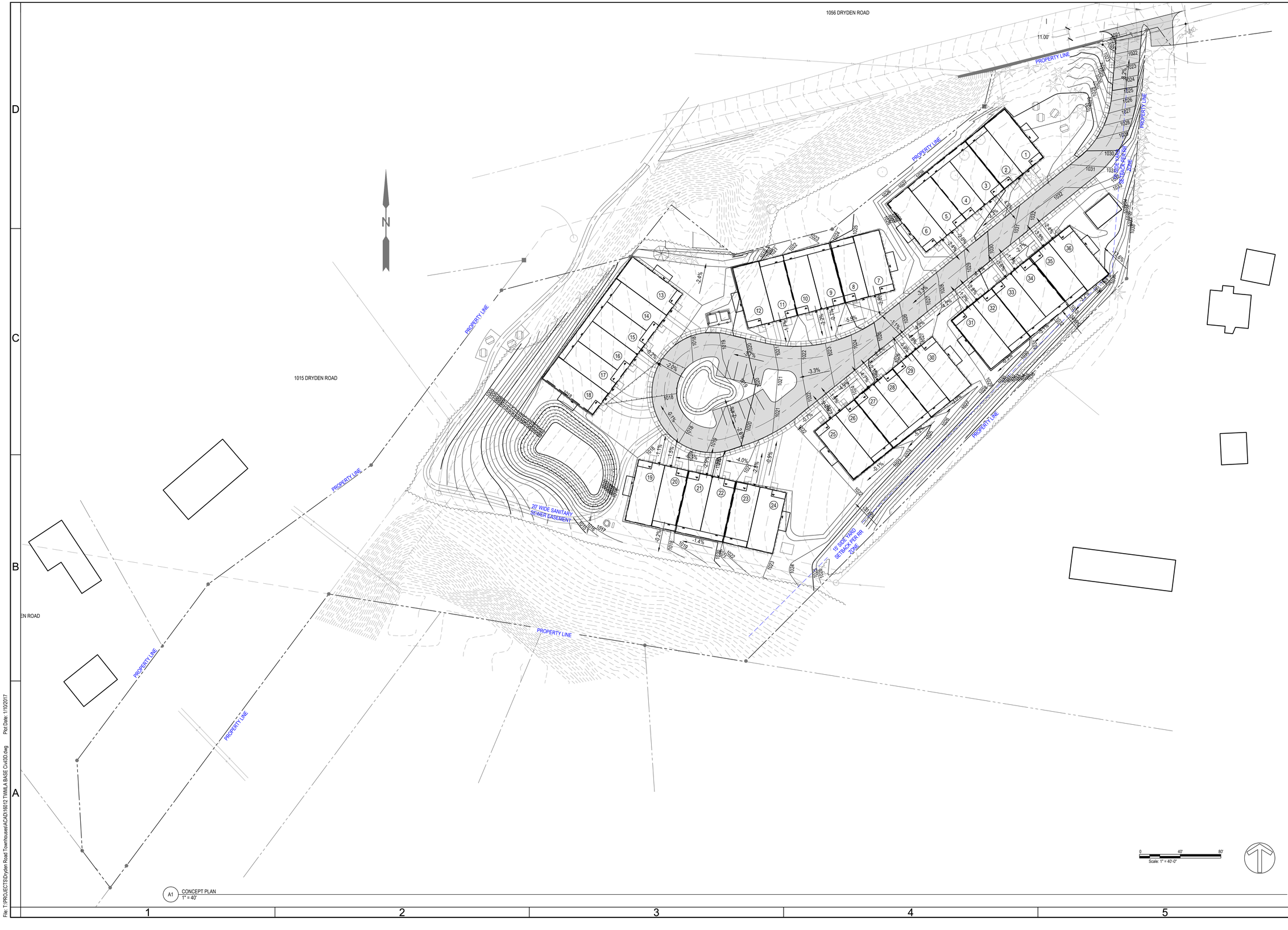
Warning

ALTERATIONS TO THIS MAP NOT CONFORMING TO SECTION 7209, SUBDIVISION 2, NEW YORK STATE EDUCATION LAW, ARE PROHIBITED BY LAW. ALL CERTIFICATIONS HEREON ARE VALID FOR THIS MAP AND COPIES THEREOF ONLY IF SAID MAP OR COPIES BEAR THE IMPRESSION SEAL OF THE LICENSED LAND SURVEYOR WHOSE SIGNATURE APPEARS HEREON.

DARRIN A. BROCK, L.S.
N.Y.S. LICENSE No. 050597

SIGNATURE
LICENSED LAND SURVEYOR

DATE: 10/21/2015	JOB No. S15811
SCALE: 1"=40'	
DRAWN BY: DAB	SHEET 1 OF 1
CHECKED: DLD	



A1 CONCEPT PLAN
1" = 40'

0 40' 80'
Scale: 1" = 40'-0"

HOLT ARCHITECTS
Architecture
Planning
Interior Design
619 West State Street
Ithaca NY 14850
p 607.273.7600 f 607.273.0475

TROWBRIDGE WOLF MICHAELS
TWLA
LANDSCAPE ARCHITECTS
1001 W. Seneca St., Ste. 101 Ithaca, NY 14850
607-277-1400 Fax 607-277-6092

1061 Dryden Road
EVERGREEN TOWNHOUSES
Town of Dryden, New York

DATE:	1/10/2017
PROJECT:	2016012
DRAWN BY:	MDC
CHECKED:	KAM

CONCEPT PLAN

L001

Plot Date: 1/10/2017
File: T:\PROJECTS\Dryden Road Townhouses\ACAD\160112 TWMLA BASE Civil3D.dwg

NYS ROUTE 366 DRYDEN ROAD

EXISTING CENTERLINE OF 2-LANE HIGHWAY

EXISTING EDGE OF PAVEMENT

±25.00' EXISTING WALL TO BE REMOVED

11.00'

13.00'

R13.00'

11.00' OFFSET

13.00' OFFSET

PIN FOUND IN CONCRETE

EXISTING CONCRETE RETAINING/ABUTMENT WALL

R13.00'

13.00'

156. PROPERTY LINE

13.00'

24.00'

PROPERTY LINE

22.00'

13.00' OFFSET

HIGHWAY BOUNDARY

CONCRETE SIDEWALK

ASPHALT DRIVE TO 1061 DRYDEN ROAD

1015

1020

1025

0.5'±

O.H.

0 10' 20'

Scale: 1" = 10'-0"

FOR REVIEW ONLY

T:\PROJECTS\DRYDEN ROAD TOWNHOUSES\ACAD\16012 TWMLA BASE CIVIL3D.DWG LAST SAVED BY: MARGOT

TWLA

1061 Dryden Road

Evergreen Townhouses

Town of Dryden, New York

Driveway Layout
January 10, 2017
1" = 10'
2016012

L1.1

TROWBRIDGE WOLF MICHAELS LANDSCAPE ARCHITECTS LLP 1001 W. SENECA ST SUITE 201 ITHACA, NY 14850 607.277.1400 P

From: Margot Chiuten
To: Mark.B.Bush@dot.ny.gov
Cc: nb@holt.com; Kimberly Michaels
Subject: RE: 1061 Dryden Road
Date: Wednesday, January 18, 2017 5:14:41 PM
Attachments: 16012 Evergreen Townhouses L1.1.pdf
16012 Evergreen Townhouses L1.2.pdf

Hi Mark,

Attached is a revised plan showing the modification to the existing retaining wall and new wall extension. Also included is a preliminary detail for a new CIP retaining wall.

Would you be able to forward a summary of your review comments for inclusion in our submission to the Town of Dryden? By end of day tomorrow would be great, if at all possible.

Please let me know if you have any questions.

Thanks,
Margot Chiuten

MARGOT D. CHIUTEN RLA ASLA
Senior Landscape Architect

Trowbridge Wolf Michaels
Landscape Architects LLP
1001 West Seneca Street Suite 201
Ithaca, New York 14850
607.277.1400
607.216.8483 mobile
www.twm.la

From: Margot Chiuten [mailto:mdc@twm.la]
Sent: Friday, January 13, 2017 5:19 PM
To: Mark.B.Bush@dot.ny.gov
Cc: nb@holt.com; Kimberly Michaels <kam@twm.la>
Subject: RE: 1061 Dryden Road

Hi Mark,

I'm still working on the wall and will forward more information upon completion.

To address your other question, sight distance has been evaluated, please refer to attached letter from SRF Associates.

I appreciate your review—thanks,
Margot

From: Bush, Mark.B B (DOT) [mailto:Mark.B.Bush@dot.ny.gov]
Sent: Thursday, January 12, 2017 2:19 PM
To: ls@twm.la
Subject: RE: 1061 Dryden Road

After a cursory review, it appears you are proposing modification of an existing retaining wall system at or near the proposed driveway location. Has sight distance for egress adjacent to the retaining wall been evaluated?
Please send copies of the retaining wall modification details, as referenced on drawing L1.1, driveway apron details.

Mark B. Bush, Asst. Resident Engineer
Cortland/Tompkins Residency 3-2
3668 NYS Route 281
Cortland, NY 13045
(607) 756-7072

From: Laurie Shaver [mailto:ls@twm.la]
Sent: Thursday, January 12, 2017 12:14 PM
To: Bush, Mark.B B (DOT)
Subject: FW: 1061 Dryden Road

Per request of Margot Chiuten

---------- Forwarded message ---------
From: Margot Chiuten <mdc@twm.la>
Date: Tue, Jan 10, 2017 at 5:30 PM
Subject: 1061 Dryden Road
To: <mbush@dot.ny.gov>
Cc: <nb@holt.com>, Kimberly Michaels <kam@twm.la>

Mark,

Thank you for taking the time to speak to me today. As discussed, I'm including some preliminary project information for the Evergreen Townhouses project, located at 1061 Dryden Road/NYS Route 366.

I'm hoping you will be able to take a moment to review, and let me know any initial thoughts or comments. As I mention in the attached letter, we are submitting to the Town of Dryden for Site Plan Review on January 20, 2017; if at all possible, I would appreciate your comments by Monday, January 16th so we can incorporate any changes to the plans for our submission.

Feel free to contact me with any questions,
Margot

MARGOT D. CHIUTEN RLA ASLA
Senior Landscape Architect

Trowbridge Wolf Michaels
Landscape Architects LLP
1001 West Seneca Street Suite 201
Ithaca, New York 14850
607.277.1400
607.216.8483 mobile
www.twm.la

NYS ROUTE 366 DRYDEN ROAD

EXISTING EDGE OF PAVEMENT

EXISTING CENTERLINE OF 2-LANE HIGHWAY

EXISTING EDGE OF PAVEMENT

± 32.50' EXISTING WALL TO BE REMOVED

13.00'

24.00'

20.5'

24.00'

13.00' OFFSET

11.00' OFFSET

13.00' OFFSET

R13.00'

R13.00'

PIN FOUND IN CONCRETE

TW ±1023.50
BW ±1016.50
TOTAL HEIGHT: ±7'

PROPOSED CONCRETE RETAINING WALL

EXISTING CONCRETE RETAINING/ABUTMENT WALL

PROPERTY LINE

±15.42'

6.00'

-11.1%

TW ±1023.50
BW ±1021.00
TOTAL HEIGHT: ±2.50'

TW ±1023.50
BW ±1022.00
TOTAL HEIGHT: ±1.50'

CONCRETE SIDEWALK

ASPHALT DRIVE TO 1061 DRYDEN ROAD

16" SPRUCE

ASPHALT APRON TO 1065/1067 DRYDEN ROAD

HIGHWAY BOUNDARY

PROPERTY LINE

1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028

O.H. W

0 10' 20'
Scale: 1" = 10'-0"

FOR REVIEW ONLY

T:\PROJECTS\DRYDEN ROAD TOWNHOUSES\ACAD\16012 TWMLA GRADING.DWG LAST SAVED BY: MARGOT

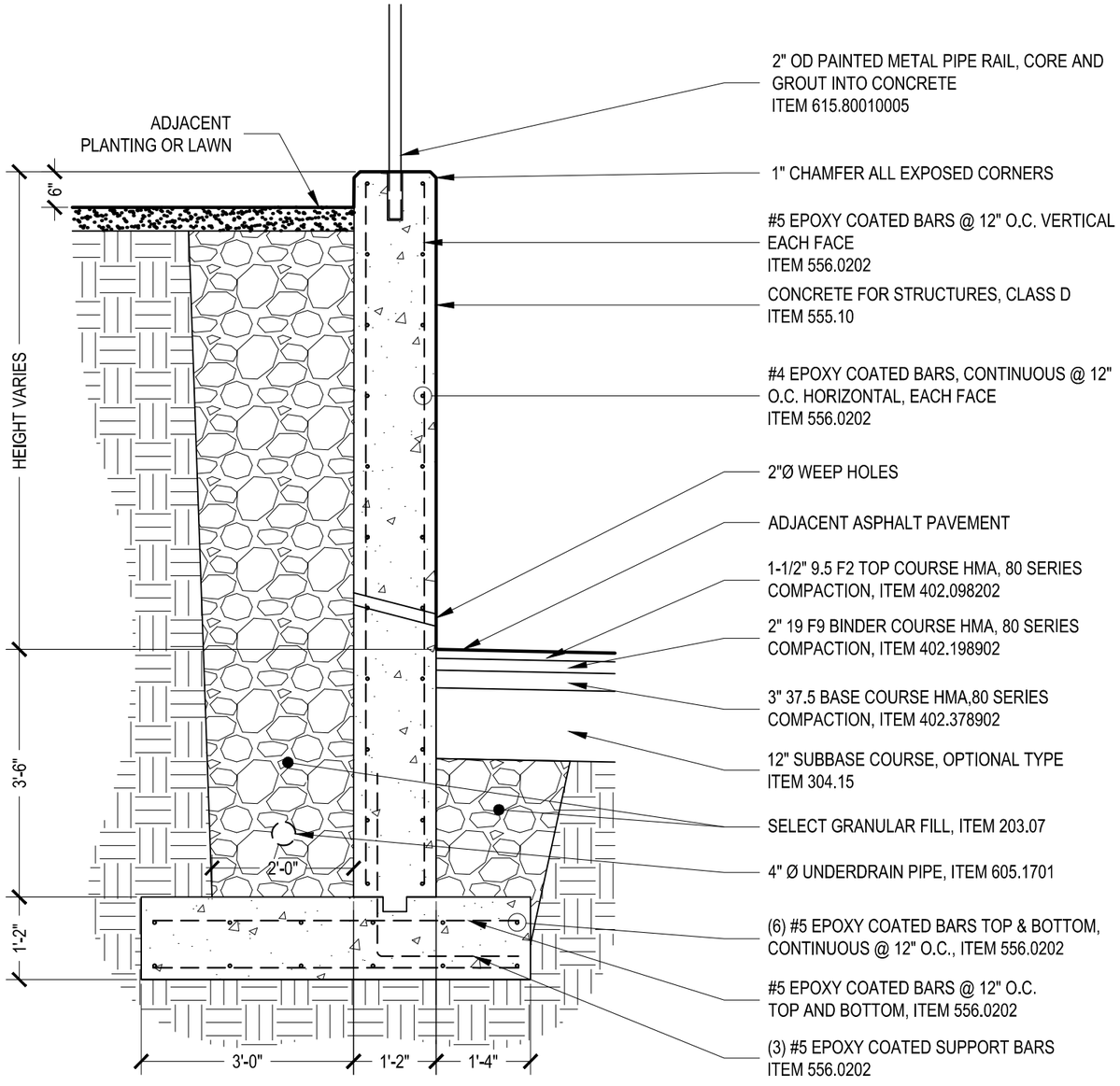
TWLA

1061 Dryden Road
Evergreen Townhouses
Town of Dryden, New York

Driveway Layout
January 18, 2017
1" = 10'
2016012

L1.1

TROWBRIDGE WOLF MICHAELS LANDSCAPE ARCHITECTS LLP 1001 W. SENECA ST SUITE 201 ITHACA, NY 14850 607.277.1400 P



1 CONCRETE RETAINING WALL
Scale: 3/4"=1'-0"

FOR REVIEW ONLY

T:\PROJECTS\DRYDEN ROAD TOWNHOUSES\ACAD\16012 TWMLA DETAILS.DWG LAST SAVED BY: MARGOT

TWLA

1061 Dryden Road
Evergreen Townhouses
Town of Dryden, New York

Retaining Wall
January 18, 2017
1" = 10'
2016012

L1.2

DRAFT PRELIMINARY STORMWATER POLLUTION PREVENTION PLAN

EVERGREEN TOWN HOMES
1061 DRYDEN ROAD
TOWN OF DRYDEN

TOWN OF DRYDEN
TOMPKINS COUNTY
NEW YORK

January 2017

SHUMAKER CONSULTING ENGINEERING & LAND SURVEYING, D.P.C.
143 Court Street
Binghamton, NY 13901

EVERGREEN TOWN HOMES
TOWN OF DRYDEN

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APPENDIX A: ***PROJECT LOCATION MAP*** **- Information to be included at a later date**

APPENDIX B: ***EXISTING AND PROPOSED DRAINAGE AREA MAPS***

APPENDIX C: ***WATER QUALITY, RUNOFF REDUCTION AND WATER QUANTITY CALCULATIONS***

APPENDIX D: ***SOILS MAP***

APPENDIX E: ***CONTRACT DRAWINGS*** **- Information will be included at a later date**

APPENDIX F: ***PROJECT TECHNICAL SPECIFICATIONS*** **- Information will be included at a later date**

APPENDIX G: ***INSPECTION AND MAINTENANCE FORMS***

APPENDIX H: ***CONTRACTORS CERTIFICATION STATEMENT***

APPENDIX I: ***SPDES GENERAL PERMIT GP-0-15-002***

APPENDIX J: ***RECOMMENDED CONSTRUCTION SEQUENCE SCHEDULE*** **- Information will be included at a later date**

APPENDIX K: ***AMENDMENTS AND MODIFICATIONS TO SWPPP***

APPENDIX L: ***NOTICE OF INTENT*** **- Information will be included at a later date**

APPENDIX M: ***HISTORIC RESOURCES SCREENING***

A. NARRATIVE REPORT

1. PROJECT LOCATION/DESCRIPTION

Shumaker Consulting Engineering and Land Surveying, D.P.C. (SCE) has prepared this Preliminary Stormwater Pollution Prevention Plan (SWPPP) on behalf of M&R Entities (developer) to support earthmoving activities related to the construction of a new townhome complex, access roads, parking facilities, and grading of the overall site.

The project involves the site construction of a 36 unit townhome complex, associated utilities, access drives, parking facilities, sidewalks, drainage system and stormwater management practices.

As stated in Appendix B, Table 2 of the GP-0-15-002 for stormwater discharges from construction activities, any construction activities that involve soil disturbances of one (1) acre or more of land require the preparation of a SWPPP that includes post-construction stormwater management practices. Therefore, the development of this SWPPP has been prepared in accordance with the guidelines in the New York State Department of Conservation (NYSDEC) Stormwater Management Design Manual (SMDM), NYSDEC SPDES GP-0-15-002 for stormwater discharges from construction activities Scope of Work.

1. New buildings
2. New access road
3. New pedestrian walkways
4. New paved parking lots
5. New drainage system
6. New sanitary sewer and water lines

Project Location (Latitude and Longitude)

The project is located in the Town of Dryden in Tompkins County, New York, at 1061 Dryden Road (see Appendix A, Figure 1 – Project Location Map).

Lat: 42.489° N
Long: 76.3.32° W

2. STORMWATER MANAGEMENT OBJECTIVES

The objectives of this stormwater management plan are to control/minimize erosion and prevent pollution from occurring as a result of the above mentioned construction activities.

The plan focuses on minimizing the potential for sediment to travel into on-site ditches and make its way to Fall Creek and other surrounding water bodies, both during and after construction.

3. PRE-DEVELOPMENT CONDITIONS

a. Drainage/Runoff

The proposed project is located in the Cayuga Lake Drainage Basin. The runoff from the project will drain to a tributary to a tributary to Fall Creek, then to Fall Creek, and eventually to Cayuga Lake.

There is one existing drainage area that is based on the project's disturbed area and existing drainage patterns. Drainage Area 1 drains toward an unnamed tributary to Fall Creek.

Drainage Area 1 is comprised of woods and meadow and generally drains from south to north. This area drains to the property to the east and eventually makes its way to an unnamed tributary to Fall Creek.

Table 1: Existing Drainage Areas

DRAINAGE AREA	DRAINAGE AREA SIZE (acres)	IMPERVIOUS AREA (ACRES)	PERVIOUS AREA (ACRES)	DRAINAGE PATHS OR CONVEYANCE SYSTEMS	COVER TYPE(S)	RECEIVING WATERBODY ON-SITE (NAME, TYPE)	DEC STANDARD	STREAM ORDER
1	6.239	0.085	6.154	Sheet and shallow concentrated flow	Grass, Woods, Impervious	N/A	N/A	N/A

b. Waterbodies

There are no major water bodies located within the limits of the project.

c. Drainage Structures

In the existing condition of the site, runoff overland flows until it leaves the site.

d. Environmentally Sensitive Areas

No environmentally sensitive areas have been identified.

e. Utility Lines, Easements, Water Supplies & Sewer Systems

The following utilities are located within the project limits:

- Water – Town of Dryden
- Sanitary Sewer – Town of Dryden
- Natural Gas – NYSEG
- Electric Power (OH) – NYSEG

f. Soil Types

According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey, there are two different soil types within the overall project area. Refer to the Soils Map in Appendix D for locations.

Bath, Valois, and Lansing Soils (BtF: 35-60% slopes) are well drained soils on hills, mountains, end moraines, lateral moraines, valley sides, or drumlinoid ridges. Bath soils were formed in loamy till, derived mainly from gray and brown siltstone, sandstone, and shale. Valois soils were formed in loamy till derived mainly from sandstone, siltstone, and shale, and Lansing soils were formed in calcareous loamy lodgement till derived from limestone, sandstone, and shale. Infiltration rates are slow, and the rate of water transmission is also slow. The hydrologic soil group of Bath, Valois, and Lansing Soils is C.

Darien Gravelly Silt Loam (DgB: 2-8% slopes) are somewhat poorly drained soils on hills, till plains, or drumlinoid ridges formed in loamy till, derived predominantly from calcareous gray shale. Infiltration rates are slow to very slow, and the rate of water transmission is also slow to very slow. The hydrologic soil groups Darien Gravelly Silt Loam is C/D.

4. FUTURE SITE

a. Proposed Development & Scope of the SWPPP

Structural Stormwater Management Practices for Limiting Runoff and Diverting Flow

Based on the site features, the project results in an increase of impervious cover, the increase of runoff from the impervious areas will be addressed using two infiltration areas. The runoff will be directed to these practices using ditches, culverts and a closed drainage system. Preliminary infiltration tests in these areas showed infiltration rates of 1.0 in/hr to 2.8 in/hr. A HydroCAD model analysis was conducted and the results were used to determine the volume needed to be detained in the larger infiltration basin. The model was created with all the practices working in conjunction with one another to limit the runoff rates from the site. The HydroCAD results are included in Appendix C. The peak flow rates leaving the site post construction are less than those pre construction.

Temporary and Permanent Structural and Vegetative Soil and Erosion Control Measures

Temporary:

A stabilized construction entrance shall be used at the entrance and exit from the project site. The entrance will remain in place until the site has been permanently stabilized. The Contractor shall route all traffic into and out of the site over this entrance. An entrance shall be used at each contractor staging yard established off the site.

Silt fence will be used along all fill slopes and to protect wetlands when needed. The silt fence will remain in place until turf has been established on all exposed surfaces (80% coverage rule). Silt fence will also be placed around all stock piles.

Stock piles shall either be seeded and mulched or completely covered with tarps to prevent erosion of the stock piled material.

Stone check dams will be placed in the constructed ditches/swales.

Inlet protection will be placed around new inlets which could be subject to turbid runoff. Inlet protection may consist of the inlet grate being elevated above grade.

Temporary mulching will be used to stabilize areas where no work will be performed for a period of time of one (1) week or more. The Contractor shall seed the area with one (1) pound of pure live seed per 1000 square feet of annual ryegrass (*Lolium perenne*). The Contractor shall then spread mulch at the rate of 90 pounds per 1,000 square feet.

Rolled erosion control product will be used on all slopes steeper than 1 on 3, in swales where shown on the plans and where higher velocities could erode away normal mulching, unless stone protection is used.

Temporary plastic barrier fence will be used to protect all trees and wooded areas that are to remain.

The contractor shall construct a temporary concrete wash basin for cleaning out concrete trucks. No concrete from truck cleanouts (excess concrete and wash water) shall be placed directly on the ground or in the storm drainage system.

All water from dewatering operations shall pass through a settling tank or similar device before being discharged.

The temporary measures referenced above are the anticipated measures to be used on this project; the Engineer may order additional measures as necessary.

Permanent:

The Contractor shall seed and mulch all areas that have been final graded within one week of completion of work.

Stone check dams shall be used in the newly formed dry swale to assist in slowing the water flow and detaining the necessary water quality volume.

Stabilization

The Contractor shall seed all areas that have been graded, regardless of size within one (1) week of completion of work. In cases where work areas will not be final graded within one (1) week of disturbance, the site shall be temporarily mulched and seeded regardless of the presence of other sediment and erosion control structures in the vicinity of the disturbance. The exceptions to this are:

- Where seeding and mulching is not practical because of snow cover or frozen ground. In this case, seeding and mulching shall take place as soon as practical.

When temporary mulching is used to stabilize work areas and no other work is expected to be performed in that area for a period of time of more than one (1) week, the Contractor shall temporarily seed the area as specified in the New York State Standards and Specifications for Erosion and Sediment Control and this SWPPP.

Implementation Schedule for Erosion and Sediment Controls

The Contractor shall establish a rain gauge at the site before any earth disturbance activities take place. The rain gauge shall have a digital readout and have a remote monitor in the Owner's field office. The rain gauge shall be placed in an open and protected area.

All appropriate erosion and sediment control structures shall be determined and placed prior to the start of any construction operation.

All stabilized construction entrances shall be placed before any earth disturbance activities take place.

All silt fence as specified in the Erosion and Sediment Control Plan (Appendix E) shall be placed along the toe of slope and between the proposed disturbed areas and any water course, impoundment or wetland prior to earth excavating or disturbance activities. The silt fence shall be maintained in good operative condition until disturbed areas have been

permanently established with turf (80% coverage rule) or other erosion resistant materials as specified in the contract documents.

Settling tanks shall be in place before dewatering operations commence.

Temporary plastic barrier fence will be used to protect all trees and wooded areas prior to earthmoving activities.

Stockpiles shall be covered or seeded and mulched within 24 hours of creation; they shall remain covered until the pile is exhausted. They shall be encircled by silt fence within 24-hours of creation.

Concrete wash basins shall be constructed before concrete operations commence.

After finish grade is established in ditches, stone check dams shall be placed in the ditches according to plan.

Seeding and mulching shall be performed on the finish grade slopes within one (1) week of completion of work.

Inlet protection shall be established around existing structures before earth disturbance activities take place and around new structures as soon as the structure is connected to the next downstream structure.

Other erosion protection measures or structures may be required as conditions warrant or as ordered by the Engineer or Owner.

Specifications for Erosion and Sediment Control

Installation of all erosion and sediment control features shall be in conformance with the Construction Documents, the New York State Standards and Specifications for Erosion and Sediment Control (2016), the Project Specifications (Appendix F) and the Contract Drawings (Appendix E).

Maintenance – Temporary (During Construction)

- Silt fence and check dams that have sediment built up 1/2 the structure height will be cleaned and the sediment disposed of as unclassified excavation or as directed by the Engineer. If the silt fence material develops a bulge between stakes, the section of fence shall be replaced.

- Sediment will be removed from the swales (ditches) when it reaches 1/2 the height of the check dams.

Maintenance – Permanent

- A monitoring well will be established in each infiltration basin
- The basins will be protected from sediment once established

b. Disturbed Area

The overall disturbed area during construction is estimated to be approximately 4.5 acres. All disturbed areas will be re-graded and areas without impervious surface will be seeded upon completion of the proposed work.

c. Activity Duration

The project is anticipated to start in _____. The duration of the construction period is expected to be approximately _____.

d. Impervious Area

The total impervious surface area within the disturbed area pre-construction is approximately 0.09 acres; the impervious surface area within the disturbed area post construction will be approximately 2.2 acres. The change in impervious surface area is primarily due to the addition of the proposed buildings, parking areas and associated access roads (refer to disturbed area table in Appendix C for details in impervious area amount changes).

e. Utilities/Easements

Water – Town of Dryden
Sanitary Sewer- Town of Dryden
Electric- NYSEG
Natural gas- NYSEG

f. Environmentally Sensitive Areas

No environmentally sensitive areas have been identified.

g. Drainage Areas

There is one existing drainage area that is based on the project's disturbed area and existing drainage patterns. Drainage Area 1 drains toward an unnamed tributary to Fall Creek.

Drainage Area 1 is comprised of woods and meadow and impervious and generally drains from south to north. This area drains to the property to the east and eventually makes its way to an unnamed tributary to Fall Creek.

Drainage Area 1 is comprised of 4 sub-catchment areas. Sub-catchment area 1 drains to the pre-treatment basin, which eventually makes it way to the infiltration basin that discharges in the southwest corner of the site. Sub-catchment area 2 collects drainage from the access drive and directs it to the infiltration bioretention area. Sub-catchment area 3 collects roof runoff from the new building and directs it to the infiltration basin. Sub-catchment area 4 includes site runoff that was not able to be detained.

Table 2: Proposed Drainage Areas

SUB-CATCHMENT AREA	DRAINAGE AREA SIZE (acres)	IMPERVIOUS AREA (ACRES)	PERVIOUS AREA (ACRES)	DRAINAGE PATHS OR CONVEYANCE SYSTEMS	COVER TYPE(S)	RECEIVING WATERBODY ON-SITE (NAME, TYPE)	DEC STANDARD	STREAM ORDER
1	2.33	0.21	2.12	Sheet flow, Shallow Concentrated Flow, Ditches, Culverts	Grass, Pavement, Woods	N/A	N/A	N/A
2	0.67	0.39	0.28	Sheet flow, Shallow Concentrated Flow	Grass, Pavement	N/A	N/A	N/A
3	2.21	1.52	0.69	Sheet flow, Shallow Concentrated Flow, Closed Drainage System	Grass, Pavement, Woods	N/A	N/A	N/A
4	1.08	0.07	1.01	Sheet flow, Shallow Concentrated Flow	Grass, Pavement,	N/A	N/A	N/A

h. Pollution Prevention Measures

Litter will be controlled by picking up the garbage and miscellaneous debris at the end of each day. Pallets and other debris will be hauled away and disposed of properly each day by the Contractor. Banding that is used on piping; hay/straw bales, fencing, etc. will be collected and disposed of daily as well. All excess pieces of pipe (new or old) will be collected and removed daily.

The Contractor shall be required to keep a dumpster on the site for daily placement of all litter and debris that is to be disposed of at the landfill. The intent of the daily cleanup is to prevent debris from getting into stormwater and polluting the nearby waterbodies.

Wood from concrete forms shall be removed from the site and disposed of in an appropriate manner by the Contractor.

Silt fence that is removed, shall be disposed of in an appropriate manner by the Contractor.

The Contractor shall be responsible and take appropriate measures to prevent contamination of any waterbody by silt, sediment, fuels, solvents, lubricants, epoxy coatings or paint, concrete or its leachate, dust or any other pollution associated with the Contractor's operations.

During concrete pouring operations, no fresh concrete, concrete leachate or wash water shall be allowed to enter into any waterbody. The Contractor shall collect and treat excess concrete and concrete wash water appropriately before allowing the water to leave the project site.

The Contractor will ensure that his equipment does not leak fluids that may seep into the groundwater or into the stormwater carried to the nearby waterbodies. In the event that a piece of equipment leaks excessive amounts of fluids, it shall be removed from the project site immediately, until it can be repaired.

Water from dewatering operations shall pass through a settling tank or similar device before being discharged.

The Contractor shall have an amount of fuel absorbent pads that is sufficient to absorb a full tank of fuel from his largest piece of equipment on the site. The pads shall be stored and used in accordance with the manufacturer's recommendations.

i. TMDL/303d Segments

This site does not discharge into a phosphorus TMDL. The project site does not discharge to a 303d segment.

j. Responsibility Requirements

The Contractor shall be responsible for the initial placement, repair and maintenance (as necessary) of the erosion and sediment control features. The Contractor shall employ a "trained individual" (as defined in GP-0-15-002) who will advise the Contractor on where and how to put the necessary erosion and sediment control features, in accordance with the Contract Documents, this SWPPP, the permit and applicable regulations.

Weekly inspection(s) of the erosion and sediment control features will be the responsibility of the Owner. The Owner shall be or shall employ or contract with a "qualified inspector" (as defined in GP-0-15-002). The "qualified inspector" shall provide a written inspection report, in accordance with Appendix H of the New York State Standards and Specifications for Erosion and Sediment Control, after each

inspection. The inspection reports shall be shared with the contractor for inclusion in the field book.

The Contractor shall employ a "trained individual" (as defined in GP-0-15-002) who shall inspect the erosion and sediment controls after each rain event and shall provide a written inspection report in accordance with Appendix H of the New York State Standards and Specifications for Erosion and Sediment Control, after each inspection. The inspection reports shall be shared with the owner for inclusion in the field book.

The Contractor shall make the appropriate additions, corrections, maintenance or replacement of the erosion and sediment control features outlined in the inspection report, this SWPPP and the contract documents. The additions, corrections or repairs shall be made within 24 hours of the inspection.

The Owner shall be responsible for the implementation and maintenance of this SWPPP.

All contractors involved in earth disturbance activities, placement or maintenance of temporary erosion and sediment control practices or construction of post-construction stormwater management practices shall complete and sign the contractor certification. These forms shall be supplied to the owner.

The Contractor and the Owner shall each maintain an on-site log book that includes all inspection reports and SWPPP modifications. The logs shall be kept in a place accessible to an inspector from the local municipality, MS4, County Soil and Water Conservation District, or NYSDEC during working hours.

The Owner shall also have a “qualified inspector” (as defined in GP-0-15-002) who has the necessary qualifications to inspect the post-construction stormwater management practices.

The Owner shall have a “qualified inspector” complete a final inspection prior to submitting the Notice of Termination.

The Owner/Operator will also be responsible for filing modifications to the SWPPP. Modifications that involve major changes to the SWPPP, changes in disturbed area or changes in proposed impervious area must be filed with the MS4 and/or NYSDEC Albany Permits Office. All SWPPP modifications must be filed in the on-site log book and be kept by both the Contractor and the Resident Engineer.

If any changes in these responsibilities occur, the Owner/Operator shall inform the MS4 and/or NYSDEC.

k. Inspection & Site Assessment Detail

The following items shall be documented by the "qualified inspector" conducting the weekly inspections or "the trained individual" conducting rain event inspections, in accordance with NYS regulations and Appendix H of the New York State Standards and Specifications for Erosion and Sediment Control:

- Date, time, and name of person performing the inspections.
- Description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection.
- On a site map, that details the extent of all disturbed site areas and drainage pathways identify the areas that are expected to undergo initial disturbance or significant site work within the next 14-day period.
- On a site map, identify all areas of the site that have undergone temporary or permanent stabilization.
- Identify all areas where active site work has not occurred since the previous 14-day period.
- Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of the sediment storage volume.
- Inspect all erosion and sediment control practices and record all repairs/maintenance that need to be performed.
- Provide photographic evidence of the site conditions and the conduction of the soil and erosion control practices.
- Identify any evidence of erosion occurring on slopes and any loss of stabilizing vegetation or seeding mulch. Document any excessive deposition of sediment or ponding of water along barriers.
- Identify any deficiencies that were identified during the implementation of the SWPPP and corrective actions that must be made.
- A description of the conditions of the runoff at all points of discharge from the site.
- Complete Inspection Report similar to those in Appendix H of the New York State Standards and Specifications for Erosion and Sediment Control.

5. WATER QUANTITY & WATER QUALITY CONTROL PLAN

The disturbed area is calculated to exceed one (1) acre and therefore the project requires a SWPPP. The project is listed on GP-0-15-002 Appendix B Table 2 and therefore this SWPPP includes a Runoff Reduction, and Water Quality and Water Quantity component. The proposed project will involve the construction of a new building with associated access road and parking lots. Erosion and sediment control measures will be maintained during construction to prevent polluted water from entering the unnamed tributary to Fall Creek.

Proposed temporary water quality treatment measures will primarily involve temporary seeding and mulch, rolled erosion control product, inlet protection, and silt fence along fill slopes.

A unified approach is required for sizing Stormwater Management Practices (SMPs) in the State of New York to meet pollutant removal goals, reduce erosion, prevent overbank flooding and help control extreme floods. The pollutant removal goals are met by treating the Water Quality Volume (WQv). The WQv is a value designed to capture and treat 90% of the average annual stormwater runoff volume. This water volume is directly related to the amount of impervious cover at the project site. Water Quality controls for this project are based upon the NYSDEC Stormwater Management Design Manual (SMDM). NYS also has Runoff Reduction goals aimed at reducing the amount of runoff that needs to be treated by an end of the pipe treatment practice. The goal is to reduce the amount of runoff then treat the runoff in the specific drainage area before it enters the storm drainage system and travels to the end of pipe treatment practice.

Standard practices were installed to meet the Runoff Reduction and Water Quality treatment standard. In some locations it was not practical or feasible to install any treatment, so project banking was relied upon to provide enough water quality treatment and runoff reduction to satisfy the project as a whole. The project is comprised entirely of new impervious areas. The Runoff from the new impervious surfaces is subject to both Runoff Reduction and Water Quality treatment requirements.

The project results in a total of 2.20 acres of new impervious surfaces. Runoff reduction was accomplished by using two (2) infiltration basins. The Minimum Runoff Reduction Volume (RRv) calculated for the project sites is 0.041 acre-feet (1,665 CF) and 0.193 acre-feet (8,397 CF) is provided. The Runoff reduction calculations and summary sheets are included in Appendix C.

Water Quality Volumes were calculated for the Proposed Drainage Areas. The project utilizes standard practices to meet the Water Quality Standards. A summary of the Water Quality and Water Quantity calculations is included in Appendix C.

According to the NYSDEC SMDM, the requirements for Channel Protection (Cpv), Overbank Flood (Qp), and the Extreme Storm (Qf) need to be analyzed when there is an increase in the runoff volume from the existing conditions to the proposed conditions to ensure that offsite flows are not increased due to development. Due to the increase in impervious area from pre-construction conditions to post-construction conditions, water quantity practices were necessary to not increase the Cpv, Qp and Qf. The project utilized infiltration basin to meet the Cpv, Qp, and Qf requirements.

As previously stated, the project area consists of one primary drainage area with 4 sub-catchment areas.

A summary of the stormwater quantity and quality practices used is provided below.

Proposed Drainage Area 1

Drainage Area 1 is approximately 6.239 acres and is comprised of woods, meadow and impervious and generally drains from south to north. This area drains to the property to the east and eventually makes its way to an unnamed tributary to Fall Creek.

Drainage Area 1 is comprised of 4 sub-catchment areas. Sub-catchment area 1 drains to the pre-treatment basin, which eventually makes it way to the infiltration basin that discharges in the southwest corner of the site. Sub-catchment area 2 collects drainage from the access drive and directs it to the infiltration bioretention area. Sub-catchment area 3 collects roof runoff from the new building and directs it to the infiltration basin. Sub-catchment area 4 includes site runoff that was not able to be detained.

Water Quality

The drainage area consists of a mixture of roof area, asphalt, pavement and grass. The target RRv for stormwater treatment is 0.04 acre-feet (1,658 CF). Runoff Reduction and water quality treatment are being accomplished by utilizing an infiltration bioretention area and an infiltration basin. The infiltration basin and infiltration bioretention area provide an RRv of 0.193 acre-feet (8,372 CF) which is greater than the target RRv. The target WQv for stormwater treatment is 0.20 acre-feet (8,738 CF). A Water Quality Treatment volume of 0.20 acre-feet (8,685 CF) is provided which is equal to the target WQv. Pretreatment will be accomplished by a combination of grass lined basins and a Hydrodynamic unit.

Subwatershed 1	
Area	2.33 acres
Impervious Area	0.21 acres
RRv Provided	0 CF
Infiltration Rate	N/A

Subwatershed 2	
Area	0.95 acres
Impervious Area	0.74 acres
RRv Provided	1,248 CF
Infiltration Rate	1.0

Subwatershed 3	
Area	2.21 acres
Impervious Area	1.52 acres
RRv Provided	7,160 CF
Infiltration Rate	2.8

Water Quantity

The combination of the two (2) infiltration basins result in a peak discharge that is reduced below preconstruction levels.

Table 1: Stormwater Management Calculations Summary Drainage Area

Drainage Area	**One (1)**	
Storm Event	Pre Project (cfs)	Post Project (cfs) Without Attenuation
1	2.86	5.05
10	9.16	12.70
100	21.39	26.26
Area of Disturbance	4.4 acres	
Initial Water Quality Volume	0.20 acre-feet (8,738 CF)	
Target Water Quality Volume for Project	0.20 acre-feet (8,738 CF)	
Runoff Reduction Volume (RRv) Required	0.04 acre-feet (1,658 CF)	
Runoff Reduction Volume (RRv) Provided	0.19 acre-feet (8,372 CF)	
Water Quality Volume inclusive of RRv Provided	0.20 acre-feet (8,659 CF)	

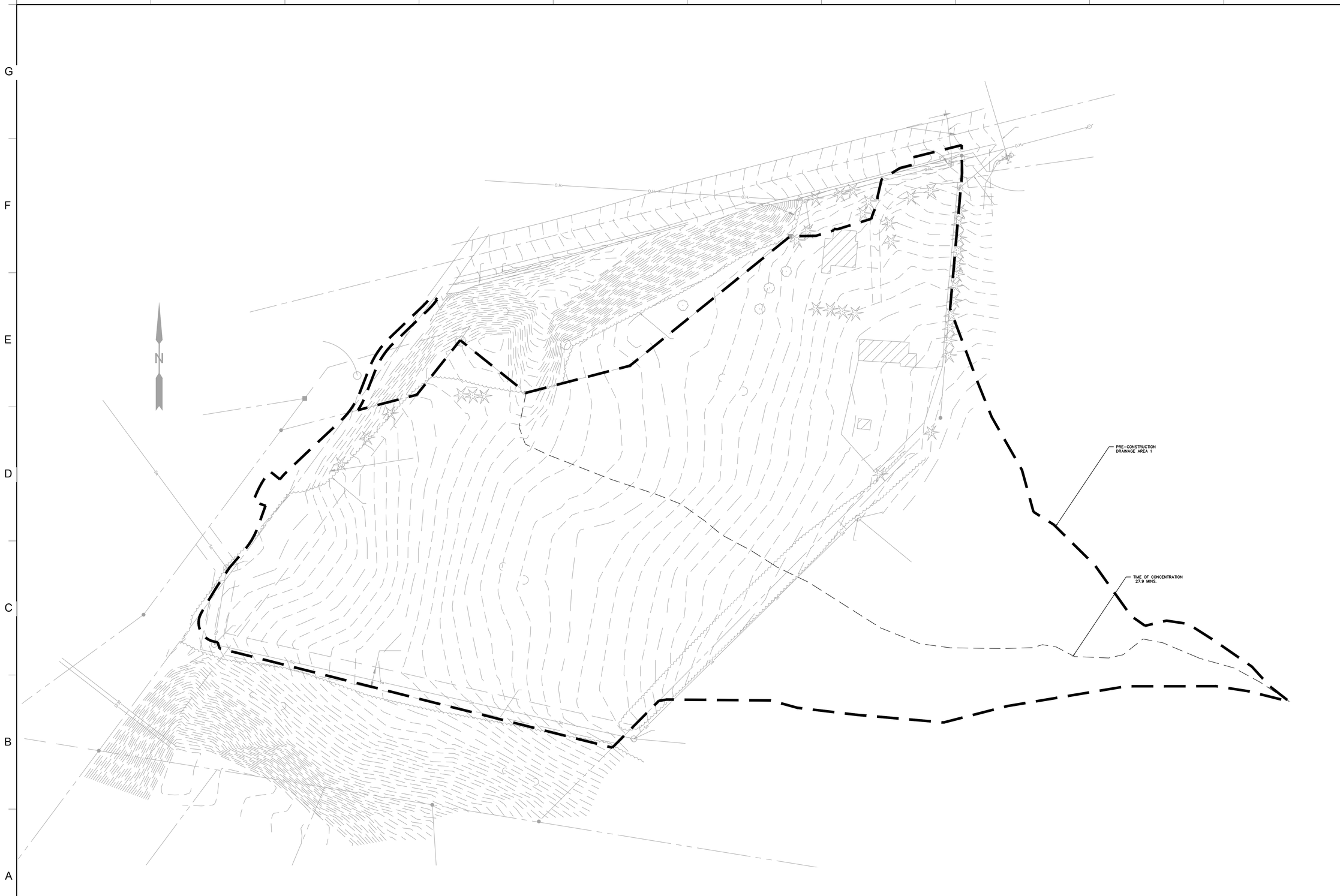
Table 2: Stormwater Management Calculations Summary All Drainage Areas

Drainage Area	**Entire Site**	
Storm Event	Pre Project (cfs)	Post Project with Attenuation (cfs)
1	2.86	0.60
10	9.16	6.67
100	21.39	20.84
Area of Disturbance	4.4 acres	
Initial Water Quality Volume	0.20 acre-feet (8,738 CF)	
Target Water Quality Volume for Project	0.20 acre-feet (8,738 CF)	
Runoff Reduction Volume (RRv) Required	0.04 acre-feet (1,658 CF)	
Runoff Reduction Volume (RRv) Provided	0.19 acre-feet (8,372 CF)	
Water Quality Volume inclusive of RRv Provided	0.20 acre-feet (8,659 CF)	

APPENDIX A:
PROJECT LOCATION MAP

(TO BE INCLUDED AT A LATER DATE)

APPENDIX B:
EXISTING AND PROPOSED DRAINAGE AREA MAPS



SHUMAKER
Consulting Engineering & Land Surveying, D.P.C.
[illegible] COURT STREET
[illegible] ENDICOTT, NEW YORK [illegible]
P: [illegible]

REVISION SCHEDULE

NAME	DATE

SCHEMATIC DESIGN

NOT FOR CONSTRUCTION OR BIDDING

Concept PUD Plan / Schematic Design

EVERGREEN TOWNHOMES

MOR ENTITIES

1081 DRYDEN ROAD, DRYDEN NY

DATE:	01/20/2017
PROJECT:	2016012
DRAWN BY:	MAA
CHECKED BY:	MGS

PRE-CONSTRUCTION DRAINAGE AREAS

FIG 1

SHUMAKER
Consulting Engineering & Land Surveying, D.P.C.
[illegible] COURT STREET
[illegible] AMTON NY [illegible]
P: [illegible]

REVISION SCHEDULE	
NAME	DATE

SCHEMATIC DESIGN

NOT FOR CONSTRUCTION OR BIDDING

Concept PUD Plan / Schematic Design

EVERGREEN TOWNHOMES

MOR ENTITIES

1081 DRYDEN ROAD, DRYDEN NY

DATE:	01/20/2017
PROJECT:	2016012
DRAWN BY:	MAA
CHECKED BY:	MGS

POST-CONSTRUCTION DRAINAGE AREAS

FIG 2

APPENDIX C:
WATER QUALITY, RUNOFF REDUCTION AND WATER QUANTITY CALCULATIONS

Required

Version 1.7
Last Updated: 10/02/2015

Total Water Quality Volume Calculation
WQv(acre-feet) = [(P)(Rv)(A)] /12

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....	
Design Point:	1
P=	1.10 *inch*

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	4.43	2.19	49%	0.49	8,738	
2						
3						
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	4.43	2.19	49%	0.49	**8,738**	**Subtotal 1**
Total	4.43	2.19	49%	0.49	**8,738**	**Initial WQv** **0.20** **af**

Identify Runoff Reduction Techniques By Area

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

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*		
"<<Initial WQv"	4.43	2.19	49%	0.49	8,738		
Subtract Area	0.00	0.00					
WQv adjusted after Area Reductions	**4.43**	**2.19**	49%	0.49	8,738		
Disconnection of Rooftops		0.00					
Adjusted WQv after Area Reduction and Rooftop Disconnect	4.43	2.19	49%	0.49	**8,738**	**0.20**	**af**
WQv reduced by Area Reduction techniques					0	**0.00**	**af**

Minimum RRv

Required

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C		30%
D	**4.43**	20%
Total Area	4.43	
Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	2.19	*acre*
Precipitation	1.1	*in*
Rv	0.95	
Minimum RRv	**1,658**	***ft3***
	0.04	af

Version 1.7
Last Updated: 10/02/2015

Total Water Quality Volume Calculation
WQv(acre-feet) = [(P)(Rv)(A)] /12

Provided

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....	
Design Point:	1
P=	1.10 *inch*

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	2.33	0.21	9%	0.13	1,220	Units 25-36
2	0.67	0.39	58%	0.57	1,535	Infiltration Bioretention
3	2.21	1.52	69%	0.67	5,904	Roofs to Infil. Pond
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	5.21	2.12	41%	0.42	**8,659**	**Subtotal 1**
Total	5.21	2.12	41%	0.42	**8,659**	**Initial WQv**	**0.20**	**af**

Identify Runoff Reduction Techniques By Area

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

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*		
"<<Initial WQv"	5.21	2.12	41%	0.42	8,659		
Subtract Area	0.00	0.00					
WQv adjusted after Area Reductions	**5.21**	**2.12**	41%	0.42	8,659		
Disconnection of Rooftops		0.00					
Adjusted WQv after Area Reduction and Rooftop Disconnect	5.21	2.12	41%	0.42	**8,659**	**0.20**	**af**
WQv reduced by Area Reduction techniques					0	**0.00**	**af**

Infiltrating Bioretention Worksheet

(For use on HSG A or B Soils without underdrains)

WQv ≤ VSM + VDL + (DP x ARG)

VSM = ARG x DSM x nSM

VDL (optional) = ARG x DDL x nDL

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
2	0.67	0.39	0.58	0.57	1535.31	1.10	Infiltration Bioretention
Enter Impervious Area Reduced by Disconnection of Rooftops			58%	0.57	1,535	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.						*ft^3*	

Infiltrating Bioretention Parameters				
Treatment Volume	WQv	1,535	*ft^3*	
Enter depth of soil Media	DSM	3.50	*ft*	*2.5 - 4 ft*
Enter depth of drainage	DDL	3.00	*ft*	*≥ 0.5 ft*
Enter ponding depth above surface	DP	0.5	*ft*	*≤ 0.5*
Enter porosity of Soil Media	nSM	0.20		*≥20%*
Enter porosity of Drainage	nDL	0.40		*≥ 40%*
Required Bioretention Area	ARG	640	*sf*	
Bioretention Area Provided		650	*ft2*	
Native Soil Infiltration Rate		1.00	*in/hr*	*Okay*
Are you using underdrains?		No		
Total Volume Provided		1,560	*ft^3*	*Sum of storage Volume Provided in each layer*

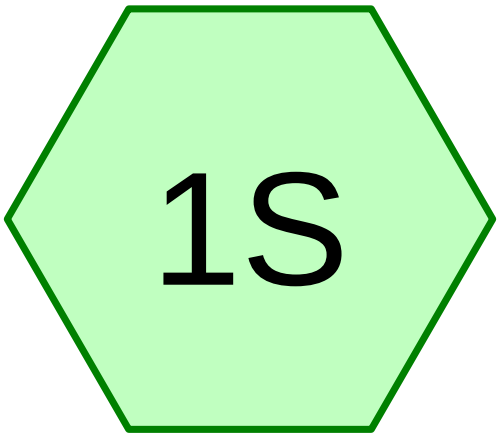
Determine Runoff Reduction			
Runoff Reduction	**1,248**	***ft^3***	***This is 80% of storage volume provided or WQv whichever is less***
Volume Treated	287	*ft^3*	*This is the portion of the WQv that is not reduced in the practice*
Sizing √	*OK*		*Check to be sure Area provided ≥ Af*

Evergreen Townhomes Infiltration Pond Storage

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	
1,010.00	2,164	0	
1,010.20	2,292	446	
1,010.40	2,420	917	
1,010.60	2,548	1,414	
1,010.80	2,676	1,936	
1,011.00	2,804	2,484	
1,011.20	2,944	3,059	
1,011.40	3,085	3,662	
1,011.60	3,225	4,293	
1,011.80	3,366	4,952	
1,012.00	3,506	5,639	
1,012.20	3,656	6,355	
1,012.40	3,806	7,101	
1,012.60	3,955	7,877	Required WQV 7,160 CF
1,012.80	4,105	8,683	
1,013.00	4,255	9,520	
1,013.20	4,419	10,387	
1,013.40	4,583	11,287	
1,013.60	4,747	12,220	
1,013.80	4,911	13,186	
1,014.00	5,075	14,185	
1,014.20	5,246	15,217	
1,014.40	5,418	16,283	
1,014.60	5,589	17,384	
1,014.80	5,761	18,519	
1,015.00	5,932	19,688	
1,015.20	6,117	20,893	
1,015.40	6,302	22,135	
1,015.60	6,487	23,414	
1,015.80	6,672	24,730	
1,016.00	6,857	26,083	

Evergreen Townhomes Pre-treatment Basin Storage

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	
1,017.00	856	0	
1,017.10	888	87	
1,017.20	920	178	
1,017.30	952	271	
1,017.40	984	368	
1,017.50	1,016	468	
1,017.60	1,048	571	
1,017.70	1,080	678	
1,017.80	1,112	787	
1,017.90	1,144	900	
1,018.00	1,176	1,016	
1,018.10	1,212	1,135	
1,018.20	1,248	1,258	
1,018.30	1,284	1,385	
1,018.40	1,320	1,515	
1,018.50	1,356	1,649	
1,018.60	1,391	1,786	
1,018.70	1,427	1,927	
1,018.80	1,463	2,072	
1,018.90	1,499	2,220	
1,019.00	1,535	2,372	
1,019.10	1,575	2,527	
1,019.20	1,615	2,686	
1,019.30	1,655	2,850	
1,019.40	1,695	3,017	
1,019.50	1,735	3,189	
1,019.60	1,774	3,364	
1,019.70	1,814	3,544	1,220 CF needed for pre-treatment
1,019.80	1,854	3,727	Check dam set to inv. 1019.7 for additional detention
1,019.90	1,894	3,915	
1,020.00	1,934	4,106	
1,020.10	1,978	4,302	
1,020.20	2,021	4,502	
1,020.30	2,065	4,706	
1,020.40	2,109	4,915	
1,020.50	2,153	5,128	
1,020.60	2,196	5,345	
1,020.70	2,240	5,567	
1,020.80	2,284	5,793	
1,020.90	2,327	6,024	
1,021.00	2,371	6,259	



Pre-Development

Subcat Reach Pond Link

Routing Diagram for 16100 SWM
Prepared by Microsoft, Printed 1/18/2017

Summary for Subcatchment 1S: Pre-Development

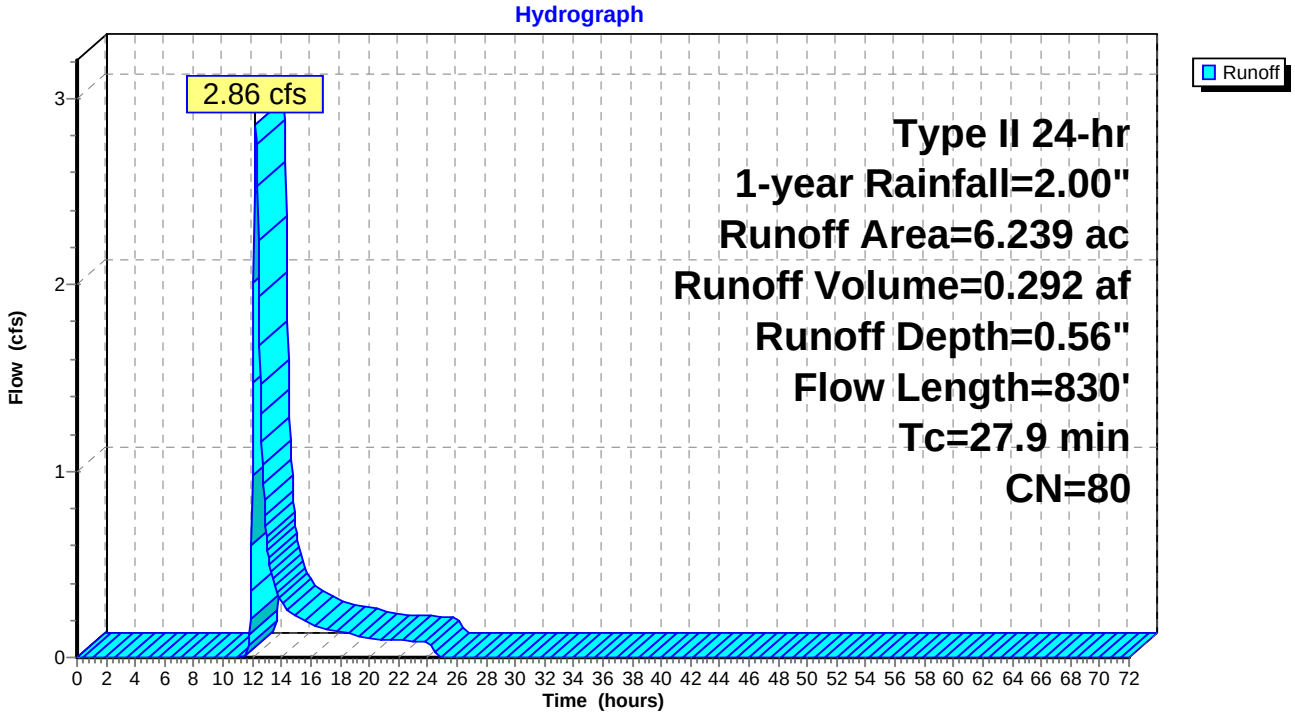
Runoff = 2.86 cfs @ 12.25 hrs, Volume= 0.292 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-year Rainfall=2.00"

	Area (ac)	CN	Description
*	0.085	98	Impervious
	2.040	79	Woods, Fair, HSG D
	4.114	80	>75% Grass cover, Good, HSG D
	6.239	80	Weighted Average
	6.154		98.64% Pervious Area
	0.085		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	100	0.0350	0.09		**Sheet Flow, Sheet Flow - Woods** Woods: Light underbrush n= 0.400 P2= 2.47"
5.5	422	0.0660	1.28		**Shallow Concentrated Flow, Shallow Concentrated - Woods** Woodland Kv= 5.0 fps
2.9	308	0.0650	1.78		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
27.9	830	Total			

Subcatchment 1S: Pre-Development



Summary for Subcatchment 1S: Pre-Development

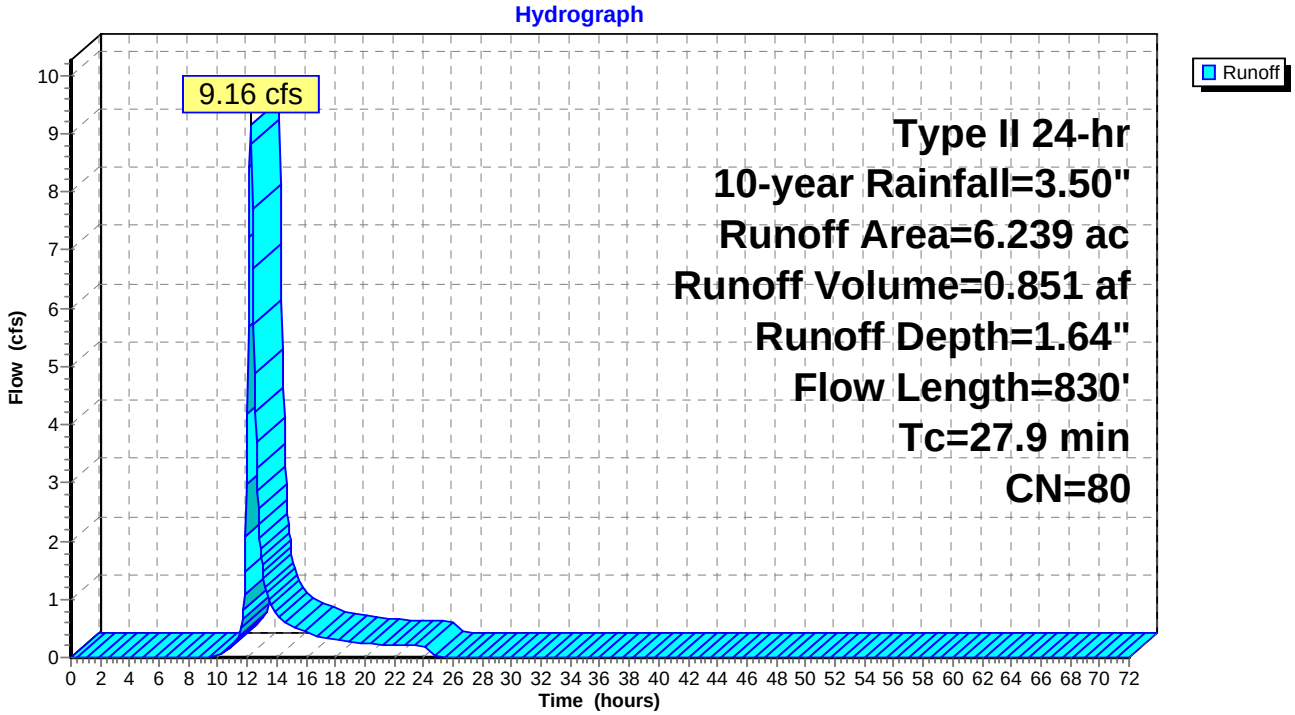
Runoff = 9.16 cfs @ 12.22 hrs, Volume= 0.851 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=3.50"

	Area (ac)	CN	Description
*	0.085	98	Impervious
	2.040	79	Woods, Fair, HSG D
	4.114	80	>75% Grass cover, Good, HSG D
	6.239	80	Weighted Average
	6.154		98.64% Pervious Area
	0.085		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	100	0.0350	0.09		**Sheet Flow, Sheet Flow - Woods** Woods: Light underbrush n= 0.400 P2= 2.47"
5.5	422	0.0660	1.28		**Shallow Concentrated Flow, Shallow Concentrated - Woods** Woodland Kv= 5.0 fps
2.9	308	0.0650	1.78		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
27.9	830	Total			

Subcatchment 1S: Pre-Development



Summary for Subcatchment 1S: Pre-Development

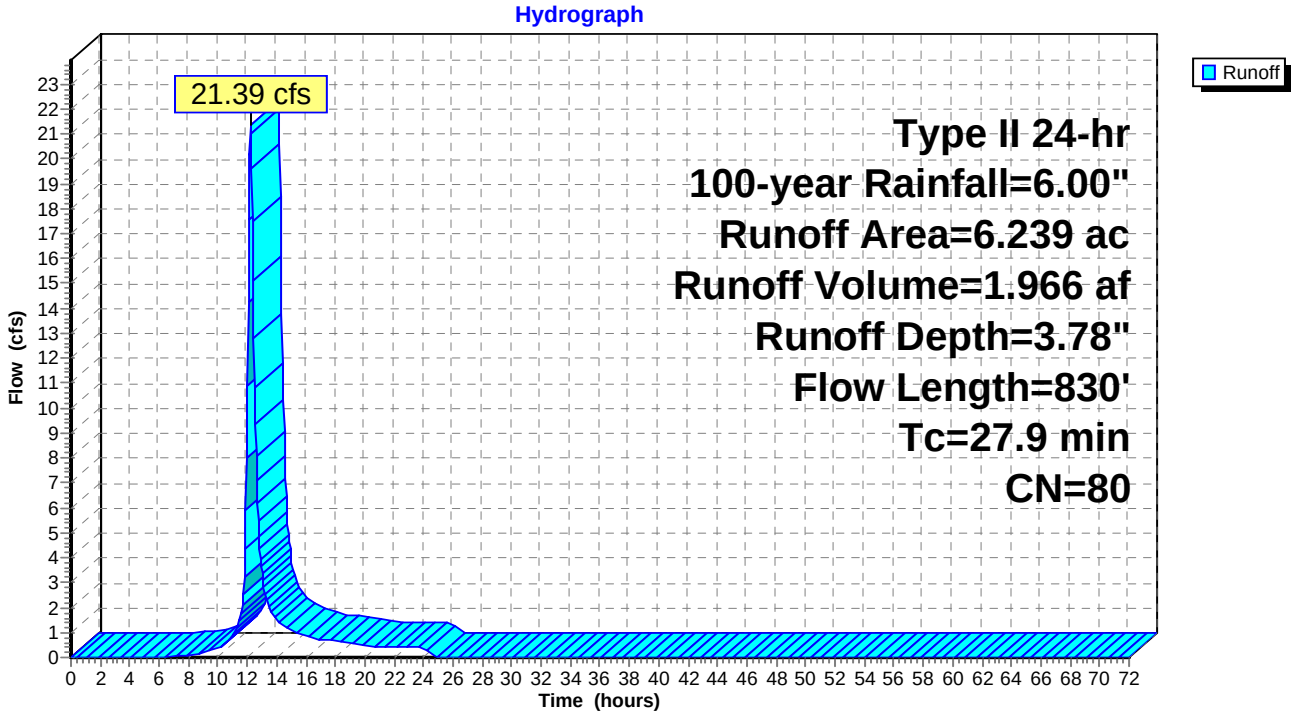
Runoff = 21.39 cfs @ 12.22 hrs, Volume= 1.966 af, Depth= 3.78"

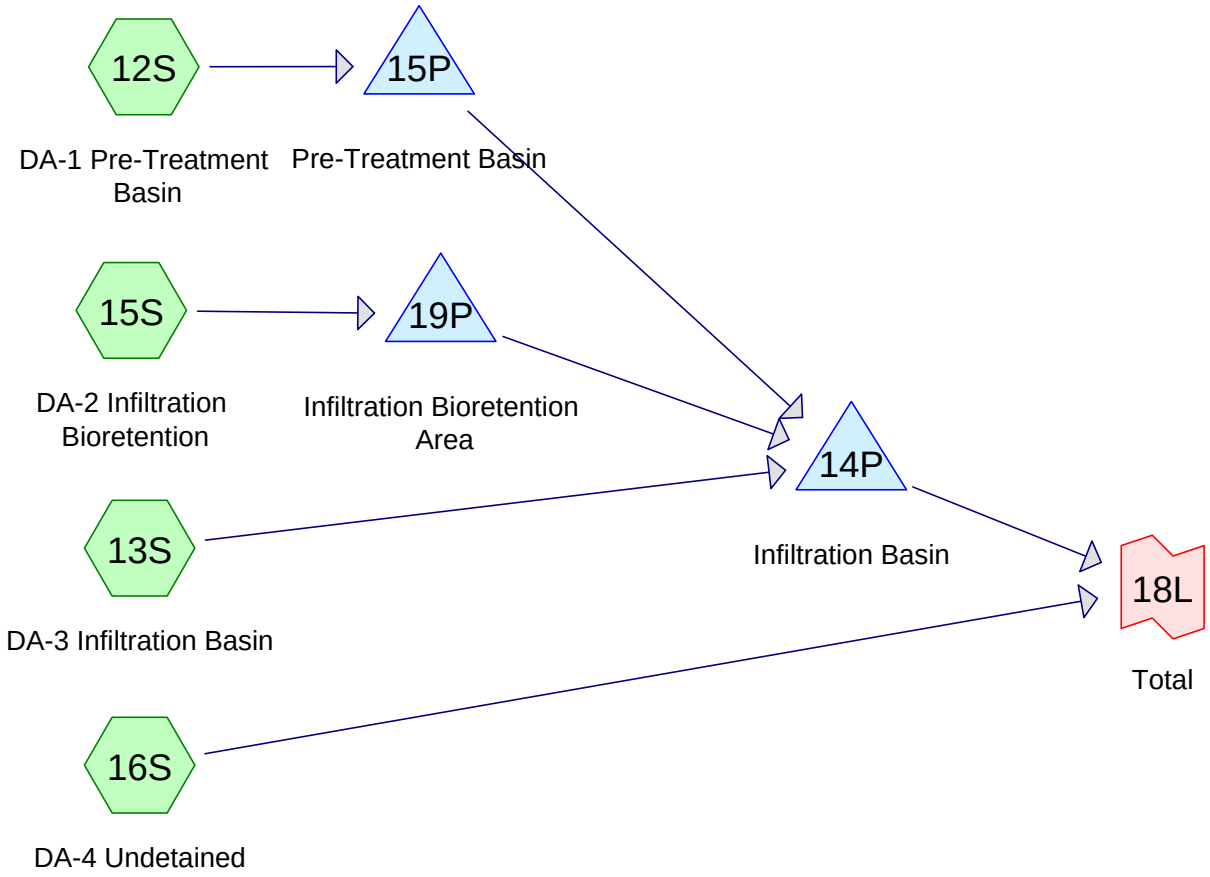
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.00"

	Area (ac)	CN	Description
*	0.085	98	Impervious
	2.040	79	Woods, Fair, HSG D
	4.114	80	>75% Grass cover, Good, HSG D
	6.239	80	Weighted Average
	6.154		98.64% Pervious Area
	0.085		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	100	0.0350	0.09		**Sheet Flow, Sheet Flow - Woods** Woods: Light underbrush n= 0.400 P2= 2.47"
5.5	422	0.0660	1.28		**Shallow Concentrated Flow, Shallow Concentrated - Woods** Woodland Kv= 5.0 fps
2.9	308	0.0650	1.78		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
27.9	830	Total			

Subcatchment 1S: Pre-Development





Subcat Reach Pond Link

Routing Diagram for 16100 SWM
Prepared by Microsoft, Printed 1/19/2017

Summary for Subcatchment 12S: DA-1 Pre-Treatment Basin

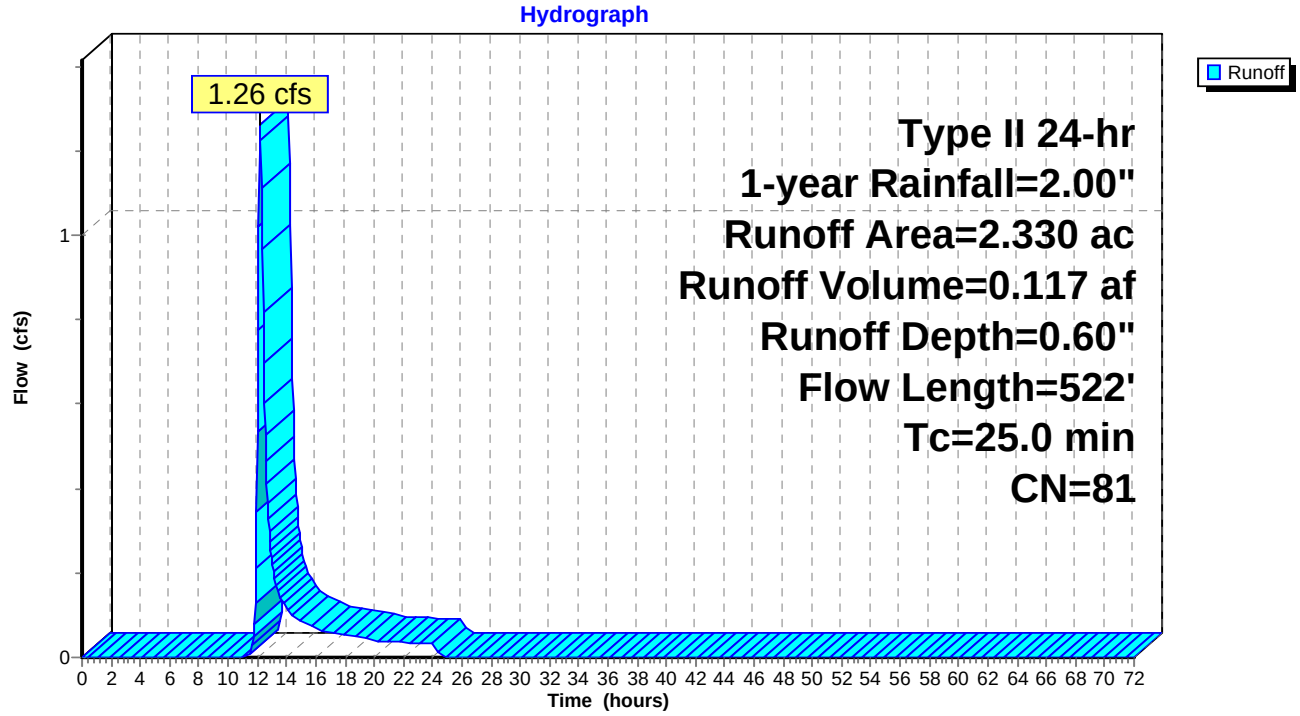
Runoff = 1.26 cfs @ 12.21 hrs, Volume= 0.117 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-year Rainfall=2.00"

	Area (ac)	CN	Description
*	0.210	98	Impervious
	0.400	80	>75% Grass cover, Good, HSG D
*	1.720	79	Woods, Fair, HSG D
	2.330	81	Weighted Average
	2.120		90.99% Pervious Area
	0.210		9.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	100	0.0350	0.09		**Sheet Flow, Woods- Sheet** Woods: Light underbrush n= 0.400 P2= 2.47"
5.5	422	0.0660	1.28		**Shallow Concentrated Flow, Woods- Shallow** Woodland Kv= 5.0 fps
25.0	522	Total			

Subcatchment 12S: DA-1 Pre-Treatment Basin



Summary for Subcatchment 13S: DA-3 Infiltration Basin

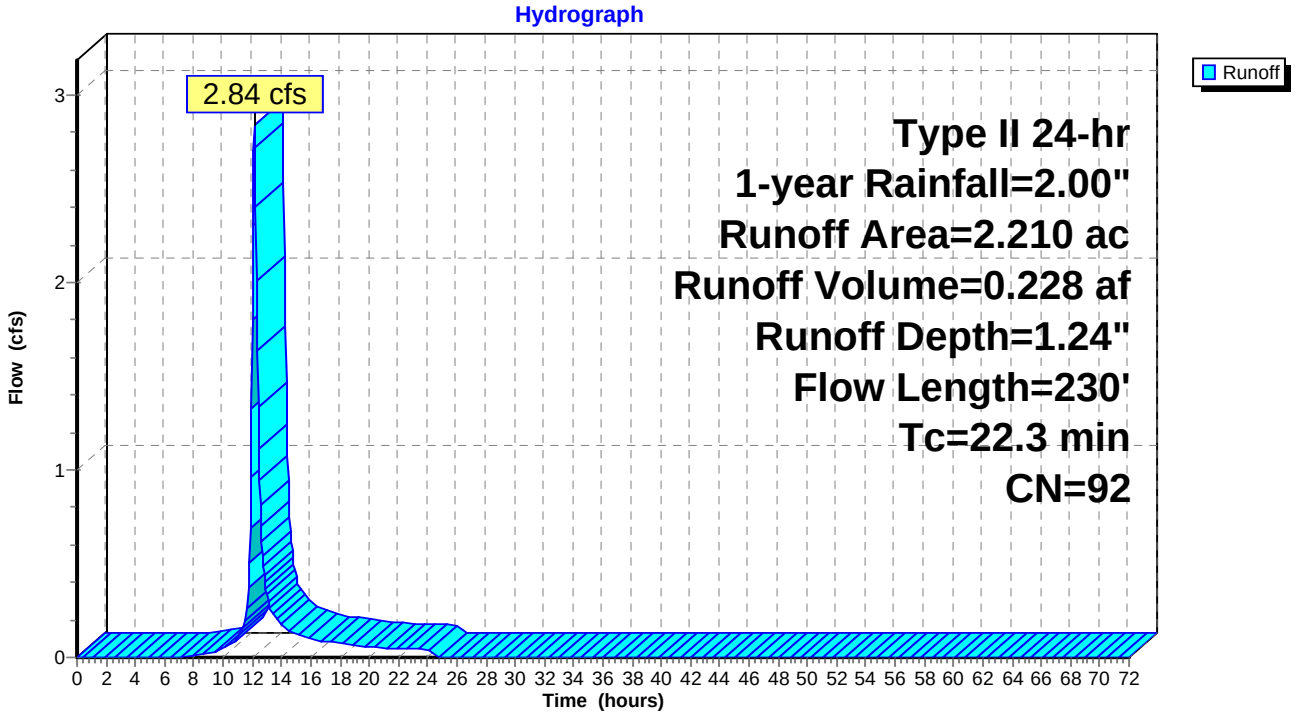
Runoff = 2.84 cfs @ 12.15 hrs, Volume= 0.228 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-year Rainfall=2.00"

	Area (ac)	CN	Description
*	1.520	98	Impervious
	0.600	80	>75% Grass cover, Good, HSG D
*	0.090	79	Woods, Fair, HSG D
	2.210	92	Weighted Average
	0.690		31.22% Pervious Area
	1.520		68.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	100	0.0300	0.08		**Sheet Flow, Sheet Flow Woods** Woods: Light underbrush n= 0.400 P2= 2.47"
1.5	130	0.0400	1.40		**Shallow Concentrated Flow, Shallow grass** Short Grass Pasture Kv= 7.0 fps
22.3	230	Total			

Subcatchment 13S: DA-3 Infiltration Basin



Summary for Subcatchment 15S: DA-2 Infiltration Bioretention

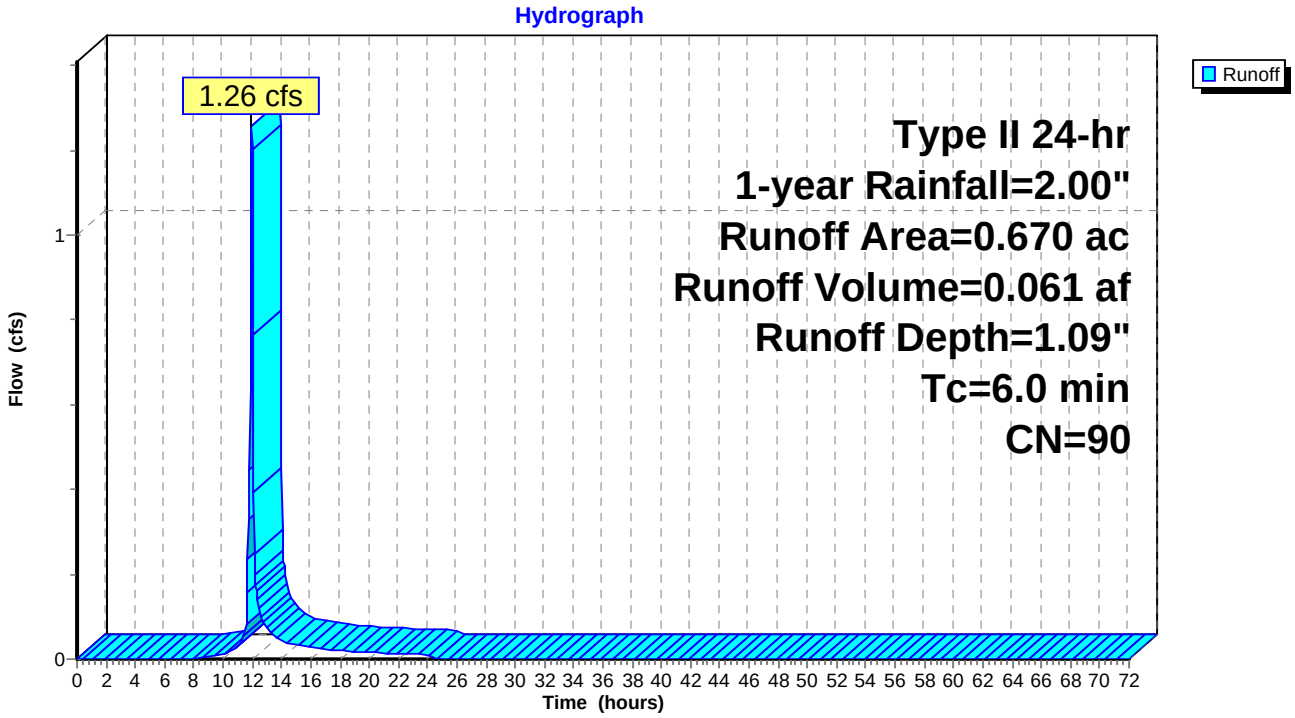
Runoff = 1.26 cfs @ 11.97 hrs, Volume= 0.061 af, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-year Rainfall=2.00"

	Area (ac)	CN	Description
*	0.390	98	Impervious
	0.280	80	>75% Grass cover, Good, HSG D
*	0.000	79	Woods, Fair, HSG D
	0.670	90	Weighted Average
	0.280		41.79% Pervious Area
	0.390		58.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 15S: DA-2 Infiltration Bioretention



Summary for Subcatchment 16S: DA-4 Undetained

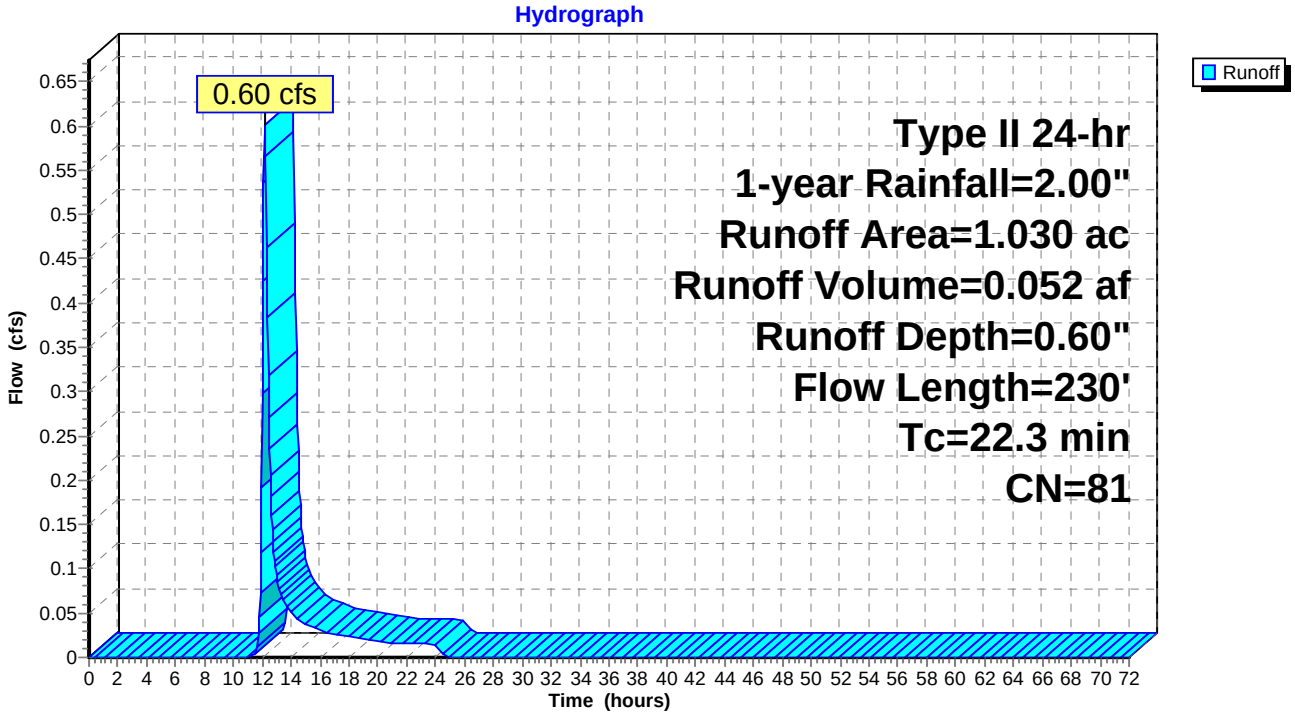
Runoff = 0.60 cfs @ 12.17 hrs, Volume= 0.052 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-year Rainfall=2.00"

	Area (ac)	CN	Description
*	0.070	98	Impervious
	0.960	80	>75% Grass cover, Good, HSG D
*	0.000	79	Woods, Fair, HSG D
	1.030	81	Weighted Average
	0.960		93.20% Pervious Area
	0.070		6.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	100	0.0300	0.08		**Sheet Flow, Sheet Woods** Woods: Light underbrush n= 0.400 P2= 2.47"
1.5	130	0.0400	1.40		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
22.3	230	Total			

Subcatchment 16S: DA-4 Undetained



Summary for Pond 14P: Infiltration Basin

Inflow Area = 5.210 ac, 40.69% Impervious, Inflow Depth = 0.67" for 1-year event
Inflow = 3.24 cfs @ 12.08 hrs, Volume= 0.290 af
Outflow = 0.23 cfs @ 13.62 hrs, Volume= 0.290 af, Atten= 93%, Lag= 92.6 min
Discarded = 0.23 cfs @ 13.62 hrs, Volume= 0.290 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 1,012.06' @ 13.62 hrs Surf.Area= 3,553 sf Storage= 5,862 cf

Plug-Flow detention time= 286.0 min calculated for 0.290 af (100% of inflow)
Center-of-Mass det. time= 285.9 min (1,145.8 - 860.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	26,083 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

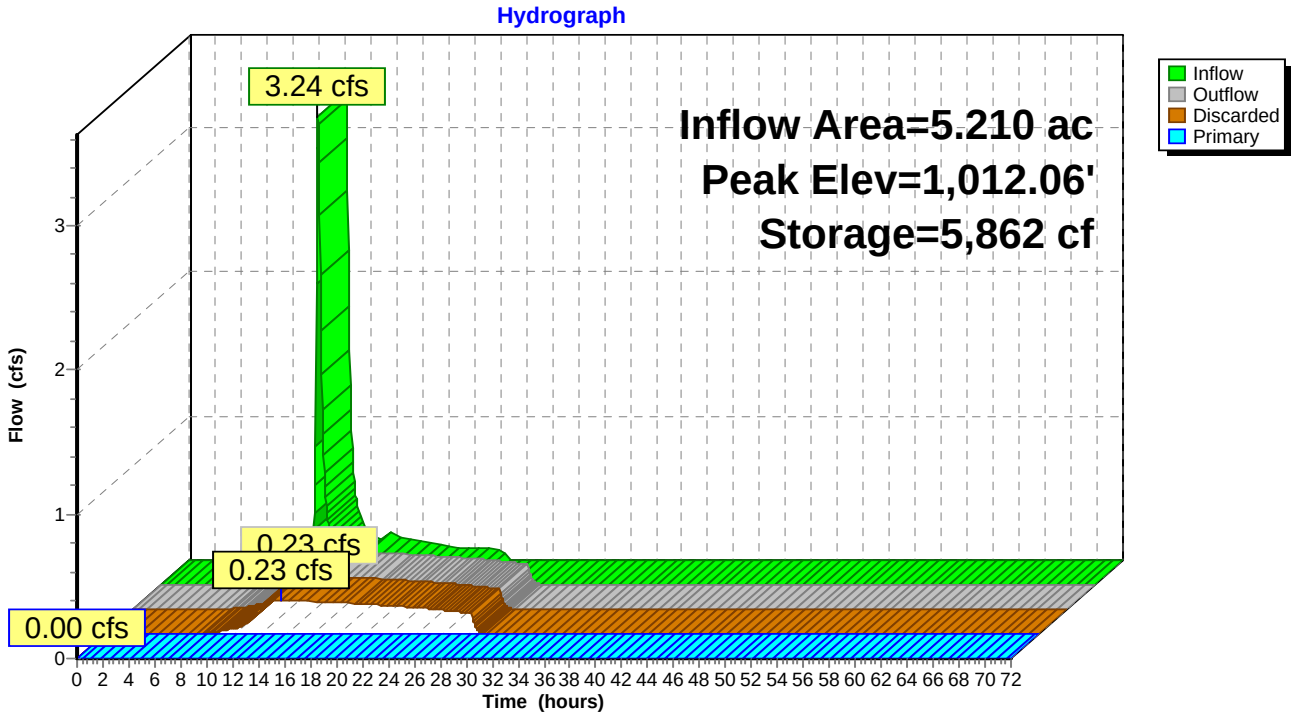
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	2,164	0	0
1,011.00	2,804	2,484	2,484
1,012.00	3,506	3,155	5,639
1,013.00	4,255	3,881	9,520
1,014.00	5,075	4,665	14,185
1,015.00	5,932	5,504	19,688
1,016.00	6,857	6,395	26,083

Device	Routing	Invert	Outlet Devices
#1	Primary	1,010.00'	**24.0" Round Culvert** L= 68.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,010.00' / 1,009.00' S= 0.0147 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Discarded	1,010.00'	**2.800 in/hr Exfiltration over Surface area**
#3	Device 1	1,012.60'	**30.0" W x 12.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	1,014.50'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.23 cfs @ 13.62 hrs HW=1,012.06' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.23 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,010.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 14P: Infiltration Basin



Summary for Pond 15P: Pre-Treatment Basin

Inflow Area = 2.330 ac, 9.01% Impervious, Inflow Depth = 0.60" for 1-year event
Inflow = 1.26 cfs @ 12.21 hrs, Volume= 0.117 af
Outflow = 0.08 cfs @ 15.38 hrs, Volume= 0.036 af, Atten= 94%, Lag= 190.7 min
Primary = 0.08 cfs @ 15.38 hrs, Volume= 0.036 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 1,019.71' @ 15.38 hrs Surf.Area= 1,818 sf Storage= 3,560 cf

Plug-Flow detention time= 415.7 min calculated for 0.036 af (31% of inflow)
Center-of-Mass det. time= 264.3 min (1,145.0 - 880.7)

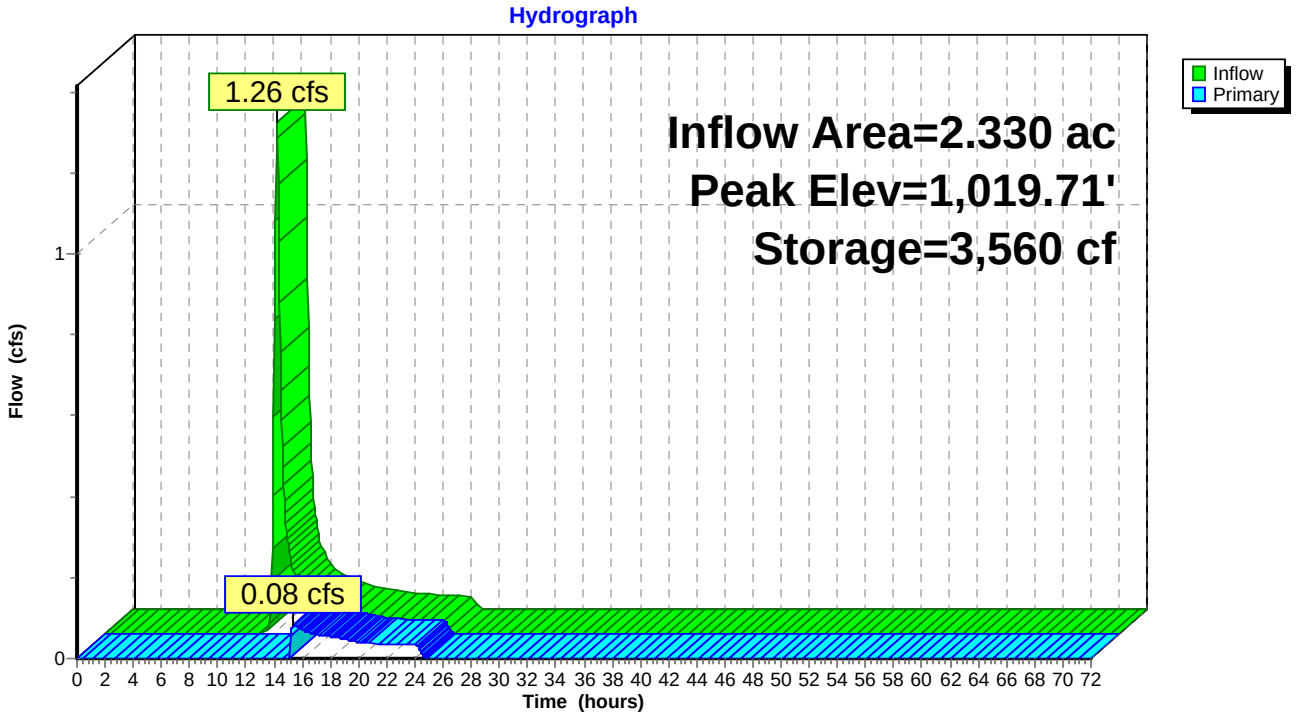
Volume	Invert	Avail.Storage	Storage Description
#1	1,017.00'	6,259 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,017.00	856	0	0
1,018.00	1,176	1,016	1,016
1,019.00	1,535	1,356	2,372
1,020.00	1,934	1,735	4,106
1,021.00	2,371	2,153	6,259

Device	Routing	Invert	Outlet Devices
#1	Primary	1,019.70'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 1.30 Width (feet) 20.00 20.00

Primary OutFlow Max=0.05 cfs @ 15.38 hrs HW=1,019.71' (Free Discharge)
↑—**1=Custom Weir/Orifice** (Weir Controls 0.05 cfs @ 0.31 fps)

Pond 15P: Pre-Treatment Basin



Summary for Pond 19P: Infiltration Bioretention Area

Inflow Area = 0.670 ac, 58.21% Impervious, Inflow Depth = 1.09" for 1-year event
Inflow = 1.26 cfs @ 11.97 hrs, Volume= 0.061 af
Outflow = 1.26 cfs @ 12.01 hrs, Volume= 0.061 af, Atten= 0%, Lag= 2.1 min
Discarded = 0.03 cfs @ 12.01 hrs, Volume= 0.035 af
Primary = 1.23 cfs @ 12.01 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 1,016.61' @ 12.01 hrs Surf.Area= 1,148 sf Storage= 626 cf

Plug-Flow detention time= 136.1 min calculated for 0.061 af (100% of inflow)
Center-of-Mass det. time= 136.1 min (959.4 - 823.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,016.00'	2,661 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

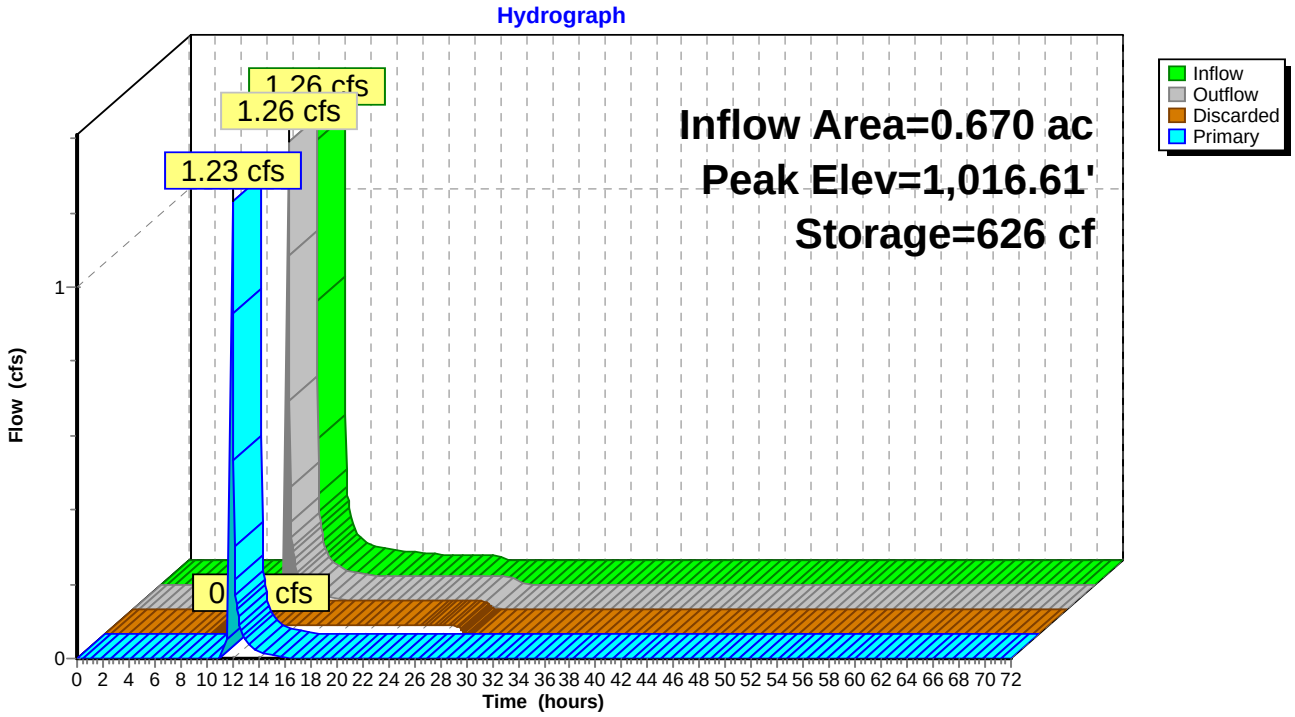
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,016.00	897	0	0
1,017.00	1,307	1,102	1,102
1,018.00	1,810	1,559	2,661

Device	Routing	Invert	Outlet Devices
#1	Primary	1,016.00'	**24.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,016.00' / 1,015.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Discarded	1,016.00'	**1.000 in/hr Exfiltration over Surface area**
#3	Device 1	1,016.50'	**36.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.01 hrs HW=1,016.61' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=1.19 cfs @ 12.01 hrs HW=1,016.61' (Free Discharge)
↑**1=Culvert** (Passes 1.19 cfs of 1.70 cfs potential flow)
↑**3=Orifice/Grate** (Weir Controls 1.19 cfs @ 1.08 fps)

Pond 19P: Infiltration Bioretention Area

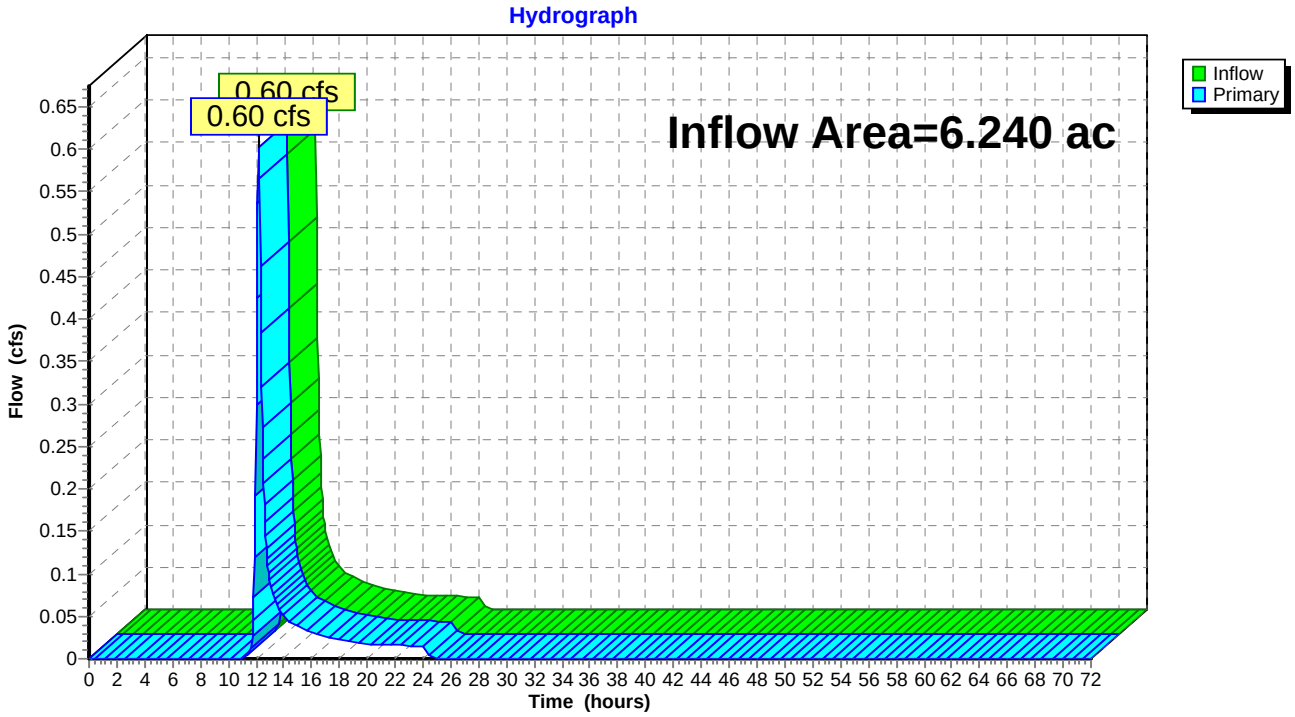


Summary for Link 18L: Total

Inflow Area = 6.240 ac, 35.10% Impervious, Inflow Depth = 0.10" for 1-year event
Inflow = 0.60 cfs @ 12.17 hrs, Volume= 0.052 af
Primary = 0.60 cfs @ 12.17 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 18L: Total



Summary for Subcatchment 12S: DA-1 Pre-Treatment Basin

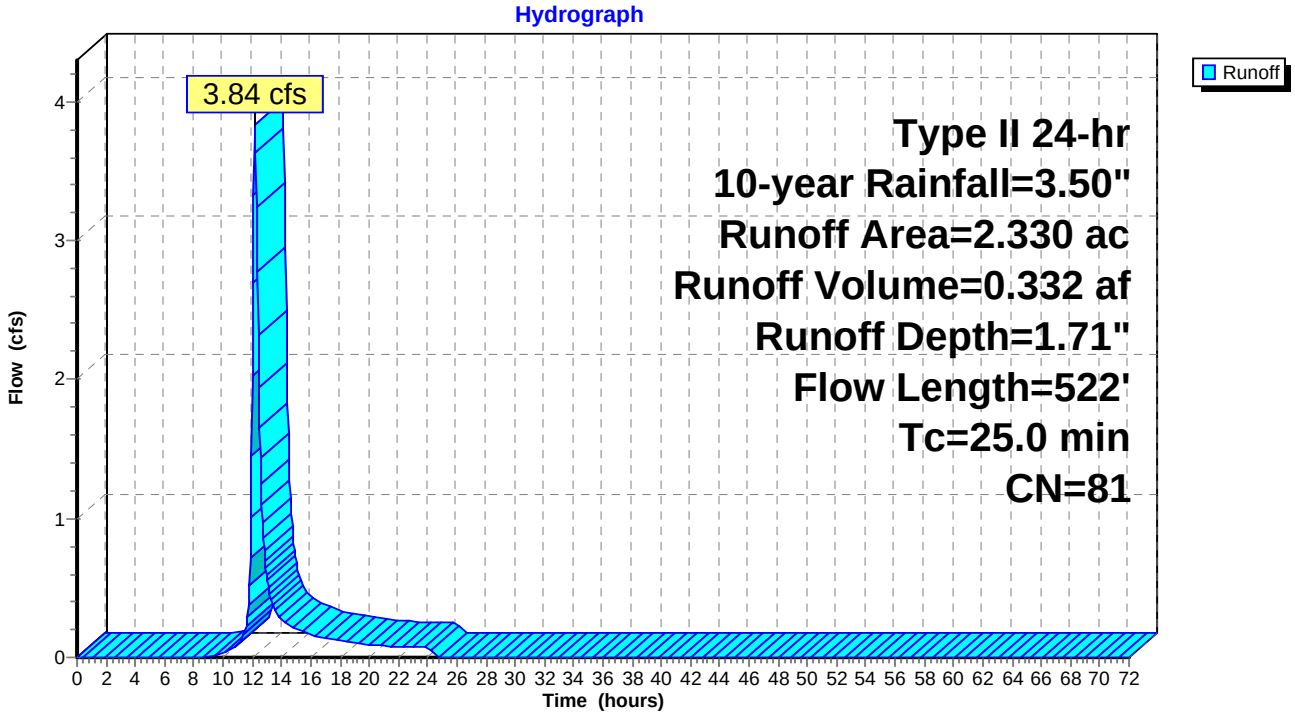
Runoff = 3.84 cfs @ 12.19 hrs, Volume= 0.332 af, Depth= 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=3.50"

	Area (ac)	CN	Description
*	0.210	98	Impervious
	0.400	80	>75% Grass cover, Good, HSG D
*	1.720	79	Woods, Fair, HSG D
	2.330	81	Weighted Average
	2.120		90.99% Pervious Area
	0.210		9.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	100	0.0350	0.09		**Sheet Flow, Woods- Sheet** Woods: Light underbrush n= 0.400 P2= 2.47"
5.5	422	0.0660	1.28		**Shallow Concentrated Flow, Woods- Shallow** Woodland Kv= 5.0 fps
25.0	522	Total			

Subcatchment 12S: DA-1 Pre-Treatment Basin



Summary for Subcatchment 13S: DA-3 Infiltration Basin

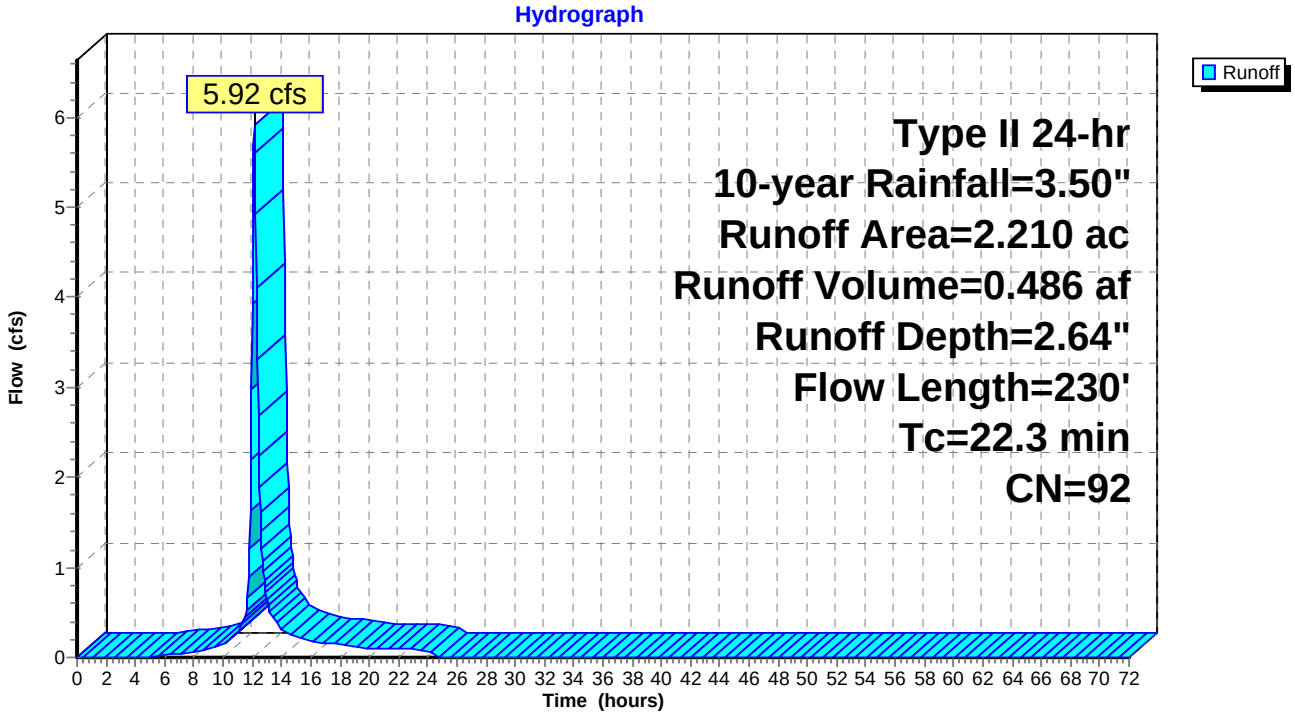
Runoff = 5.92 cfs @ 12.15 hrs, Volume= 0.486 af, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=3.50"

	Area (ac)	CN	Description
*	1.520	98	Impervious
	0.600	80	>75% Grass cover, Good, HSG D
*	0.090	79	Woods, Fair, HSG D
	2.210	92	Weighted Average
	0.690		31.22% Pervious Area
	1.520		68.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	100	0.0300	0.08		**Sheet Flow, Sheet Flow Woods** Woods: Light underbrush n= 0.400 P2= 2.47"
1.5	130	0.0400	1.40		**Shallow Concentrated Flow, Shallow grass** Short Grass Pasture Kv= 7.0 fps
22.3	230	Total			

Subcatchment 13S: DA-3 Infiltration Basin



Summary for Subcatchment 15S: DA-2 Infiltration Bioretention

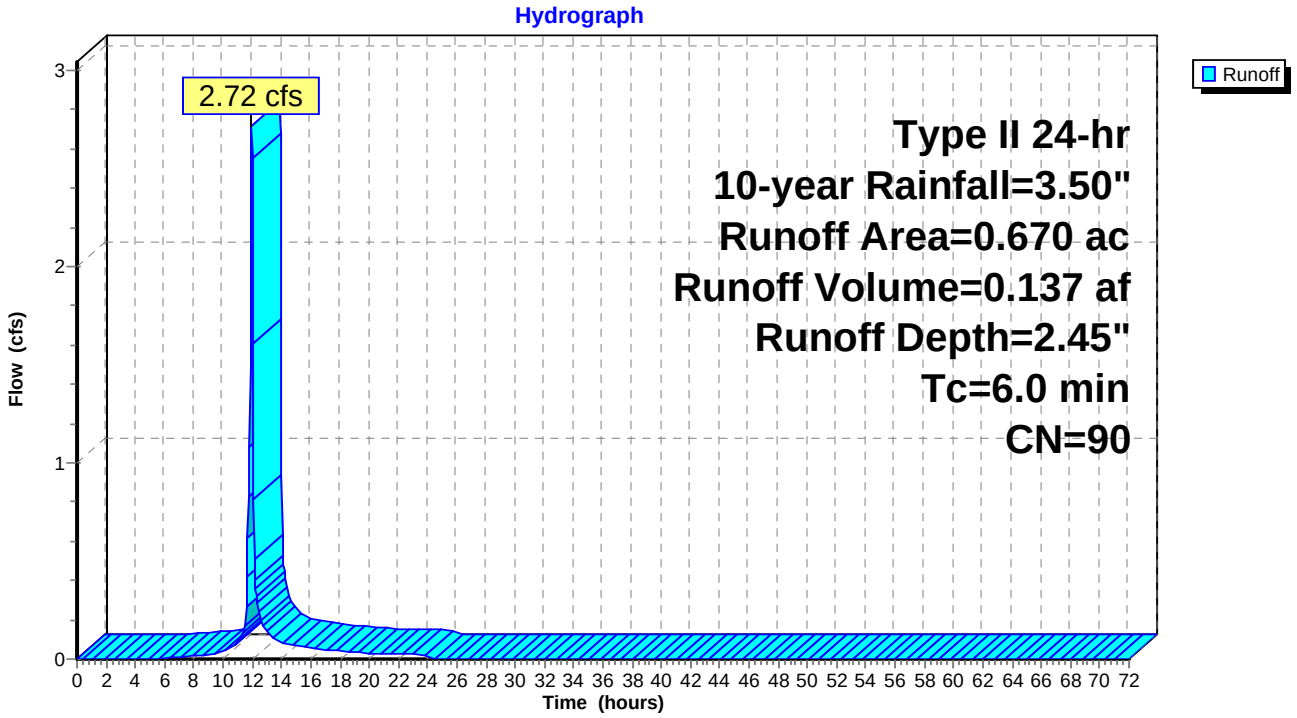
Runoff = 2.72 cfs @ 11.97 hrs, Volume= 0.137 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=3.50"

	Area (ac)	CN	Description
*	0.390	98	Impervious
	0.280	80	>75% Grass cover, Good, HSG D
*	0.000	79	Woods, Fair, HSG D
	0.670	90	Weighted Average
	0.280		41.79% Pervious Area
	0.390		58.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 15S: DA-2 Infiltration Bioretention



Summary for Subcatchment 16S: DA-4 Undetained

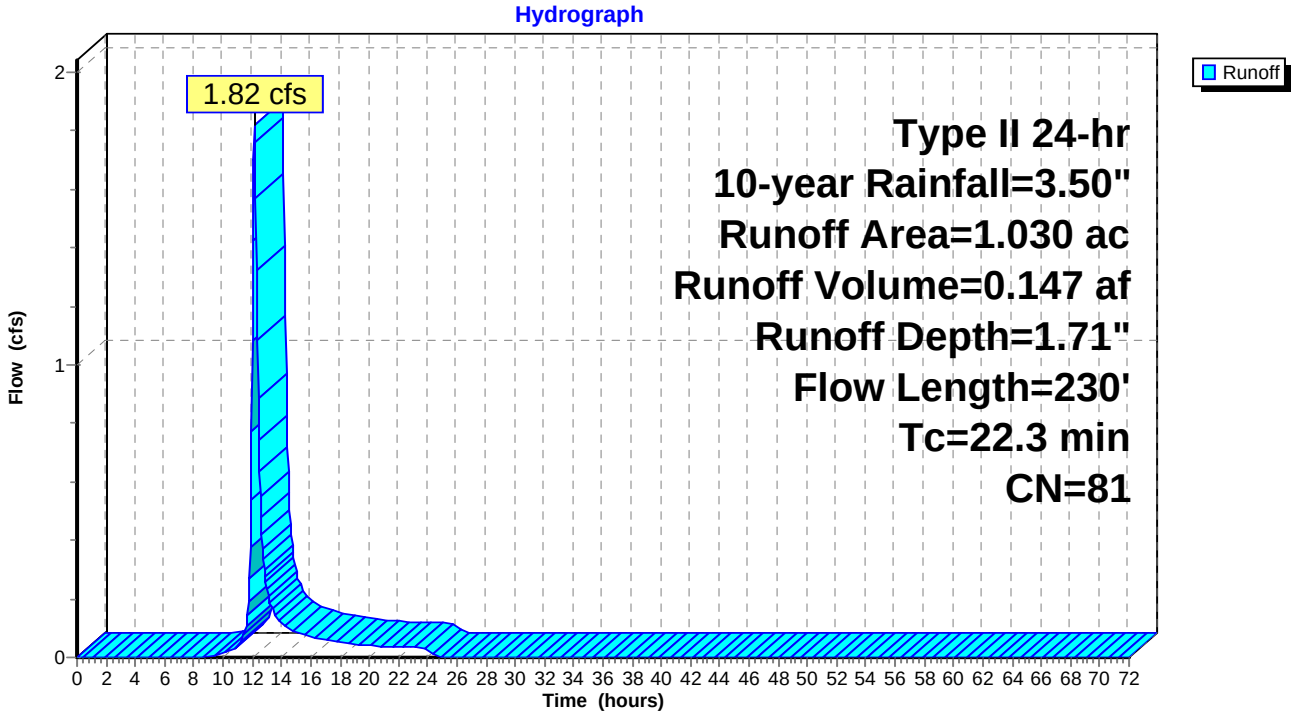
Runoff = 1.82 cfs @ 12.16 hrs, Volume= 0.147 af, Depth= 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=3.50"

	Area (ac)	CN	Description
*	0.070	98	Impervious
	0.960	80	>75% Grass cover, Good, HSG D
*	0.000	79	Woods, Fair, HSG D
	1.030	81	Weighted Average
	0.960		93.20% Pervious Area
	0.070		6.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	100	0.0300	0.08		**Sheet Flow, Sheet Woods** Woods: Light underbrush n= 0.400 P2= 2.47"
1.5	130	0.0400	1.40		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
22.3	230	Total			

Subcatchment 16S: DA-4 Undetained



Summary for Pond 14P: Infiltration Basin

Inflow Area = 5.210 ac, 40.69% Impervious, Inflow Depth = 1.91" for 10-year event
Inflow = 9.51 cfs @ 12.25 hrs, Volume= 0.827 af
Outflow = 5.94 cfs @ 12.38 hrs, Volume= 0.827 af, Atten= 38%, Lag= 7.9 min
Discarded = 0.30 cfs @ 12.38 hrs, Volume= 0.461 af
Primary = 5.64 cfs @ 12.38 hrs, Volume= 0.367 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 1,013.39' @ 12.38 hrs Surf.Area= 4,575 sf Storage= 11,242 cf

Plug-Flow detention time= 214.3 min calculated for 0.827 af (100% of inflow)
Center-of-Mass det. time= 214.5 min (1,043.6 - 829.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	26,083 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

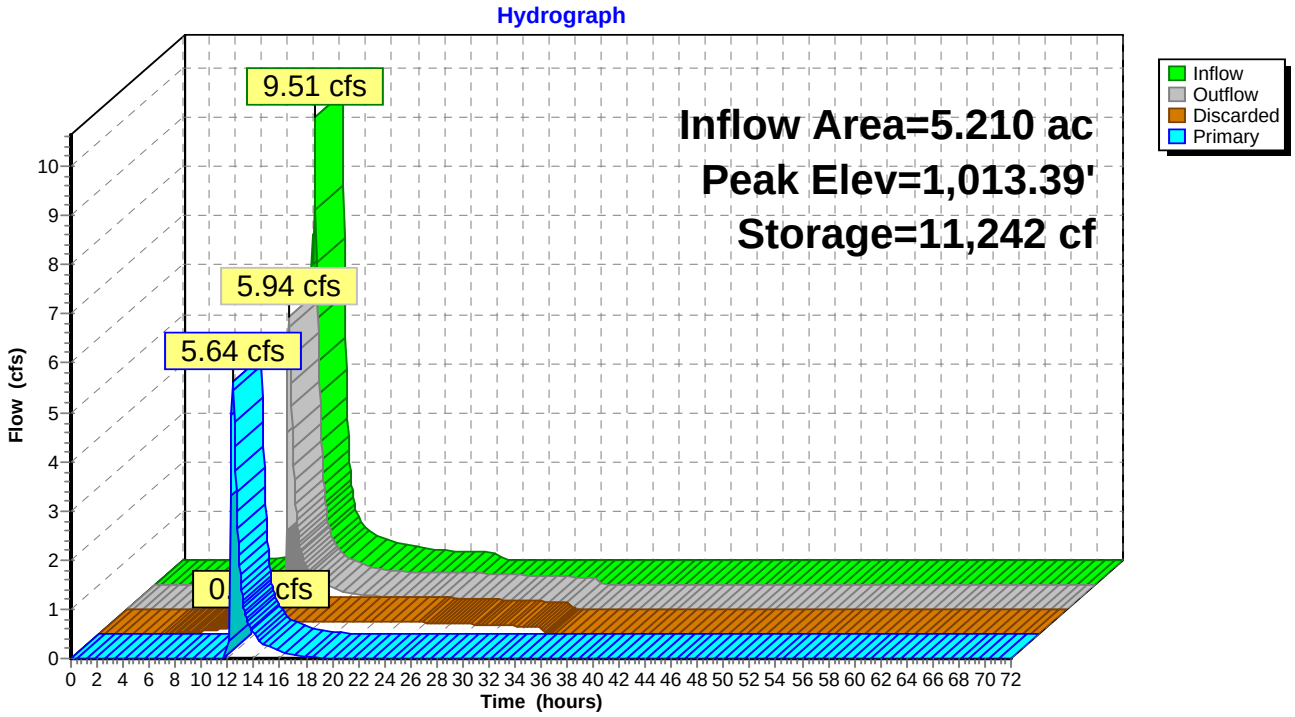
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	2,164	0	0
1,011.00	2,804	2,484	2,484
1,012.00	3,506	3,155	5,639
1,013.00	4,255	3,881	9,520
1,014.00	5,075	4,665	14,185
1,015.00	5,932	5,504	19,688
1,016.00	6,857	6,395	26,083

Device	Routing	Invert	Outlet Devices
#1	Primary	1,010.00'	**24.0" Round Culvert** L= 68.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,010.00' / 1,009.00' S= 0.0147 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Discarded	1,010.00'	**2.800 in/hr Exfiltration over Surface area**
#3	Device 1	1,012.60'	**30.0" W x 12.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	1,014.50'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.30 cfs @ 12.38 hrs HW=1,013.39' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.30 cfs)

Primary OutFlow Max=5.59 cfs @ 12.38 hrs HW=1,013.39' (Free Discharge)
└**1=Culvert** (Passes 5.59 cfs of 18.45 cfs potential flow)
  ├**3=Orifice/Grate** (Orifice Controls 5.59 cfs @ 2.85 fps)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 14P: Infiltration Basin



Summary for Pond 15P: Pre-Treatment Basin

Inflow Area = 2.330 ac, 9.01% Impervious, Inflow Depth = 1.71" for 10-year event
Inflow = 3.84 cfs @ 12.19 hrs, Volume= 0.332 af
Outflow = 4.30 cfs @ 12.26 hrs, Volume= 0.250 af, Atten= 0%, Lag= 4.2 min
Primary = 4.30 cfs @ 12.26 hrs, Volume= 0.250 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 1,019.86' @ 12.26 hrs Surf.Area= 1,879 sf Storage= 3,844 cf

Plug-Flow detention time= 142.1 min calculated for 0.250 af (75% of inflow)
Center-of-Mass det. time= 47.3 min (896.8 - 849.5)

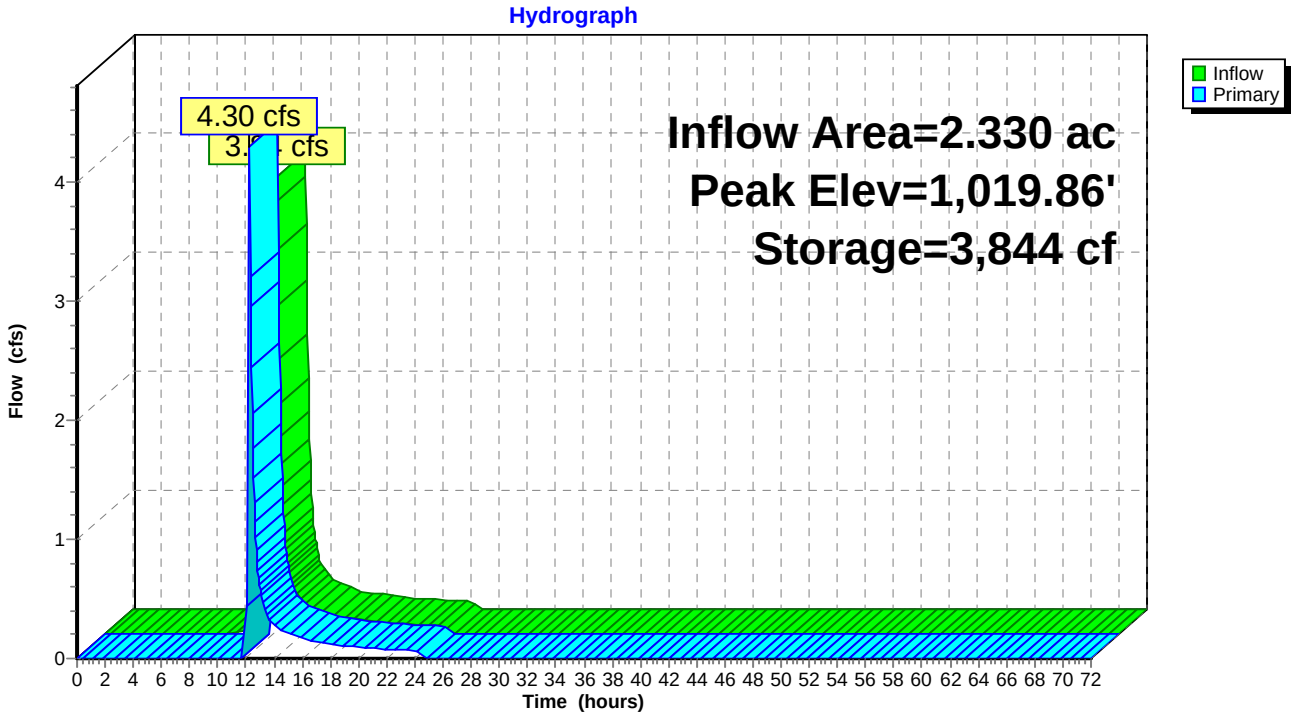
Volume	Invert	Avail.Storage	Storage Description
#1	1,017.00'	6,259 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,017.00	856	0	0
1,018.00	1,176	1,016	1,016
1,019.00	1,535	1,356	2,372
1,020.00	1,934	1,735	4,106
1,021.00	2,371	2,153	6,259

Device	Routing	Invert	Outlet Devices
#1	Primary	1,019.70'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 1.30 Width (feet) 20.00 20.00

Primary OutFlow Max=3.98 cfs @ 12.26 hrs HW=1,019.85' (Free Discharge)
↑—**1=Custom Weir/Orifice** (Weir Controls 3.98 cfs @ 1.29 fps)

Pond 15P: Pre-Treatment Basin



Summary for Pond 19P: Infiltration Bioretention Area

Inflow Area = 0.670 ac, 58.21% Impervious, Inflow Depth = 2.45" for 10-year event
Inflow = 2.72 cfs @ 11.97 hrs, Volume= 0.137 af
Outflow = 2.48 cfs @ 12.00 hrs, Volume= 0.137 af, Atten= 9%, Lag= 2.0 min
Discarded = 0.03 cfs @ 12.00 hrs, Volume= 0.045 af
Primary = 2.45 cfs @ 12.00 hrs, Volume= 0.091 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 1,016.74' @ 12.00 hrs Surf.Area= 1,201 sf Storage= 777 cf

Plug-Flow detention time= 82.5 min calculated for 0.137 af (100% of inflow)
Center-of-Mass det. time= 82.8 min (883.1 - 800.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,016.00'	2,661 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

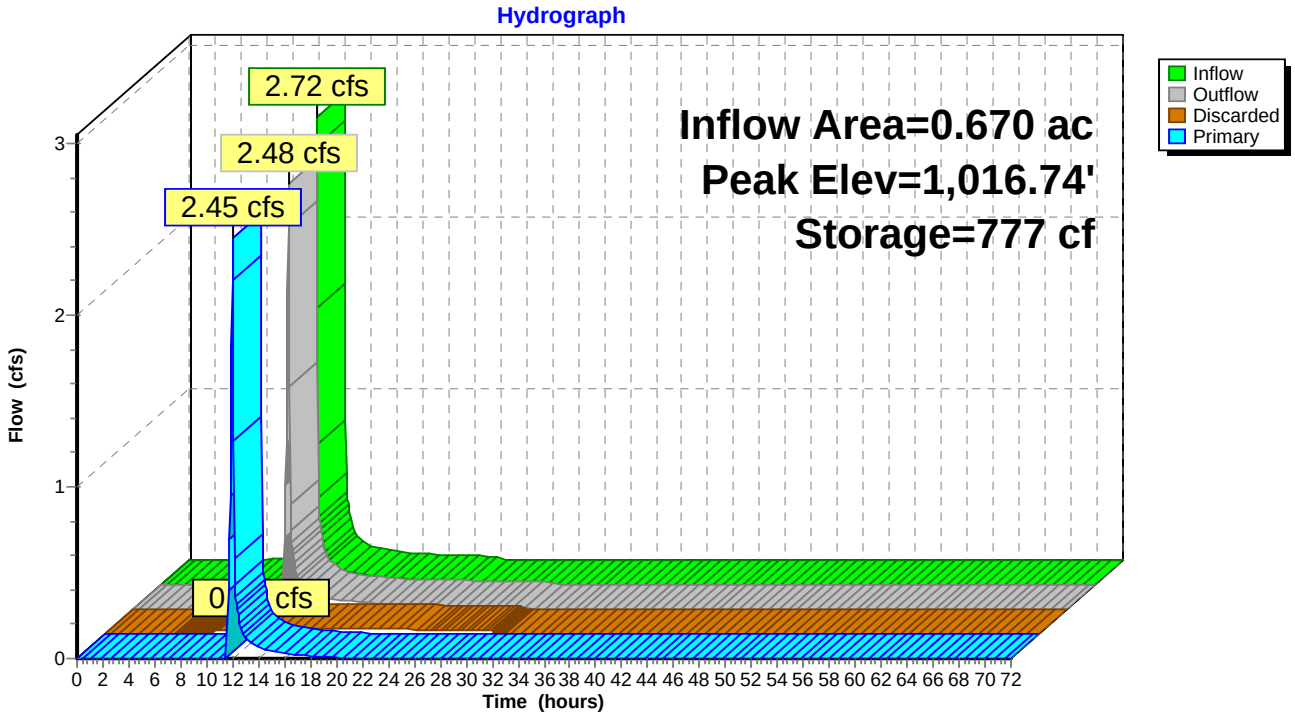
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,016.00	897	0	0
1,017.00	1,307	1,102	1,102
1,018.00	1,810	1,559	2,661

Device	Routing	Invert	Outlet Devices
#1	Primary	1,016.00'	**24.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,016.00' / 1,015.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Discarded	1,016.00'	**1.000 in/hr Exfiltration over Surface area**
#3	Device 1	1,016.50'	**36.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.00 hrs HW=1,016.74' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=2.45 cfs @ 12.00 hrs HW=1,016.74' (Free Discharge)
↑**1=Culvert** (Inlet Controls 2.45 cfs @ 2.31 fps)
↑**3=Orifice/Grate** (Passes 2.45 cfs of 3.85 cfs potential flow)

Pond 19P: Infiltration Bioretention Area

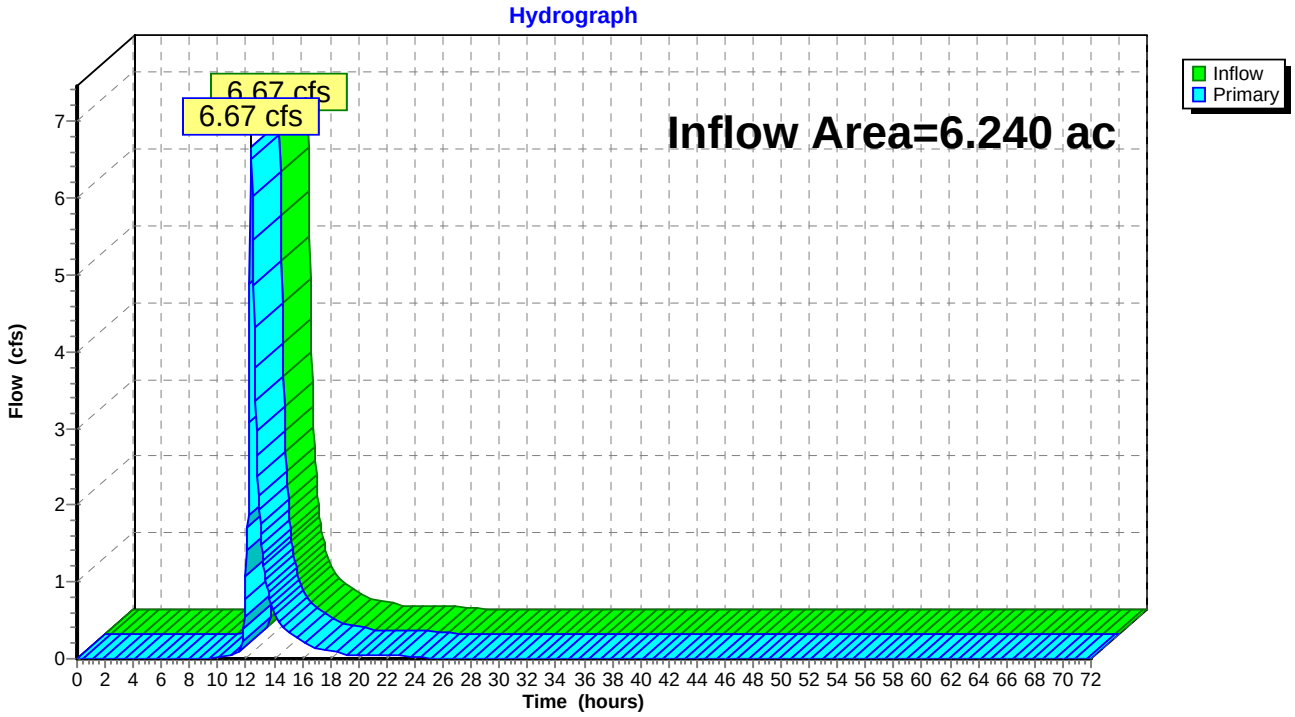


Summary for Link 18L: Total

Inflow Area = 6.240 ac, 35.10% Impervious, Inflow Depth = 0.99" for 10-year event
Inflow = 6.67 cfs @ 12.36 hrs, Volume= 0.513 af
Primary = 6.67 cfs @ 12.36 hrs, Volume= 0.513 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 18L: Total



Summary for Subcatchment 12S: DA-1 Pre-Treatment Basin

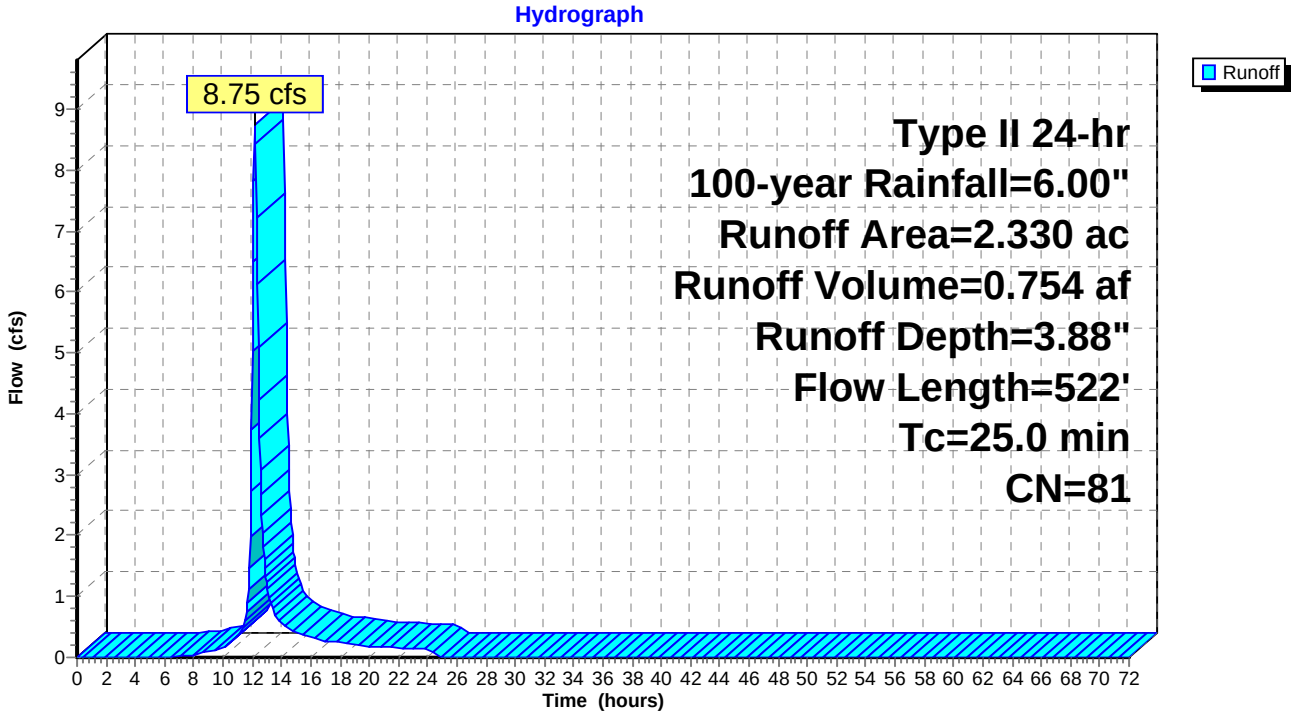
Runoff = 8.75 cfs @ 12.18 hrs, Volume= 0.754 af, Depth= 3.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.00"

	Area (ac)	CN	Description
*	0.210	98	Impervious
	0.400	80	>75% Grass cover, Good, HSG D
*	1.720	79	Woods, Fair, HSG D
	2.330	81	Weighted Average
	2.120		90.99% Pervious Area
	0.210		9.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	100	0.0350	0.09		**Sheet Flow, Woods- Sheet** Woods: Light underbrush n= 0.400 P2= 2.47"
5.5	422	0.0660	1.28		**Shallow Concentrated Flow, Woods- Shallow** Woodland Kv= 5.0 fps
25.0	522	Total			

Subcatchment 12S: DA-1 Pre-Treatment Basin



Summary for Subcatchment 13S: DA-3 Infiltration Basin

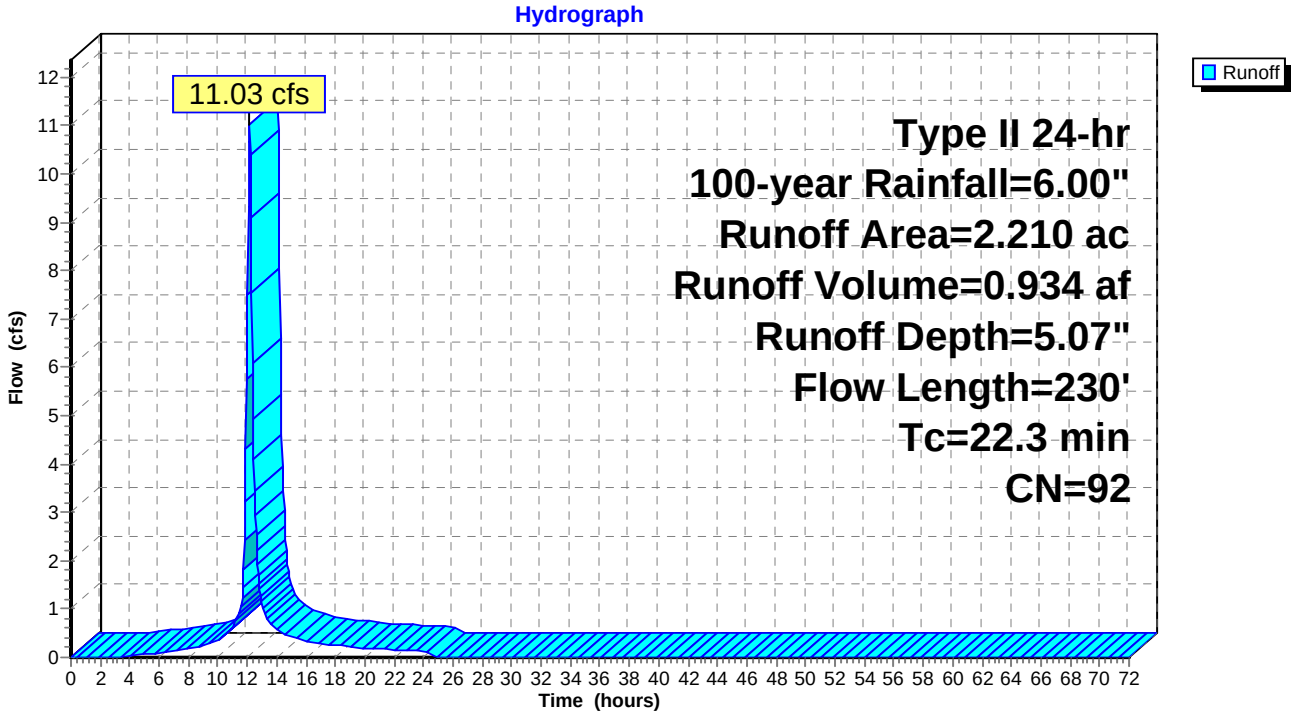
Runoff = 11.03 cfs @ 12.14 hrs, Volume= 0.934 af, Depth= 5.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.00"

	Area (ac)	CN	Description
*	1.520	98	Impervious
	0.600	80	>75% Grass cover, Good, HSG D
*	0.090	79	Woods, Fair, HSG D
	2.210	92	Weighted Average
	0.690		31.22% Pervious Area
	1.520		68.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	100	0.0300	0.08		**Sheet Flow, Sheet Flow Woods** Woods: Light underbrush n= 0.400 P2= 2.47"
1.5	130	0.0400	1.40		**Shallow Concentrated Flow, Shallow grass** Short Grass Pasture Kv= 7.0 fps
22.3	230	Total			

Subcatchment 13S: DA-3 Infiltration Basin



Summary for Subcatchment 15S: DA-2 Infiltration Bioretention

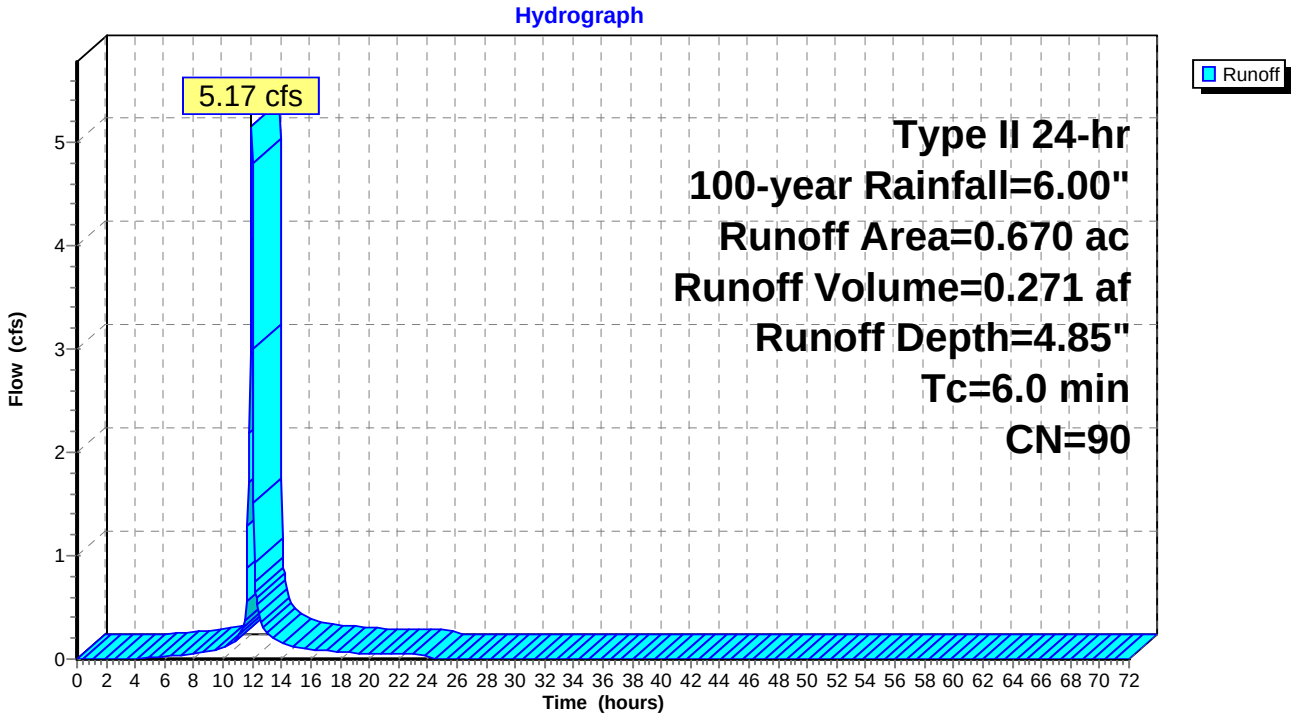
Runoff = 5.17 cfs @ 11.96 hrs, Volume= 0.271 af, Depth= 4.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.00"

	Area (ac)	CN	Description
*	0.390	98	Impervious
	0.280	80	>75% Grass cover, Good, HSG D
*	0.000	79	Woods, Fair, HSG D
	0.670	90	Weighted Average
	0.280		41.79% Pervious Area
	0.390		58.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 15S: DA-2 Infiltration Bioretention



Summary for Subcatchment 16S: DA-4 Undetained

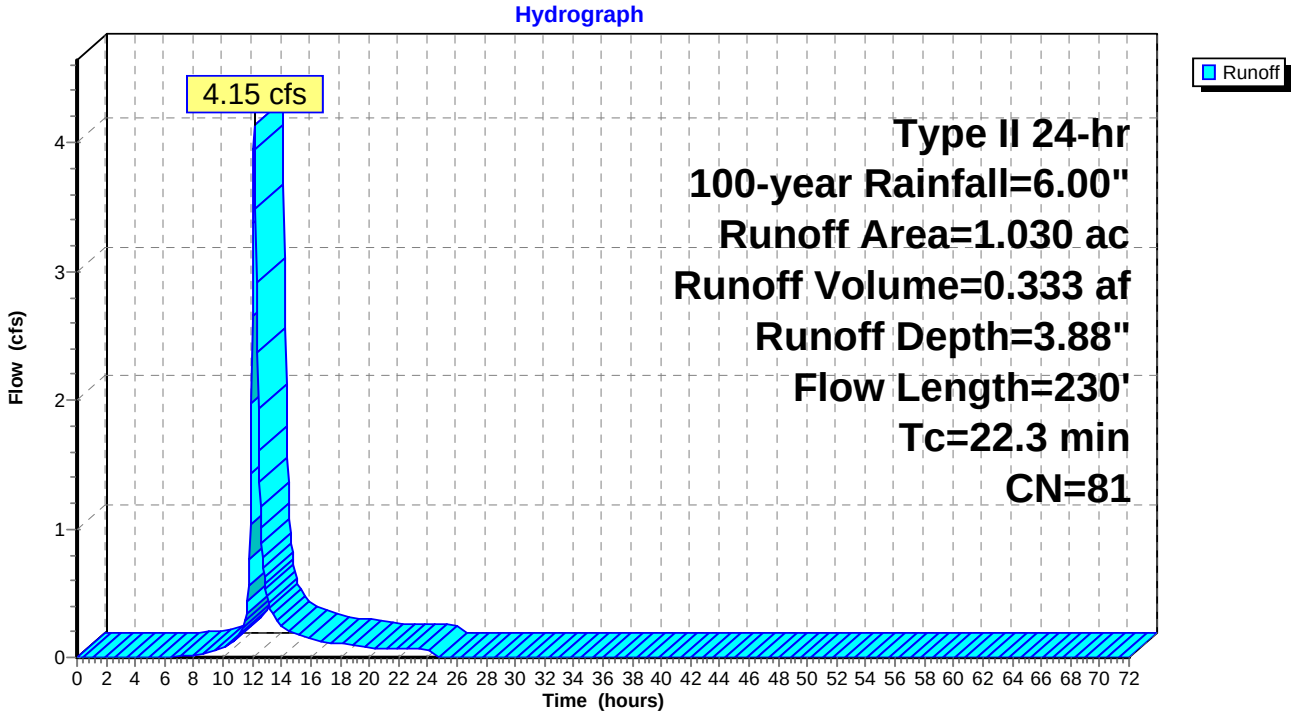
Runoff = 4.15 cfs @ 12.15 hrs, Volume= 0.333 af, Depth= 3.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.00"

	Area (ac)	CN	Description
*	0.070	98	Impervious
	0.960	80	>75% Grass cover, Good, HSG D
*	0.000	79	Woods, Fair, HSG D
	1.030	81	Weighted Average
	0.960		93.20% Pervious Area
	0.070		6.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	100	0.0300	0.08		**Sheet Flow, Sheet Woods** Woods: Light underbrush n= 0.400 P2= 2.47"
1.5	130	0.0400	1.40		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
22.3	230	Total			

Subcatchment 16S: DA-4 Undetained



Summary for Pond 14P: Infiltration Basin

Inflow Area = 5.210 ac, 40.69% Impervious, Inflow Depth = 4.21" for 100-year event
Inflow = 21.36 cfs @ 12.13 hrs, Volume= 1.826 af
Outflow = 17.78 cfs @ 12.26 hrs, Volume= 1.826 af, Atten= 17%, Lag= 7.9 min
Discarded = 0.37 cfs @ 12.26 hrs, Volume= 0.544 af
Primary = 17.41 cfs @ 12.26 hrs, Volume= 1.282 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 1,014.67' @ 12.26 hrs Surf.Area= 5,652 sf Storage= 17,799 cf

Plug-Flow detention time= 118.4 min calculated for 1.825 af (100% of inflow)
Center-of-Mass det. time= 118.8 min (929.1 - 810.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	26,083 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

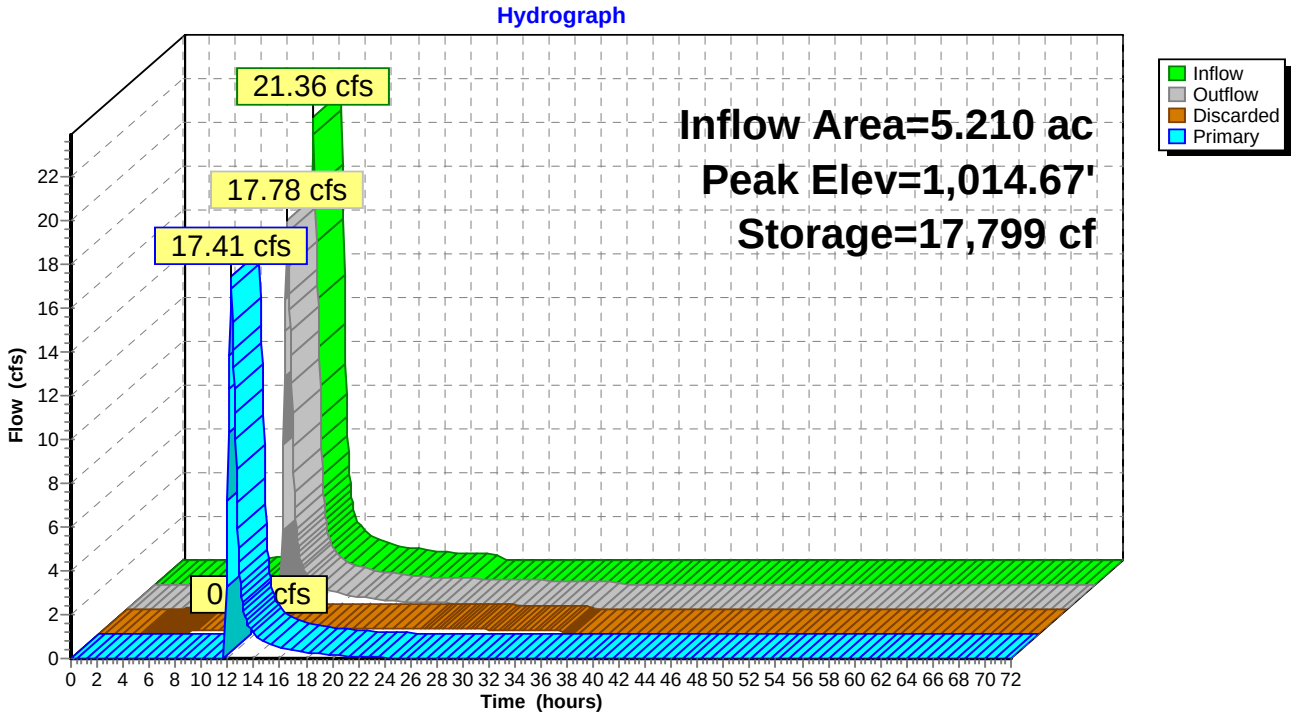
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	2,164	0	0
1,011.00	2,804	2,484	2,484
1,012.00	3,506	3,155	5,639
1,013.00	4,255	3,881	9,520
1,014.00	5,075	4,665	14,185
1,015.00	5,932	5,504	19,688
1,016.00	6,857	6,395	26,083

Device	Routing	Invert	Outlet Devices
#1	Primary	1,010.00'	**24.0" Round Culvert** L= 68.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,010.00' / 1,009.00' S= 0.0147 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Discarded	1,010.00'	**2.800 in/hr Exfiltration over Surface area**
#3	Device 1	1,012.60'	**30.0" W x 12.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	1,014.50'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.37 cfs @ 12.26 hrs HW=1,014.67' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.37 cfs)

Primary OutFlow Max=17.21 cfs @ 12.26 hrs HW=1,014.67' (Free Discharge)
└**1=Culvert** (Passes 17.21 cfs of 22.87 cfs potential flow)
  ├**3=Orifice/Grate** (Orifice Controls 15.00 cfs @ 6.00 fps)
  └**4=Orifice/Grate** (Weir Controls 2.21 cfs @ 1.33 fps)

Pond 14P: Infiltration Basin



Summary for Pond 15P: Pre-Treatment Basin

Inflow Area = 2.330 ac, 9.01% Impervious, Inflow Depth = 3.88" for 100-year event
Inflow = 8.75 cfs @ 12.18 hrs, Volume= 0.754 af
Outflow = 8.75 cfs @ 12.19 hrs, Volume= 0.673 af, Atten= 0%, Lag= 0.7 min
Primary = 8.75 cfs @ 12.19 hrs, Volume= 0.673 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 1,019.96' @ 12.19 hrs Surf.Area= 1,919 sf Storage= 4,031 cf

Plug-Flow detention time= 78.1 min calculated for 0.672 af (89% of inflow)
Center-of-Mass det. time= 24.3 min (850.4 - 826.1)

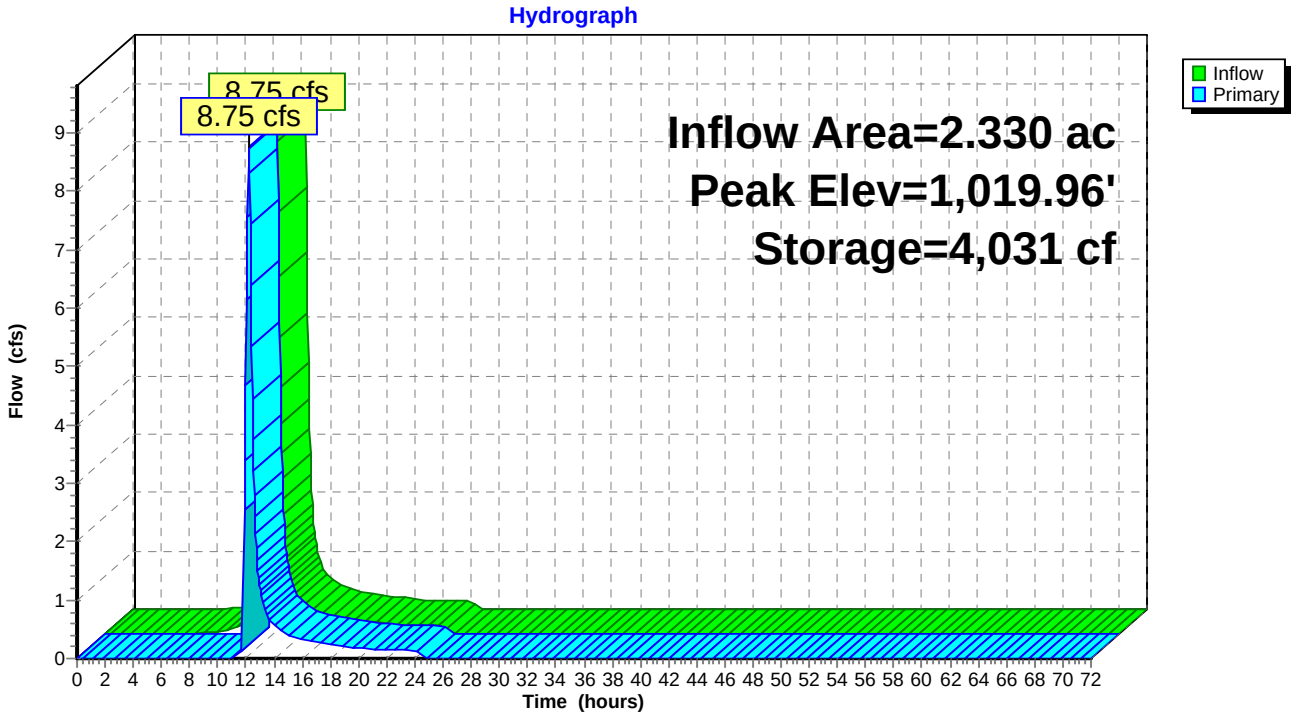
Volume	Invert	Avail.Storage	Storage Description
#1	1,017.00'	6,259 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,017.00	856	0	0
1,018.00	1,176	1,016	1,016
1,019.00	1,535	1,356	2,372
1,020.00	1,934	1,735	4,106
1,021.00	2,371	2,153	6,259

Device	Routing	Invert	Outlet Devices
#1	Primary	1,019.70'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 1.30 Width (feet) 20.00 20.00

Primary OutFlow Max=8.70 cfs @ 12.19 hrs HW=1,019.96' (Free Discharge)
1=Custom Weir/Orifice (Weir Controls 8.70 cfs @ 1.67 fps)

Pond 15P: Pre-Treatment Basin



Summary for Pond 19P: Infiltration Bioretention Area

Inflow Area = 0.670 ac, 58.21% Impervious, Inflow Depth = 4.85" for 100-year event
Inflow = 5.17 cfs @ 11.96 hrs, Volume= 0.271 af
Outflow = 4.69 cfs @ 12.00 hrs, Volume= 0.271 af, Atten= 9%, Lag= 2.3 min
Discarded = 0.03 cfs @ 12.00 hrs, Volume= 0.051 af
Primary = 4.65 cfs @ 12.00 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 1,017.06' @ 12.00 hrs Surf.Area= 1,336 sf Storage= 1,177 cf

Plug-Flow detention time= 48.6 min calculated for 0.270 af (100% of inflow)
Center-of-Mass det. time= 48.8 min (830.2 - 781.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,016.00'	2,661 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

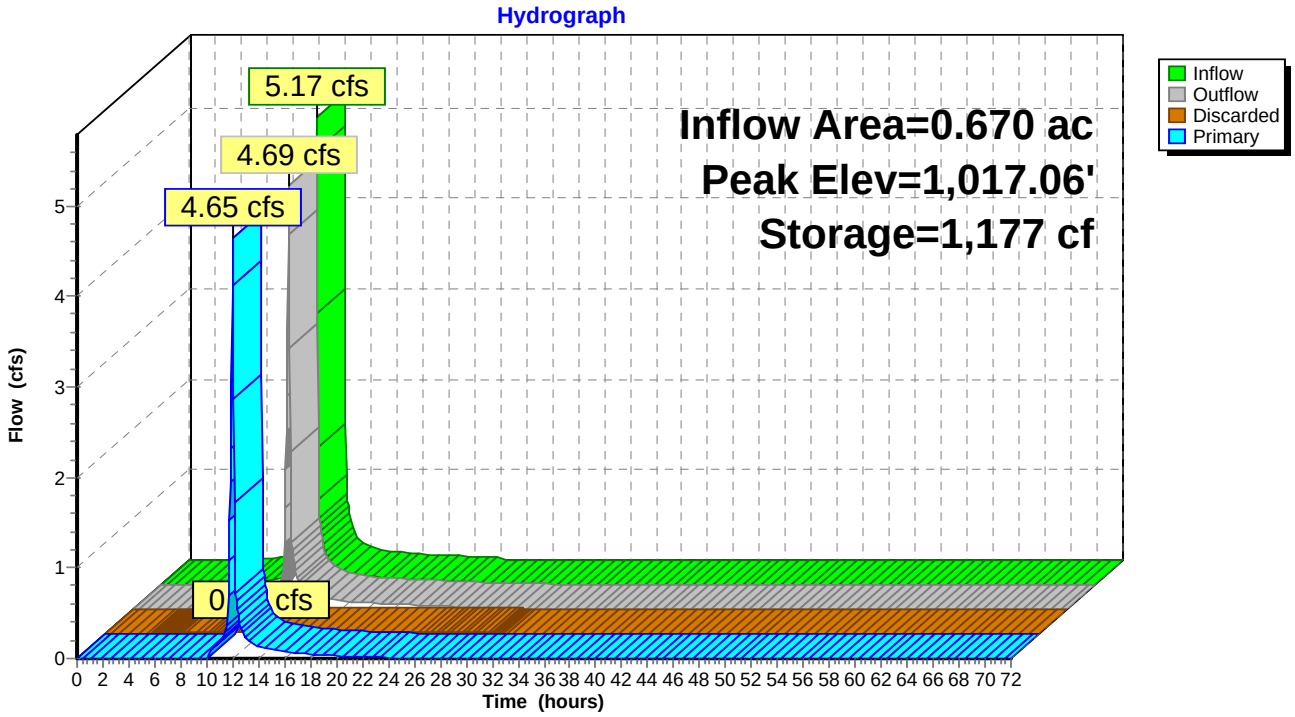
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,016.00	897	0	0
1,017.00	1,307	1,102	1,102
1,018.00	1,810	1,559	2,661

Device	Routing	Invert	Outlet Devices
#1	Primary	1,016.00'	**24.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 1,016.00' / 1,015.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Discarded	1,016.00'	**1.000 in/hr Exfiltration over Surface area**
#3	Device 1	1,016.50'	**36.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.00 hrs HW=1,017.06' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=4.64 cfs @ 12.00 hrs HW=1,017.05' (Free Discharge)
↑**1=Culvert** (Inlet Controls 4.64 cfs @ 2.76 fps)
↑**3=Orifice/Grate** (Passes 4.64 cfs of 13.51 cfs potential flow)

Pond 19P: Infiltration Bioretention Area

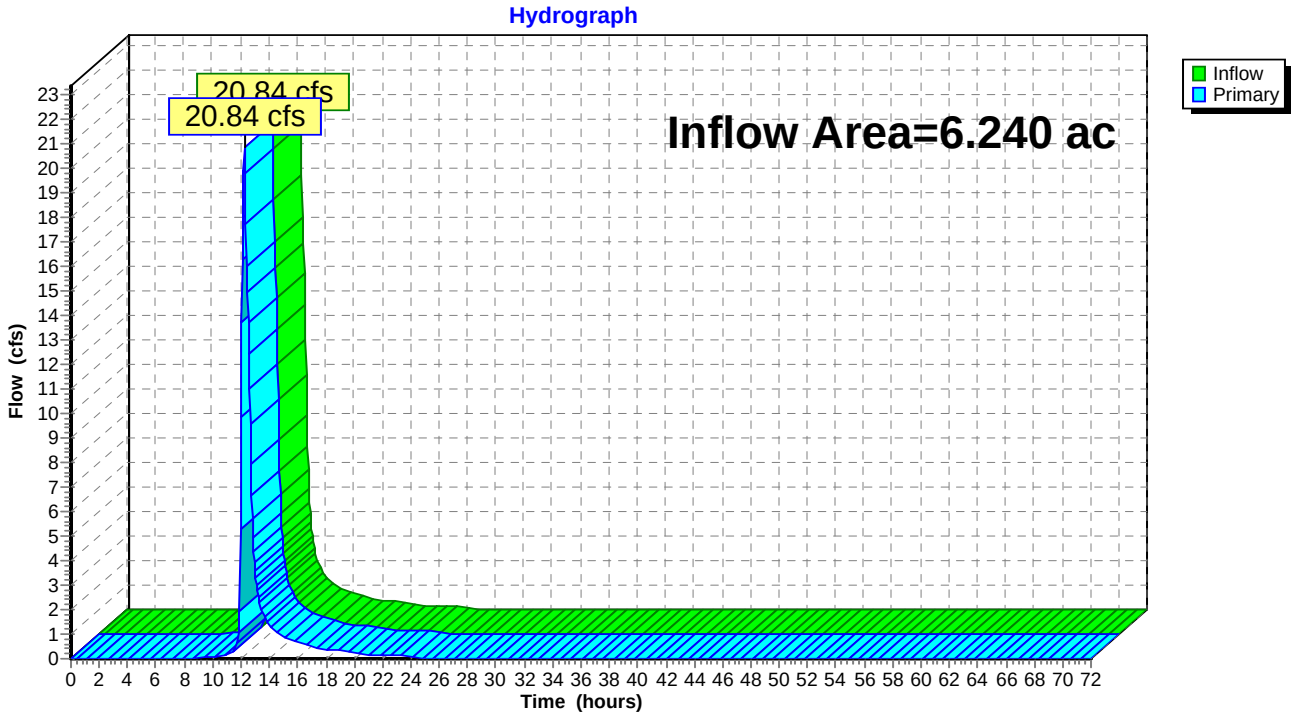


Summary for Link 18L: Total

Inflow Area = 6.240 ac, 35.10% Impervious, Inflow Depth = 3.11" for 100-year event
Inflow = 20.84 cfs @ 12.25 hrs, Volume= 1.616 af
Primary = 20.84 cfs @ 12.25 hrs, Volume= 1.616 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 18L: Total



CME Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

Transmittal

May 16, 2016

M&R Entities, LLC
117 Horizon Drive
Ithaca, New York 14850

Attn: Mr. Gary Sloan, Owner

Re: Evergreen Townhomes Project at 1061 Dryden Road
Ithaca, New York
CME Project No.: 27131-05

Gentlepeople:

Enclosed you will find….

Number of Copies	Report Number/Description
3	27131B-01-0516/Geotechnical Services Report

This report was emailed to Mr. Gary Sloan at squeakygs@gmail.com on 05/16/16.

Respectfully submitted,
CME Associates, Inc.

Matt Hurst, Ph.D., EIT
Staff Engineer

MH.bms

A New York State Certified Woman-Owned Business Enterprise (WBE)

CME Associates, Inc.

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May 16, 2016

M&R Entities, LLC
117 Horizon Drive
Ithaca, New York 14850

Attn: Mr. Gary Sloan, Owner

Re: Infiltration Testing and Test Pit Services for the
Evergreen Townhomes Project at 1061 Dryden Road
Ithaca, New York
CME Report No.: 27131B-01-0516

Gentlepeople:

1.0 INTRODUCTION

CME Associates, Inc. (CME) was retained by M&R Entities, LLC (Client) to provide Infiltration Testing and Test Pit services for the Evergreen Townhomes Project at 1061 Dryden Road in Ithaca, New York. CME staff witnessed the excavation of 8 Test Pits, and then conducted 6 Infiltration Tests. Test Pits were excavated by a subcontractor to CME. This report has been provided pursuant to CME's Proposal/Agreement number 05.4852, executed by Mr. Gary Sloan, Owner with Client on 05/06/16. A summary of CME's work, commencing on 05/12/16 is presented herein. The Infiltration Test Reports, Test Pit Logs, an Exploration Location Sketch, and Test Pit Photographs are attached.

2.0 METHODS

The Test Pit locations were staked in the field by CME, at locations selected by others. CME contacted Dig Safely New York (DSNY) at least three business days in advance of the exploration program. Elevation at grade was estimated to the nearest ½ foot utilizing existing contour lines on a Concept Grading Map, labeled L001, provided by HOLT Architects, P.C.

The Test Pits were excavated and backfilled by CME's Subcontractor, Sherman Vincent on 05/12/16 using a Case CX80 backhoe, equipped with a 24" wide general purpose bucket, in the presence of the undersigned Engineer. The Test Pits were backfilled with the excavated material, and the surface was repaired to nearly match existing grade. Please refer to the Test Pit Logs, labeled TP-1 through TP-8, for further details.

Adjacent to Test Pits TP-1 through TP-6, an Infiltration Test casing was installed by excavating to approximately 6 feet below grade and then installing a 4" O.D. PVC casing. Infiltration Tests were performed at depths selected by others, in general conformance with New York State Stormwater Management Design Manual, Appendix D: Infiltration Testing Requirements. The test details and results are given in the attached Infiltration Test Reports, labeled IT-1 through IT-6.

3.0 CLOSING

CME's services are provided according to the requirements of the referenced CME Proposal/Agreement. No other representations, expressed or implied, are intended or made with respect to the information provided herein, and including but not limited to, its suitability for use by others.

Please do not hesitate to contact our office if you have any questions regarding this report, its conclusions and recommendations.

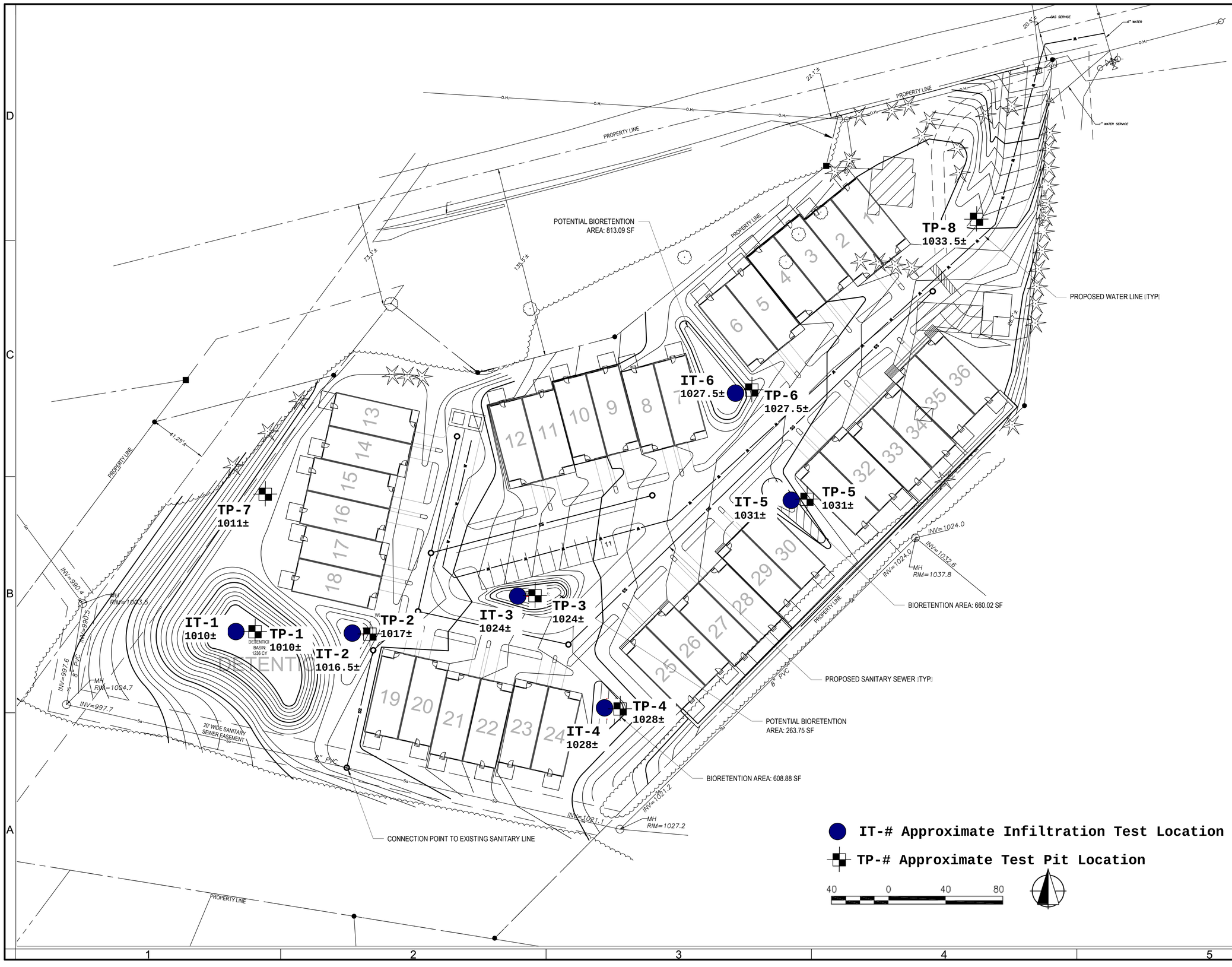
Respectfully Submitted,
CME Associates, Inc.

_____

Matt Hurst, Ph.D., EIT
Staff Engineer

Attachment Listing:

Exploration Location Sketch, ELS-1 (1 of 1)
Infiltration Test Reports, IT-1 through IT-6 (6 of 6)
CME Subsurface Exploration-Test Pit Logs, TP-1 through TP-8 (8 of 8)
Test Pit Photographs (8 of 8)
General Information & Key to Test Boring Logs (4 of 4)



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Client
Town of Dryden, New York

1061 DRYDEN ROAD TOWNHOUSES

DATE:	05/03/2016
PROJECT:	2016012
DRAWN BY:	MAA
CHECKED:	MGS

Exploration Location Sketch

ELS-1

INFILTRATION TEST REPORT

Test ID: IT-1

Project:	Evergreen Townhomes at 1061 Dryden Road, Ithaca, New York	CME Report No.:	27131B-01-0516
		Test Date:	05/13/16
Client:	M&R Entities, LLC	Test Location:	See Exploration Location Sketch
		Technician:	A. Boronczyk

Test Preparation and Dimensions

Casing installed in : ☑ Test Pit ☐ Borehole

Casing diameter and type: 4 inch I.D. PVC

A Existing grade elevation (ft): ..... 1010.0 ±

B Casing stickup length above grade (ft): 1.1

C Top of casing elevation (ft): ..... (A+B)= 1011.1 ±

D Depth to bottom of test hole, below top of casing (ft): 7.2

E Bottom of test hole elevation: ..... (C-D)= 1003.9 ±

Burmister classification of soil at bottom of hole: Brown mottled SILT, some cmf SAND, little CLAY, trace cmf GRAVEL

Thickness and type of scour/sediment protection layer installed: 3" of Pea Gravel

Date and time pre-soaked: ..... 05/12/16 Time: 12:50

Depth to water level, below top of casing

Just after pre-soak filling (in): 62.5

Just prior to first test filling (in): 70.0 Date: 5/13/16 Time: 13:07

Test Observations

Run 1			Run 2			Run 3			Run 4		
Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)
13:29	0:00	62.0	14:29	0:00	61.8	15:29	0:00	62.0	16:29	0:00	61.5
13:30	0:01	62.0	14:34	0:05	61.8	15:34	0:05	62.3	16:34	0:05	61.5
13:31	0:02	62.0	14:39	0:10	62.0	15:39	0:10	62.3	16:39	0:10	62.0
13:33	0:04	62.0	14:44	0:15	62.3	15:44	0:15	62.8	16:44	0:15	62.3
13:34	0:05	62.3	14:59	0:30	63.0	15:59	0:30	63.0	16:59	0:30	63.0
13:39	0:10	62.5	15:14	0:45	63.5	16:14	0:45	64.0	17:14	0:45	63.5
13:49	0:20	62.8	15:29	1:00	64.8	16:29	1:00	64.8	17:29	1:00	64.3
13:59	0:30	63.3									
14:14	0:45	64.0									
14:29	1:00	64.8									

Test Results

Run:	Run 1	Run 2	Run 3	Run 4
Infiltration Rate (inch/hour):	2.8	3.0	2.8	2.8

Final Infiltration Rate (inch/hour): 2.8

☐ Based on average of all four runs

☑ Based on result of last run

Note(s)

1. Test performed in general conformance with NYS Stormwater Management Design Manual, Appendix D: Infiltration Testing Requirements.
2. Test location and elevation selected by Others.

INFILTRATION TEST REPORT

Test ID: IT-2

Project:	Evergreen Townhomes at 1061 Dryden Road, Ithaca, New York	CME Report No.:	27131B-01-0516
		Test Date:	05/13/16
Client:	M&R Entities, LLC	Test Location:	See Exploration Location Sketch
		Technician:	A. Boronczyk

Test Preparation and Dimensions

Casing installed in : ☑ Test Pit ☐ Borehole

Casing diameter and type: 4 inch I.D. PVC

A	Existing grade elevation (ft):		1016.5	±
B	Casing stickup length above grade (ft):		1.8	
C	Top of casing elevation (ft):	(A+B)=	1018.3	±
D	Depth to bottom of test hole, below top of casing (ft):		7.9	
E	Bottom of test hole elevation:	(C-D)=	1010.4	±

Burmister classification of soil at bottom of hole: Brown SILT and cmf SAND, little cmf GRAVEL, trace COBBLES

Thickness and type of scour/sediment protection layer installed: 3" of Pea Gravel

Date and time pre-soaked: ..... 05/12/16 Time: 12:45

Depth to water level, below top of casing

Just after pre-soak filling (in): 71.0

Just prior to first test filling (in): None Note Date: 5/13/16 Time: 13:09

Test Observations

Run 1			Run 2			Run 3			Run 4		
Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)
13:22	0:00	70.0	14:22	0:00	71.0	15:22	0:00	70.0	16:22	0:00	70.8
13:23	0:01	70.3	14:23	0:01	71.5	15:23	0:01	70.5	16:23	0:01	71.0
13:24	0:03	71.0	14:24	0:02	71.8	15:24	0:02	71.0	16:24	0:02	71.5
13:25	0:03	72.0	14:26	0:04	73.0	15:26	0:04	71.8	16:26	0:04	72.5
13:28	0:06	74.0	14:28	0:06	74.3	15:29	0:07	73.3	16:28	0:06	73.8
13:32	0:10	77.3	14:32	0:10	76.8	15:32	0:10	76.3	16:32	0:10	77.0
13:37	0:15	82.0	14:37	0:15	77.8	15:37	0:15	79.5	16:37	0:15	80.0
13:52	0:30	85.0	14:52	0:30	83.5	15:52	0:30	83.8	16:52	0:30	83.3
14:07	0:45	87.5	15:07	0:45	85.8	16:07	0:45	86.3	17:07	0:45	85.8
14:22	1:00	88.8	15:22	1:00	87.5	16:22	1:00	87.5	17:22	1:00	87.3

Test Results

Run:	Run 1	Run 2	Run 3	Run 4
Infiltration Rate (inch/hour):	18.8	16.5	17.5	16.5

Final Infiltration Rate (inch/hour): 16.5

☐ Based on average of all four runs

☑ Based on result of last run

Note(s)

1. Test performed in general conformance with NYS Stormwater Management Design Manual, Appendix D: Infiltration Testing Requirements.
2. Test location and elevation selected by Others.

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INFILTRATION TEST REPORT

Test ID: IT-3

Project:	Evergreen Townhomes at 1061 Dryden Road, Ithaca, New York	CME Report No.:	27131B-01-0516
		Test Date:	05/13/16
Client:	M&R Entities, LLC	Test Location:	See Exploration Location Sketch
		Technician:	A. Boronczyk

Test Preparation and Dimensions

Casing installed in : ☑ Test Pit ☐ Borehole

Casing diameter and type: 4 inch I.D. PVC

A	Existing grade elevation (ft):		1024.0	±
B	Casing stickup length above grade (ft):		0.7	
C	Top of casing elevation (ft):	(A+B)=	1024.7	±
D	Depth to bottom of test hole, below top of casing (ft):		6.6	
E	Bottom of test hole elevation:	(C-D)=	1018.1	±

Burmister classification of soil at bottom of hole: Brown mottled SILT, little cmf SAND, little CLAY

Thickness and type of scour/sediment protection layer installed: 3" of Pea Gravel

Date and time pre-soaked: ..... 05/12/16 Time: 13:00

Depth to water level, below top of casing

Just after pre-soak filling (in): 55.0

Just prior to first test filling (in): 69.3 Date: 5/13/16 Time: 13:09

Test Observations

Run 1			Run 2			Run 3			Run 4		
Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)
13:10	0:00	55.0	14:10	0:00	54.3	15:10	0:00	54.8	16:10	0:00	55.0
13:12	0:02	55.0	14:15	0:05	54.3	15:15	0:05	54.8	16:15	0:05	55.0
13:13	0:03	55.0	14:20	0:10	54.5	15:20	0:10	54.8	16:20	0:10	55.0
13:15	0:05	55.0	14:25	0:15	54.5	15:25	0:15	55.0	16:25	0:15	55.3
13:20	0:10	55.3	14:40	0:30	54.8	15:40	0:30	55.3	16:40	0:30	55.5
13:25	0:15	55.3	14:55	0:45	55.0	15:55	0:45	55.5	16:55	0:45	55.8
13:40	0:30	55.5	15:10	1:00	55.3	16:10	1:00	55.8	17:10	1:00	56.0
13:55	0:45	55.8									
14:10	1:00	56.3									

Test Results

Run:	Run 1	Run 2	Run 3	Run 4
Infiltration Rate (inch/hour):	1.3	1.0	1.0	1.0

Final Infiltration Rate (inch/hour): 1.0

☐ Based on average of all four runs

☑ Based on result of last run

Note(s)

1. Test performed in general conformance with NYS Stormwater Management Design Manual, Appendix D: Infiltration Testing Requirements.
2. Test location and elevation selected by Others.

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INFILTRATION TEST REPORT

Test ID: IT-4

Project:	Evergreen Townhomes at 1061 Dryden Road, Ithaca, New York	CME Report No.:	27131B-01-0516
		Test Date:	05/13/16
Client:	M&R Entities, LLC	Test Location:	See Exploration Location Sketch
		Technician:	A. Boronczyk

Test Preparation and Dimensions

Casing installed in : ☑ Test Pit ☐ Borehole

Casing diameter and type: 4 inch I.D. PVC

A	Existing grade elevation (ft):		1028.0	±
B	Casing stickup length above grade (ft):		1.6	
C	Top of casing elevation (ft):	(A+B)=	1029.6	±
D	Depth to bottom of test hole, below top of casing (ft):		7.4	
E	Bottom of test hole elevation:	(C-D)=	1022.2	±

Burmister classification of soil at bottom of hole: Brown SILT, some mf SAND, some CLAY

Thickness and type of scour/sediment protection layer installed: 3" of Pea Gravel

Date and time pre-soaked: ..... 05/12/16 Time: 12:45

Depth to water level, below top of casing

Just after pre-soak filling (in): 65.0

Just prior to first test filling (in): 66.0 Date: 5/13/16 Time: 8:45

Test Observations

Run 1			Run 2			Run 3			Run 4		
Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)
8:47	0:00	64.0	9:47	0:00	64.0	10:47	0:00	64.0	11:47	0:00	64.0
8:48	0:01	64.0	10:02	0:15	64.0	11:02	0:15	64.0	12:02	0:15	64.3
8:49	0:02	64.0	10:17	0:30	64.0	11:17	0:30	64.0	12:17	0:30	64.3
8:52	0:05	64.0	10:32	0:45	64.0	11:32	0:45	64.0	12:32	0:45	64.3
9:01	0:14	64.0	10:47	1:00	64.0	11:47	1:00	64.0	12:47	1:00	64.3
9:17	0:30	64.0									
9:32	0:45	64.0									
9:47	1:00	64.0									

Test Results

Run:	Run 1	Run 2	Run 3	Run 4
Infiltration Rate (inch/hour):	0.0	0.0	0.0	0.3

Final Infiltration Rate (inch/hour): 0.1

☑ Based on average of all four runs

☐ Based on result of last run

Note(s)

1. Test performed in general conformance with NYS Stormwater Management Design Manual, Appendix D: Infiltration Testing Requirements.
2. Test location and elevation selected by Others.

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INFILTRATION TEST REPORT

Test ID: IT-5

Project:	Evergreen Townhomes at 1061 Dryden Road, Ithaca, New York	CME Report No.:	27131B-01-0516
		Test Date:	05/13/16
Client:	M&R Entities, LLC	Test Location:	See Exploration Location Sketch
		Technician:	A. Boronczyk

Test Preparation and Dimensions

Casing installed in : ☑ Test Pit ☐ Borehole

Casing diameter and type: 4 inch I.D. PVC

A	Existing grade elevation (ft):		1031.0	±
B	Casing stickup length above grade (ft):		1.5	
C	Top of casing elevation (ft):	(A+B)=	1032.5	±
D	Depth to bottom of test hole, below top of casing (ft):		7.4	
E	Bottom of test hole elevation:	(C-D)=	1025.1	±

Burmister classification of soil at bottom of hole: Light Brown mottled SILT, some mf SAND, little CLAY

Thickness and type of scour/sediment protection layer installed: 3" of Pea Gravel

Date and time pre-soaked: ..... 05/12/16 Time: 12:45

Depth to water level, below top of casing

Just after pre-soak filling (in): 65.0

Just prior to first test filling (in): 81.0 Date: 5/13/16 Time: 8:45

Test Observations

Run 1			Run 2			Run 3			Run 4		
Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)
9:05	0:00	65.0	10:05	0:00	65.3	11:05	0:00	65.5	12:05	0:00	65.8
9:06	0:01	65.0	10:20	0:15	65.3	11:20	0:15	65.5	12:20	0:15	65.8
9:07	0:02	65.0	10:35	0:30	65.3	11:35	0:30	65.5	12:35	0:30	65.8
9:08	0:03	65.0	10:50	0:45	65.5	11:50	0:45	65.5	12:50	0:45	65.8
9:10	0:05	65.0	11:05	1:00	65.5	12:05	1:00	65.8	13:05	1:00	66.0
9:15	0:10	65.0									
9:20	0:15	65.0									
9:35	0:30	65.0									
9:50	0:45	65.3									
10:05	1:00	65.3									

Test Results

Run:	Run 1	Run 2	Run 3	Run 4
Infiltration Rate (inch/hour):	0.3	0.2	0.3	0.2

Final Infiltration Rate (inch/hour): 0.3

☑ Based on average of all four runs

☐ Based on result of last run

Note(s)

1. Test performed in general conformance with NYS Stormwater Management Design Manual, Appendix D: Infiltration Testing Requirements.
2. Test location and elevation selected by Others.

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INFILTRATION TEST REPORT

Test ID: IT-6

Project:	Evergreen Townhomes at 1061 Dryden Road, Ithaca, New York	CME Report No.:	27131B-01-0516
		Test Date:	05/13/16
Client:	M&R Entities, LLC	Test Location:	See Exploration Location Sketch
		Technician:	A. Boronczyk

Test Preparation and Dimensions

Casing installed in : ☑ Test Pit ☐ Borehole

Casing diameter and type: 4 inch I.D. PVC

A	Existing grade elevation (ft):		1027.5	±
B	Casing stickup length above grade (ft):		1.9	
C	Top of casing elevation (ft):	(A+B)=	1029.4	±
D	Depth to bottom of test hole, below top of casing (ft):		8	
E	Bottom of test hole elevation:	(C-D)=	1021.4	±

Burmister classification of soil at bottom of hole: Brown SILT, some CLAY, some cmf SAND, trace cmf GRAVEL

Thickness and type of scour/sediment protection layer installed: 3" of Pea Gravel

Date and time pre-soaked: ..... 05/12/16 Time: 13:05

Depth to water level, below top of casing

Just after pre-soak filling (in): 72.0

Just prior to first test filling (in): 75.0 Date: 5/13/16 Time: 8:55

Test Observations

Run 1			Run 2			Run 3			Run 4		
Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)	Real Time (hh:mm)	Elapsed Time (h:mm)	Depth to water level, below top of casing (in)
8:58	0:00	71.0	9:58	0:00	71.0	10:58	0:00	71.3	11:58	0:00	71.3
9:03	0:05	71.0	10:13	0:15	71.0	11:13	0:15	71.3	12:13	0:15	71.5
9:10	0:12	71.0	10:28	0:30	71.0	11:28	0:30	71.3	12:28	0:30	71.5
9:13	0:15	71.0	10:43	0:45	71.0	11:43	0:45	71.3	12:43	0:45	71.5
9:28	0:30	71.0	10:58	1:00	71.3	11:58	1:00	71.3	13:00	1:02	71.5
9:43	0:45	71.0									
9:58	1:00	71.0									

Test Results

Run:	Run 1	Run 2	Run 3	Run 4
Infiltration Rate (inch/hour):	0.0	0.3	0.0	0.2

Final Infiltration Rate (inch/hour): 0.1

☑ Based on average of all four runs

☐ Based on result of last run

Note(s)

1. Test performed in general conformance with NYS Stormwater Management Design Manual, Appendix D: Infiltration Testing Requirements.
2. Test location and elevation selected by Others.

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CME Associates, Inc.

6035 Corporate Drive
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TEST PIT LOG

Project: Evergreen Townhomes at 1061 Dryden Road		**Report No.:**	27131B-01-0516
Ithaca, New York		**Location of Test Pit:**	See Exploration Location Sketch
Client: M&R Entities, LLC		**Ground Elevation:**	1010 ± (*See Remark 2*)
		Date	**Start:** 05-12-16 **Finish:** 05-12-16
Test Pit No. TP-1	Sheet 1 of 1	**Representative:**	M. Hurst

Ground Water Observations

Date	Time	Depth
05-12-16	9:55 AM	None Noted *(See Remark 3)*

DEPTH (Feet)	SAMPLE NUMBER	DEPTH OF SAMPLE FROM (FEET)	DEPTH OF SAMPLE TO (FEET)	DEPTH OF CHANGE (FEET)	NOTES OR PIT PROFILE	CLASSIFICATION OF MATERIAL
0				0.7		Dark Brown Topsoil and Organic Matter, little ROOTS (moist, easy digging)
				2.0		Brown cmf SAND and SILT, some cmf GRAVEL, trace COBBLES (moist, medium hard digging)
5				6.6		Brown Mottled SILT, some cmf SAND, little CLAY, trace cmf GRAVEL (moist, medium hard digging) *See Remark 4*
10						Brown SILT and fine SAND, trace CLAY (wet, medium hard digging)
						Bottom of Test Pit @ 8.1'

f - FINE and 35-50%
m - MEDIUM some 20-35%
c - COARSE little 10-20%
trace 0-10%

REMARKS:

1. This test pit was excavated by Sherman Vincent utilizing a Case CX80 backhoe equipped with a 24" wide all-purpose bucket.
2. Elevation at grade was estimated to the nearest 0.5 feet utilizing existing contour lines on a Concept Grading Map, labeled L001, provided by HOLT Architects, P.C.
3. A small amount of perched water began to seep in very slowly at about 7.5'.
4. Clay lenses were noted throughout.

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TEST PIT LOG

Project: Evergreen Townhomes at 1061 Dryden Road		**Report No.:**	27131B-01-0516
Ithaca, New York		**Location of Test Pit:**	See Exploration Location Sketch
Client: M&R Entities, LLC		**Ground Elevation:**	1017 ± (*See Remark 2*)
		Date	**Start:** 05-12-16 **Finish:** 05-12-16
Test Pit No. TP-2	Sheet 1 of 1	**Representative:**	M. Hurst

Ground Water Observations

Date	Time	Depth
05-12-16	9:25 AM	None Noted

DEPTH (Feet)	SAMPLE NUMBER	DEPTH OF SAMPLE FROM (FEET)	DEPTH OF SAMPLE TO (FEET)	DEPTH OF CHANGE (FEET)	NOTES OR PIT PROFILE	CLASSIFICATION OF MATERIAL
						f - FINE and 35-50% m - MEDIUM some 20-35% c - COARSE little 10-20% trace 0-10%
0				0.5		Dark Brown Topsoil and Organic Matter, trace ROOTS (moist, easy digging)
				2.9		Brown cmf SAND, some SILT, some cmf GRAVEL, trace COBBLES, trace ROOT HAIRS (moist to wet, medium hard digging)
				3.7		Brown CLAY, some SILT, little mf SAND (moist, medium hard digging)
5				5.8		Brown SILT and cmf SAND, little cmf GRAVEL, trace COBBLES (moist to wet, medium hard digging)
						Brown SILT and fine SAND, trace CLAY (wet, medium hard digging) *See Remark 3*
10						Bottom of Test Pit @ 8.1'

REMARKS:

1. This test pit was excavated by Sherman Vincent utilizing a Case CX80 backhoe equipped with a 24" wide all-purpose bucket.
2. Elevation at grade was estimated to the nearest 0.5 feet utilizing existing contour lines on a Concept Grading Map, labeled L001, provided by HOLT Architects, P.C.
3. Small Silty Clay lenses were present.

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TEST PIT LOG

Project: Evergreen Townhomes at 1061 Dryden Road		**Report No.:**	27131B-01-0516
Ithaca, New York		**Location of Test Pit:**	See Exploration Location Sketch
Client: M&R Entities, LLC		**Ground Elevation:**	1024 ± (*See Remark 2*)
		Date	**Start:** 05-12-16 **Finish:** 05-12-16
Test Pit No. TP-3	Sheet 1 of 1	**Representative:**	M. Hurst

Ground Water Observations

Date	Time	Depth
05-12-16	9:00 AM	None Noted

DEPTH (Feet)	SAMPLE NUMBER	DEPTH OF SAMPLE FROM (FEET)	DEPTH OF SAMPLE TO (FEET)	DEPTH OF CHANGE (FEET)	NOTES OR PIT PROFILE	CLASSIFICATION OF MATERIAL
0				0.5		Dark Brown Topsoil and Organic Matter, little ROOTS (moist, easy digging)
				1.9		Light Brown cmf SAND, some SILT, some cmf GRAVEL, trace COBBLES, trace ROOT HAIRS (moist, medium hard digging)
5				6.5		Brown Mottled SILT, little cmf SAND, little CLAY (moist, medium hard digging) *See Remark 3*
						Brown Similar Soil (moist to wet, hard digging) *See Remark 4*
10						Bottom of Test Pit @ 8.8’

f - FINE and 35-50%
m - MEDIUM some 20-35%
c - COARSE little 10-20%
trace 0-10%

REMARKS:

1. This test pit was excavated by Sherman Vincent utilizing a Case CX80 backhoe equipped with a 24” wide all-purpose bucket.
2. Elevation at grade was estimated to the nearest 0.5 feet utilizing existing contour lines on a Concept Grading Map, labeled L001, provided by HOLT Architects, P.C.
3. Small Silty Clay lenses were present.
4. Lenses of Silty fine Sand were observed within these depths that were saturated.

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TEST PIT LOG

Project: Evergreen Townhomes at 1061 Dryden Road		**Report No.:**	27131B-01-0516
Ithaca, New York		**Location of Test Pit:**	See Exploration Location Sketch
Client: M&R Entities, LLC		**Ground Elevation:**	1028 ± (*See Remark 2*)
		Date	**Start:** 05-12-16 **Finish:** 05-12-16
Test Pit No. TP-4	Sheet 1 of 1	**Representative:**	M. Hurst

Ground Water Observations

Date	Time	Depth
05-12-16	8:30 AM	None Noted *(See Remark 3)*

DEPTH (Feet)	SAMPLE NUMBER	DEPTH OF SAMPLE FROM (FEET)	DEPTH OF SAMPLE TO (FEET)	DEPTH OF CHANGE (FEET)	NOTES OR PIT PROFILE	CLASSIFICATION OF MATERIAL
0				0.8		Dark Brown Topsoil and Organic Matter, trace ROOTS (moist, easy digging)
				2.7		Brown cmf SAND, some SILT, little mf GRAVEL (moist, medium hard digging)
5				7.8		Brown SILT, some mf SAND, some CLAY (moist, medium hard digging) *See Remark 4*
10						Brown fine SAND, little SILT (wet to saturated, hard digging) Bottom of Test Pit @ 8.4'

f - FINE and 35-50%
m - MEDIUM some 20-35%
c - COARSE little 10-20%
trace 0-10%

REMARKS:

1. This test pit was excavated by Sherman Vincent utilizing a Case CX80 backhoe equipped with a 24" wide all-purpose bucket.
2. Elevation at grade was estimated to the nearest 0.5 feet utilizing existing contour lines on a Concept Grading Map, labeled L001, provided by HOLT Architects, P.C.
3. Insufficient time to determine level of groundwater due to low porosity of soils.
4. Silty Clay lenses were noted throughout.

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TEST PIT LOG

Project: Evergreen Townhomes at 1061 Dryden Road		**Report No.:**	27131B-01-0516
Ithaca, New York		**Location of Test Pit:**	See Exploration Location Sketch
Client: M&R Entities, LLC		**Ground Elevation:**	1031 ± (*See Remark 2*)
		Date	**Start:** 05-12-16 **Finish:** 05-12-16
Test Pit No. TP-5	Sheet 1 of 1	**Representative:**	M. Hurst

Ground Water Observations

Date	Time	Depth
05-12-16	8:00 AM	None Noted

DEPTH (Feet)	SAMPLE NUMBER	DEPTH OF SAMPLE FROM (FEET)	DEPTH OF SAMPLE TO (FEET)	DEPTH OF CHANGE (FEET)	NOTES OR PIT PROFILE	CLASSIFICATION OF MATERIAL
0				0.8		Dark Brown Topsoil and Organic Matter, trace ROOT HAIRS (moist, easy digging)
				2.9		Brown cmf SAND, some SILT, little cmf GRAVEL (moist, medium hard digging)
5				5.0		Light Brown Mottled SILT, some mf SAND, little CLAY (moist, medium hard digging) *See Remark 3*
10						Brown SILT, some CLAY, little mf SAND (moist, medium hard digging)
						Bottom of Test Pit @ 8.0'

f - FINE and 35-50%
m - MEDIUM some 20-35%
c - COARSE little 10-20%
trace 0-10%

REMARKS:

1. This test pit was excavated by Sherman Vincent utilizing a Case CX80 backhoe equipped with a 24" wide all-purpose bucket.
2. Elevation at grade was estimated to the nearest 0.5 feet utilizing existing contour lines on a Concept Grading Map, labeled L001, provided by HOLT Architects, P.C.
3. Clay lenses were noted throughout.

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TEST PIT LOG

Project: Evergreen Townhomes at 1061 Dryden Road		**Report No.:**	27131B-01-0516
Ithaca, New York		**Location of Test Pit:**	See Exploration Location Sketch
Client: M&R Entities, LLC		**Ground Elevation:**	1027.5 ± (*See Remark 2*)
		Date	**Start:** 05-12-16 **Finish:** 05-12-16
Test Pit No. TP-6	Sheet 1 of 1	**Representative:**	M. Hurst

Ground Water Observations

Date	Time	Depth
05-12-16	9:50 AM	None Noted

DEPTH (Feet)	SAMPLE NUMBER	DEPTH OF SAMPLE FROM (FEET)	DEPTH OF SAMPLE TO (FEET)	DEPTH OF CHANGE (FEET)	NOTES OR PIT PROFILE	CLASSIFICATION OF MATERIAL
						f - FINE and 35-50% m - MEDIUM some 20-35% c - COARSE little 10-20% trace 0-10%
0				0.7		Dark Brown Topsoil and Organic Matter, trace ROOTS (moist, easy digging)
				2.2		Brown cmf SAND, some SILT, some cmf GRAVEL (moist, medium hard digging)
				4.2		Brown SILT, little CLAY, little mf SAND (moist, medium hard digging) *See Remark 3*
5				6.8		Brown SILT, some CLAY, some cmf SAND, trace cmf GRAVEL (moist, medium hard digging)
						Brown Similar Soil (wet, medium hard digging)
10						Bottom of Test Pit @ 8.4’

REMARKS:

1. This test pit was excavated by Sherman Vincent utilizing a Case CX80 backhoe equipped with a 24” wide all-purpose bucket.
2. Elevation at grade was estimated to the nearest 0.5 feet utilizing existing contour lines on a Concept Grading Map, labeled L001, provided by HOLT Architects, P.C.
3. Lenses of Clay noted throughout.

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TEST PIT LOG

Project: Evergreen Townhomes at 1061 Dryden Road		**Report No.:**	27131B-01-0516
Ithaca, New York		**Location of Test Pit:**	See Exploration Location Sketch
Client: M&R Entities, LLC		**Ground Elevation:**	1011 ± (*See Remark 2*)
		Date	**Start:** 05-12-16 **Finish:** 05-12-16
Test Pit No. TP-7	Sheet 1 of 1	**Representative:**	M. Hurst

Ground Water Observations

Date	Time	Depth
05-12-16	10:30 AM	9.9'
		(See Remark 3)

DEPTH (Feet)	SAMPLE NUMBER	DEPTH OF SAMPLE FROM (FEET)	DEPTH OF SAMPLE TO (FEET)	DEPTH OF CHANGE (FEET)	NOTES OR PIT PROFILE	CLASSIFICATION OF MATERIAL
						f - FINE and 35-50% m - MEDIUM some 20-35% c - COARSE little 10-20% trace 0-10%
0				0.6		Dark Brown Topsoil and Organic Matter, trace ROOTS (moist, easy digging)
				2.6		Brown cmf SAND, some cmf GRAVEL, some SILT (moist, medium hard digging)
				4.0		Brown SILT, some CLAY, some cmf SAND, trace mf GRAVEL, trace COBBLES (moist, medium hard digging)
5				7.8		Brown SILT, some fine SAND, little cmf GRAVEL, little CLAY (moist to wet, medium hard digging)
						Grey Similar Soil (wet, medium hard digging) *See Remark 4*
10						Bottom of Test Pit @ 10.0'

REMARKS:

1. This test pit was excavated by Sherman Vincent utilizing a Case CX80 backhoe equipped with a 24" wide all-purpose bucket.
2. Elevation at grade was estimated to the nearest 0.5 feet utilizing existing contour lines on a Concept Grading Map, labeled L001, provided by HOLT Architects, P.C.
3. Perched water began seeping in from sides between 2.6' – 7.8'.
4. Small amount of water began to seep into bottom of Test Pit at a very slow rate.

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TEST PIT LOG

Project: Evergreen Townhomes at 1061 Dryden Road		**Report No.:**	27131B-01-0516
Ithaca, New York		**Location of Test Pit:**	See Exploration Location Sketch
Client: M&R Entities, LLC		**Ground Elevation:**	1033.5 ± (*See Remark 2*)
		Date	**Start:** 05-12-16 **Finish:** 05-12-16
Test Pit No. TP-8	Sheet 1 of 1	**Representative:**	M. Hurst

Ground Water Observations

Date	Time	Depth
05-12-16	11:45 AM	None Noted

DEPTH (Feet)	SAMPLE NUMBER	DEPTH OF SAMPLE FROM (FEET)	DEPTH OF SAMPLE TO (FEET)	DEPTH OF CHANGE (FEET)	NOTES OR PIT PROFILE	CLASSIFICATION OF MATERIAL
						f - FINE and 35-50% m - MEDIUM some 20-35% c - COARSE little 10-20% trace 0-10%
0				0.5		Dark Brown Topsoil and Organic Matter (moist, easy digging)
				2.0		Brown cmf SAND, some SILT, little cmf GRAVEL, trace COBBLES (moist, medium hard digging)
5				6.1		Brown SILT and CLAY, some cmf SAND, little mf GRAVEL, trace COBBLES (moist, medium hard digging) *See Remark 3*
10						Brown Similar Soil (moist to wet, medium hard digging)
						Bottom of Test Pit @ 10.0'

REMARKS:

1. This test pit was excavated by Sherman Vincent utilizing a Case CX80 backhoe equipped with a 24" wide all-purpose bucket.
2. Elevation at grade was estimated to the nearest 0.5 feet utilizing existing contour lines on a Concept Grading Map, labeled L001, provided by HOLT Architects, P.C.
3. Clay lenses were noted throughout this layer.

Photographs 1 and 2 (Top): Profiles of Test Pit TP-1. Photograph 3 (Bottom Left): Side Profile of Test Pit TP-1. Photograph 4 (Bottom Right): Spoil Pile from Test Pit TP-1.

Photographs 5 and 6 (Top): Profiles of Test Pit TP-2. Photograph 7 (Bottom Left): Side Profile of Test Pit TP-2. Photograph 8 (Bottom Right): Spoil Pile from Test Pit TP-2.




Photographs 9 and 10 (Top): Profiles of Test Pit TP-3. Photograph 11 (Bottom Left): Side Profile of Test Pit TP-3. Photograph 12 (Bottom Right): Spoil Pile from Test Pit TP-3.

Photographs 13 and 14 (Top): Profiles of Test Pit TP-4. Photograph 15 (Bottom Left): Side Profile of Test Pit TP-4. Photograph 16 (Bottom Right): Spoil Pile from Test Pit TP-4.

Photographs 17 and 18 (Top): Profiles of Test Pit TP-5. Photograph 19 (Bottom Left): Side Profile of Test Pit TP-5. Photograph 20 (Bottom Right): Spoil Pile from Test Pit TP-5.

Photographs 21 and 22 (Top): Profiles of Test Pit TP-6. Photograph 23 (Bottom Left): Side Profile of Test Pit TP-6. Photograph 24 (Bottom Right): Spoil Pile from Test Pit TP-6.

Photographs 25 and 26 (Top): Profiles of Test Pit TP-7. Photographs 27 (Bottom Left): Profile of Test Pit TP-7. At 10:30 AM water began to slowly seep in from sides and bottom of Test Pit. Photograph 28 (Bottom Right): Spoil Pile from Test Pit TP-7.

Photographs 29 and 30 (Top): Profiles of Test Pit TP-8. Photographs 31 (Bottom Left): Profile of Test Pit TP-8. Photograph 32 (Bottom Right): Spoil Pile from Test Pit TP-8.

GENERAL INFORMATION & KEY TO TEST BORING LOGS

The **Subsurface Exploration - Test Boring Logs produced by CME Associates, Inc.** present the observations and mechanical data collected by the driller while at the site, supplemented, at times, by classification of the materials removed from the borings as determined through visual identification by technicians in the laboratory. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Exploration Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the proposed construction. The evaluation must consider all the recorded details and their significance relative to each other. Often, analyses of standard boring data indicate the need for additional testing and sampling procedures to more accurately evaluate the subsurface conditions. Any evaluations of the contents of CME's report and the recovered samples must be performed by Licensed Professionals having experience in Soil Mechanics and Foundation Engineering. The information presented in this Key defines some of the procedures and terms used on the CME Exploration Logs to describe the conditions encountered. Refer to the Log on page 3 for key number.

Key No.	Description

1. The figures in the **DEPTH SCALE** column define the vertical scale of the Boring Log.

2. **CASING BLOWS/FOOT** - shows the number of blows required to advance the casing a distance of 12 inches. The casing size, the hammer weight and the length of drop are noted under the **Methods of Investigation**. If the casing is advanced by means other than driving, the method of advancement will be indicated under **Methods of Investigation** at the top of the Log. If Hollow Stem Augers or Coring is used, it will be so noted in this column.

3. The **SAMPLE I.D.** is used for identification on the sample containers and in the Laboratory Test Report or Summary.

4. The **DEPTH OF SAMPLE** column gives the exact depth range from which a sample was recovered.

5. The **SAMPLE TYPE/RECOVERY** column is used to signify the various type of sample attempt. "SS" is Split Spoon, "P" is piston tube, "U" is Undisturbed tube. For soil samples, the recovered length of the sample is also indicated, in inches. If a rock core sample is taken, the core bit size designation is given here.

6. **BLOWS ON SAMPLER** - shows the results of the "Standard Penetration Test (SPT) ASTM D1586", recording the number of blows required to drive a split spoon sampler into the soil beneath the casing. The number of blows required for each six inches of penetration is recorded. The total number of blows required for the 6 inch to 18 inch interval is summarized in the **SPT "N"** column and represents the "Standard Penetration Number". The outside diameter of the sampler, the hammer weight and the length of drop are noted in the **Methods of Investigation** portion of the log. A "WH" or "WR" in this column indicates that the sample spoon advanced the 6 inch interval under Weight of Hammer or Weight of Rods, respectively.

7. The **DEPTH OF CHANGE** column designates the depth (in feet) that the driller noted a compactness or stratum change. In soft materials or soil strata exhibiting a consistent relative density, it is difficult for the driller to determine the exact change from one stratum to the next. In addition, a grading or gradual change may exist. In such cases the depth noted is approximate or estimated only and may be represented by a dashed line.

8. **CLASSIFICATION OF MATERIAL - Soil materials** encountered and sampled are described by the driller on the original log. Notes of driller observations are also placed in this column. Recovered samples may also be visually classified by a Soil Technician upon receipt in the Laboratory. Visual sample classification is by Burmister System and strata may be classified additionally by the Unified System. The Burmister System is a type of visual-manual textural classification estimated by the Driller or Technician on the basis of weight-fraction of the recovered soil. See Table 1 **"Classification of Materials"**. The description of the relative soil compactness or consistency is based upon the standard penetration number as defined in Table 2. The description of the soil moisture condition is described as dry, moist, wet, or saturated. Water used to advance the boring may have affected the in-situ moisture content of the sample. Special terms are used as required to describe materials in greater detail, such terms are listed in ASTM D653. When sampling gravelly soils with a standard two-inch O.D. Split Spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders, cobbles, and large gravel is sometimes, but not necessarily, detected by an evaluation of the casing and sampler blows or through the "action" of the drill rig as reported by the driller.

8. **CLASSIFICATION OF MATERIAL** (continued)
The Description of **Rock** is based upon the recovered rock core. Terms frequently used in the description are included in Table 3. The length of core run is defined as length of penetration between retreivals of the corebarrel from the bore hole, expressed in inches. The core recovery expresses the length of core recovered from the core barrel per core run, in percent. The size core barrel used is noted in **Column 5**. The more commonly used sizes of core barrels are denoted "AX" and "NX". An "NX" core, being larger in diameter than "AX" core, often produces better recovery, and is frequently utilized where accurate information regarding the geologic conditions and engineering properties is needed. A better estimate of in-situ rock quality is provided by a *modified core recovery ratio* known as the **"Rock Quality Designation" (RQD)**. This ratio is determined by considering only pieces of core that are at least 4 inches long and are hard and sound. Breaks obviously caused by drilling are ignored. The diameter of the core should preferably be not less than 2 inches (NX). The percentage ratio between the total length of such core recovered and the length of core drilled on a given run is the RQD. Table 4 gives the rock quality description as related to the **RQD**.

9. The **SPT "N" or RQD** is given in this column as applicable to the specific sample taken. In Very Compact coarse grained soils the N-value may be indicated as 50+, and in Hard fine-grained soils the N-value may be indicated as 30+. This typically means that the blow count was achieved prior to driving the sampler the entire 6 inch interval or the sampler refused further penetration. For "NX" rock cores, the RQD is reported here, expressed in percent.

10. **GROUND WATER OBSERVATIONS** and timing noted by the driller are shown in this section. It is important to realize that the reliability of the water level observations depend upon the soil type (water does not readily stabilize in a hole through fine grained soils), and that drill water used to advance the borings may have influenced the observations. Ground water levels typically fluctuate seasonally so those noted on the log are only representative of that exhibited during the period of time noted on the log. One or more perched or trapped water levels may exist in the ground seasonally. All the available readings should be evaluated. If definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or ground water observation well installations.

TABLE 1 - VISUAL CLASSIFICATION OF MATERIALS (BURMISTER)

GROUP	TEXTURAL CLASSIFICATION SIZES
BOULDERS	larger than 12" diameter
COBBLES	12" diameter to 3" sieve
GRAVEL	3" - coarse - 1" - medium - 1/2" - fine - #4 sieve
SAND	#4 - coarse - #10 - medium - #40 - fine - #200 sieve
SILT	#200 sieve (0.074mm) to 0.005mm size (see below *)
CLAY	0.005mm size to 0.001mm size (see below *)

ABBREVIATIONS	PERCENT OF TOTAL SAMPLE BY WEIGHT	
f - fine	and	35 to 50%
m - medium	some	20 to 35%
c - coarse	little	10 to 20%
	trace	0 to 10%

***PLASTICITY DESCRIPTIONS**

TERM	PLASTICITY INDEX	DRY STRENGTH	FIELD TEST
Non-plastic	0 - 3	Very low	falls apart easily
Slightly plastic	4 - 15	Slight	easily crushed by fingers
Plastic	15 - 30	Medium	difficult to crush
Highly plastic	31 or more	High	impossible to crush with fingers

*TABLE 2 - DESCRIPTION OF SOIL COMPACTNESS OR CONSISTENCY based on SPT "N"**		
Primary Soil Type	**Descriptive Term of Compactness**	**Range of Standard Penetration Resistance (N)**
COARSE GRAINED SOILS	Very loose	less than 4 blows per foot
(More than half of Material is larger than No. 200 sieve size.)	Loose	4 to 10
	Medium compact	10 to 30
	Compact	30 to 50
	Very compact	Greater than 50
FINE GRAINED SOILS	**Descriptive Term of Consistency**	**Range of Standard Penetration Resistance (N)**
(More than half of material is smaller than No. 200 sieve size.)	Very soft	less than 2 blows per foot
	Soft	2 to 4
	Medium stiff	4 to 8
	Stiff	8 to 15
	Very stiff	15 to 30
	Hard	Greater than 30
*The number of blows of 140 pound weight falling 30 inches to drive 2 inch O.D., 1-3/8 inch I.D. sampler 12 inches is defined as the Standard Penetration Resistance designated "N".		

TABLE 3 - ROCK CLASSIFICATION TERMS		
Rock Classification Terms		**Field Test or Meaning of Term**
Hardness	Soft	Scratched by fingernail
	Medium Hard	Scratched easily by penknife
	Hard	Scratched with difficulty by penknife
	Very Hard	Cannot be scratched by penknife
Weathering	Very Weathered Weathered Sound	Judged from the relative amounts of disintegration, iron staining, core recovery, clay seams, etc.
Bedding (Natural Breaks in Rock Layers)	Laminated Thinly bedded Bedded Thickly bedded Massive	less than 1inch 1inch to 4 inches 4 inches to 12 inches 12 inches to 36 inches greater than 36 inches

TABLE 4 Relation of Rock Quality Designation (RQD) and in-situ Rock Quality	
RQD (%)	**Rock Quality Term Used**
90 to 100	Excellent
75 to 90	Good
50 to 75	Fair
25 to 50	Poor
0 to 25	Very Poor

BORING NO.: B-1 Page 1 of 1

SUBSURFACE EXPLORATION - TEST BORING LOG

Project: **Report No.:**

Client: **Date Started:** **Finished:**

Location of Boring: **Elevation of Surface of Boring:**

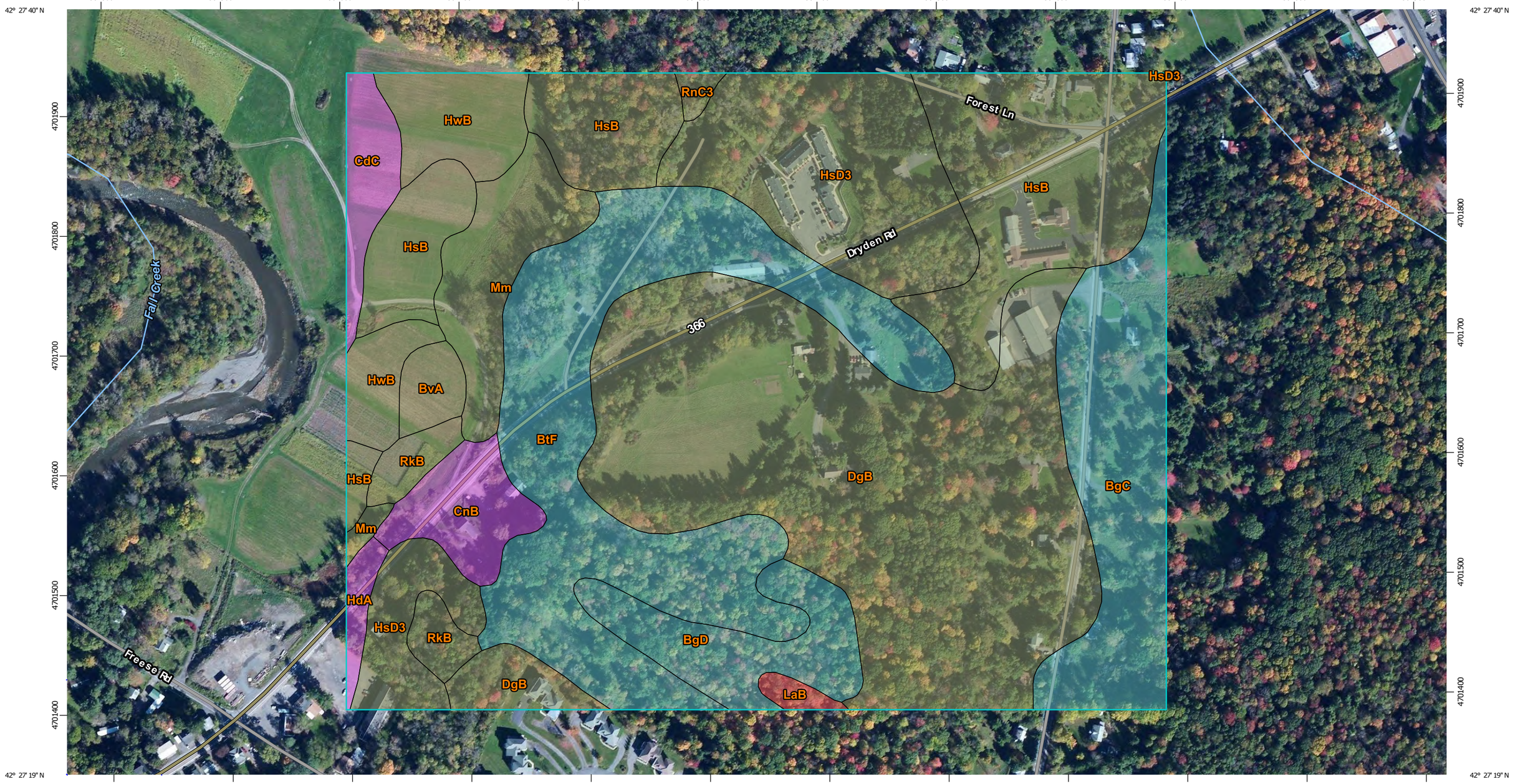
METHODS OF INVESTIGATION	GROUND WATER OBSERVATIONS			
Casing: 3-1/4" I.D. Hollow Stem Auger **Hammer:**	Date	Time	Depth	Casing At
Other:		While drilling		
Soil Sampler: 2" O.D. Split Barrel **Rod Size:**		Before casing removed		
Sampler Hammer: **Wt.** 140 lbs. **Fall:** 30 in.		After casing removed		
Make & Model of Drill Rig:				

LOG OF BORING SAMPLES							CLASSIFICATION OF MATERIAL		
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	To	Sample Type/ Recovery (inches)	Blows on Sampler Per 6 inches	Depth of Change (feet)	f - fine m - medium c - coarse	and - 35 to 50% some - 20 to 35% little - 10 to 20% trace - 0 to 10%	STP "N" or RQD
1	2	3	4	4	5	6	7	8		9

Denotes Key Number (see page 1)

APPENDIX D:
SOILS MAP

Hydrologic Soil Group—Tompkins County, New York



Map Scale: 1:3,110 if printed on B landscape (17" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Soil Rating Lines

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

Soil Rating Points

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

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Tompkins County, New York
Survey Area Data: Version 10, Sep 24, 2015

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

Date(s) aerial images were photographed: Jun 2, 2010—Oct 8, 2010

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

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Tompkins County, New York (NY109)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
BgC	Bath and Valois soils, 5 to 15 percent slopes	C	7.8	8.6%
BgD	Bath and Valois soils, 15 to 25 percent slopes, eroded	C	3.5	3.9%
BtF	Bath, Valois, and Lansing soils, 35 to 60 percent slopes	C	15.1	16.6%
BvA	Braceville gravelly silt loam, 0 to 5 percent slopes	C/D	0.9	1.0%
CdC	Chenango gravelly loam, 5 to 15 percent slopes	A	1.6	1.7%
CnB	Chenango gravelly loam, fan, 0 to 8 percent slopes	A	2.2	2.5%
DgB	Darien gravelly silt loam, 2 to 8 percent slopes	C/D	25.8	28.5%
HdA	Howard gravelly loam, 0 to 5 percent slopes	A	0.6	0.6%
HsB	Hudson silty clay loam, 2 to 6 percent slopes	C/D	13.5	14.9%
HsD3	Hudson silty clay loam, 12 to 20 percent slopes, eroded	C/D	10.4	11.4%
HwB	Hudson and Collamer silt loams, 2 to 6 percent slopes	C/D	3.5	3.9%
LaB	Langford channery silt loam, 2 to 8 percent slopes	D	0.3	0.4%
Mm	Madalin mucky silty clay loam	C/D	3.7	4.1%
RkB	Rhinebeck silt loam, 2 to 6 percent slopes	C/D	1.4	1.6%
RnC3	Rhinebeck silty clay loam, 6 to 12 percent slopes, eroded	C/D	0.3	0.3%
Totals for Area of Interest			**90.6**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX E:
CONTRACT DRAWINGS

(TO BE INCLUDED AT A LATER DATE)

APPENDIX F:
PROJECT TECHNICAL SPECIFICATIONS

(TO BE INCLUDED AT A LATER DATE)

APPENDIX G:
INSPECTION AND MAINTENANCE FORMS

SPDES STORMWATER INSPECTION FORM

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

Required Elements:

(1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

(4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

(5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

(6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SPDES STORMWATER INSPECTION FORM

Job Stamp

Date of Inspection: _____

Day of Week: | S | M | T | W | T | F | S |

Sheet No._____ of Sheets_____

If pertinent to the Operation	
Weather	
Temperature	

This inspection and maintenance form is to be used on contracts covered by SPDES General Permit for Construction Activity (GP–0-15–002). Inspections must be performed at least once every seven calendar days, twice every seven calendar days if more than 5 acres are disturbed or within 24 hours after a rainfall of ½ inch or more in a 24 hour period (contractor only). Each erosion and sediment control measure installed on the site is to be inspected and the Contractor must complete all required maintenance within three calendar days from the date of inspection. The completed inspection form must be filed in the Owner's Field Office.

□ Seven Calendar Day Inspection
□ Second Seven Calendar Day Inspection
□ Received ½" or more of rain in a 24hour period (contractor Only)

Codes for erosion and sediment control measures to be inspected: [Use the following codes in the table below] (1) mulch, (2) seed and mulch, (3) check dams, (4) haybale/strawbales, (5) silt fence, 6) sediment trap, (7) turbidity curtains, (8) pipe slope drains, (9) drainage structure inlet protection, 10) rolled erosion control products, (11) soil stabilizers, (12) construction entrances, (13) pipe inlet/outlet protection, (14) water diversion structures, (15) sedimentation basins, (16) cofferdams, (17) Other _____

Feature ID	Distrubance		Measure		Remarks	Approx Sediment Accumulation	Maintenance required
	Existing	Next 14 days?	Code #	Temp or Perm			

SPDES STORMWATER INSPECTION FORM

Feature ID	Distrubance		Measure		Remarks	Approx Sediment Accumulation	Maintenance required
	Existing	Next 14 days?	Code #	Temp or Perm			

_____ _____

Inspector (print name) Date of Inspection

_____ _____

Qualified Professional (print name) Qualified Professional Signature

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

Stage of construction (% complete): _____%

On a plan/sketch that represents the project area or on a site map:

1. Indicate the extent of all disturbed site areas and drainage pathways;
2. Indicate site areas that are expected to undergo initial disturbance or significant site work in the next 14 days.
3. Indicate all areas of the site that have undergone temporary or permanent stabilization.
4. Indicate all disturbed areas that have not undergone site work during the previous 14 days.

SITE PLAN/SKETCH
SEE ATTACHED SHEET

Bioretention Operation, Maintenance and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
2. Vegetation (Monthly)		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)		
No evidence of sediment buildup		

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
4. Dewatering (Monthly)		
Dewaters between storms		
No evidence of standing water		
5. Sediment Deposition (Annual)		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
6. Outlet/Overflow Spillway (Annual, After Major Storms)		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
7. Integrity of Filter Bed (Annual)		
Filter bed has not been blocked or filled inappropriately		

Comments:

Actions to be Taken:

APPENDIX H:
CONTRACTORS CERTIFICATION STATEMENT

CONTRACTOR CERTIFICATION FORM

Evergreen Townhomes
Town of Dryden
Tompkins County, NY

In accordance with the requirements of the SPDES General Permit for Construction Activity (GP-0-15-002) each contractor and subcontractor involved in earth disturbance activities, soil and erosion control practices and post-construction stormwater management activities shall sign this certification acknowledging that they have read, understand, and agree to comply with the terms of the SWPPP. The certification shall be signed by a principal or president of the firm, and the trained individual who will be responsible for the SWPPP implementation.

"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 most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I 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."

PRINT NAME: _____

COMPANY: _____

ADDRESS: _____

_____

PHONE: _____

OWNER SIGNATURE:_____DATE:_____

RESPONSIBLE FOR: _____

TRAINED INDIVIDUAL

PRINT NAME: _____

SIGNATURE: _____

APPENDIX I: *SPDES GENERAL PERMIT GP-0-15-002*

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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

From

CONSTRUCTION ACTIVITY

Permit No. GP-0-15-002

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

Effective Date: January 29, 2015 Expiration Date: January 28, 2020

Modification Date:
July 14, 2015 – Correction of typographical error in definition of "New Development", Appendix A

November 23, 2016 – Updated to require the use of the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. The use of this standard will be required as of February 1, 2017.

John J. Ferguson
Chief Permit Administrator

Authorized Signature 11-14-16 Date

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

PREFACE

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

This general permit ("permit") is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent ("NOI") to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation ("the Department") regional office (see Appendix G).They are also available on the Department's website at:

http://www.dec.ny.gov/

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

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

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

(Part I)

Part I. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

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

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

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

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

B. Effluent Limitations Applicable to Discharges from Construction Activities

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

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

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

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

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

   (ii) Control stormwater *discharge*s to *minimize* channel and streambank erosion and scour in the immediate vicinity of the *discharge* points;

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

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

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

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

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

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

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from dewatering activities, including *discharge*s

from dewatering of trenches and excavations, must be managed by appropriate control measures.

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

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

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

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

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

(i) Wastewater from washout of concrete;

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

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

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

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

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

at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

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

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

a. ***Sizing Criteria* for *New Development***

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

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

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv

that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

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

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or

standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

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

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

c. ***Sizing Criteria* for *Redevelopment Activity***

(Part I.C.2.c.i)

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

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

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

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

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

(Part I.C.2.c.iv)

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

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

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

D. Maintaining Water Quality

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

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

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

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

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

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or

if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

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

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater *discharges* may be authorized by this permit: *discharge*s from firefighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated *groundwater* or spring water; uncontaminated *discharge*s from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who *discharge* as noted in this paragraph, and with the exception of flows from firefighting activities, these *discharges* must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

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

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

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

(Part I.F)

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

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

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

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an endangered or threatened species unless the *owner or operator* has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.C.2 of this permit.

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

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

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

   b. Which disturb one or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.

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

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

   b. Which disturb two or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the USDA Soil Survey for the County where the disturbance will occur.

(Part I.F.8)

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

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

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

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

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:
      (i) No Affect
      (ii) No Adverse Affect

(Part I.F.8.c.iii)

(iii) Executed Memorandum of Agreement, or

d. Documentation that:

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

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

Part II. OBTAINING PERMIT COVERAGE

A.Notice of Intent (NOI) Submittal

1. An *owner or operator* of a *construction activity* that is <u>not</u> subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the Department in order to be authorized to *discharge* under this permit. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address.

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

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

The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the address in Part II.A.1.

(Part II.A.2)

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

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

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

B. Permit Authorization

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

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

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

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

   c. the final SWPPP has been prepared, and

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

3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above

(Part II.B.3)

will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

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

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

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

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

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

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

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

4. The Department may suspend or deny an *owner's or operator's* coverage

(Part II.B.4)

under this permit if the Department determines that the SWPPP does not meet the permit requirements. In accordance with statute, regulation, and the terms and conditions of this permit, the Department may deny coverage under this permit and require submittal of an application for an individual SPDES permit based on a review of the NOI or other information pursuant to Part II.

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

C. General Requirements For Owners or Operators With Permit Coverage

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

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-15-002), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, and all documentation necessary to demonstrate eligibility with this permit at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

   a. The *owner or operator* shall

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

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

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

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

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

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

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

(Part II.D)

D. Permit Coverage for Discharges Authorized Under GP-0-10-001

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-10-001), an *owner or operator* of *a construction activity* with coverage under GP-0-10-001, as of the effective date of GP-0-15-002, shall be authorized to *discharge* in accordance with GP-0-15-002, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-15-002.

E. Change of *Owner or Operator*

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

(Part III)

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

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

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

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

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

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

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

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

5. The Department may notify the *owner or operator* at any time that the

(Part III.A.5)

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

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

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

   > "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

   In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the

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

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

B. Required SWPPP Contents

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

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

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

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

   d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other

activity at the site that results in soil disturbance;

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

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

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

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

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

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

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

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

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

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

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

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

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

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

   c. A Stormwater Modeling and Analysis Report that includes:

      (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

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

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

      (iv) Summary table, with supporting calculations, which demonstrates

that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

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

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

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

e. Infiltration test results, when required; and

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

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

C. Required SWPPP Components by Project Type

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

(Part IV)

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

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

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

B. Contractor Maintenance Inspection Requirements

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

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

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

C. Qualified Inspector Inspection Requirements

(Part IV.C)

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

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

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

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

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

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

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

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

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

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

   b. For construction sites where soil disturbance activities are on-going and

the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

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

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

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

be separated by a minimum of two (2) full calendar days.

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

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

a. Date and time of inspection;

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

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

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

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

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

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

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

(Part IV.C.4.i)

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

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

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

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

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

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

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

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

(Part V.A.2)

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

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

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

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

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

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

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

(Part V.A.5)

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

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

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

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

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

Part VI. REPORTING AND RETENTION OF RECORDS

A. Record Retention

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

B. Addresses

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

(Part VII)

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

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

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

B. Continuation of the Expired General Permit

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

C. Enforcement

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

D. Need to Halt or Reduce Activity Not a Defense

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

E. Duty to Mitigate

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

F. Duty to Provide Information

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

G. Other Information

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

H. Signatory Requirements

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

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

      (i) a president, secretary, treasurer, or vice-president of the

corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

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

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

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

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

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

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

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

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named

individual or any individual occupying a named position) and,

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

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

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

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

I. Property Rights

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

J. Severability

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

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any *discharge*r authorized by a general permit to apply for an individual SPDES permit, it shall notify the *discharge*r in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to

discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

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

L. Proper Operation and Maintenance

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

M. Inspection and Entry

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

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

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

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

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

(Part VII.N)

N. Permit Actions

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

O. Definitions

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

P. Re-Opener Clause

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

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

Q. Penalties for Falsification of Forms and Reports

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

R. Other Permits

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

APPENDIX A

Definitions

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

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

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

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

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

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

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

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

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied

on all disturbed areas that are not covered by permanent structures, concrete or pavement.

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

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

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

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

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

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

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

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

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters,

ditches, man-made
channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*

(ii) Designed or used for collecting or conveying stormwater;

(iii) Which is not a *combined sewer*; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

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

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

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

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

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

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

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

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

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

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

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

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

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

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

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

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

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

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

Steep Slope – means land area with a Soil Slope Phase that is identified as an E or F, or

the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.

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

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

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

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

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

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

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

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part

621 of the Environmental Conservation Law (ECL), Article 70.

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

APPENDIX B

Required SWPPP Components by Project Type

Table 1
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other agricultural building, silo, stock yard or pen.

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

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Bike paths and trails
- Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that *alter hydrology from pre to post development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

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

Table 2

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

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

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project , wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C

Watersheds Where Enhanced Phosphorus Removal Standards Are Required

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

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

Figure 1 - New York City Watershed East of the Hudson

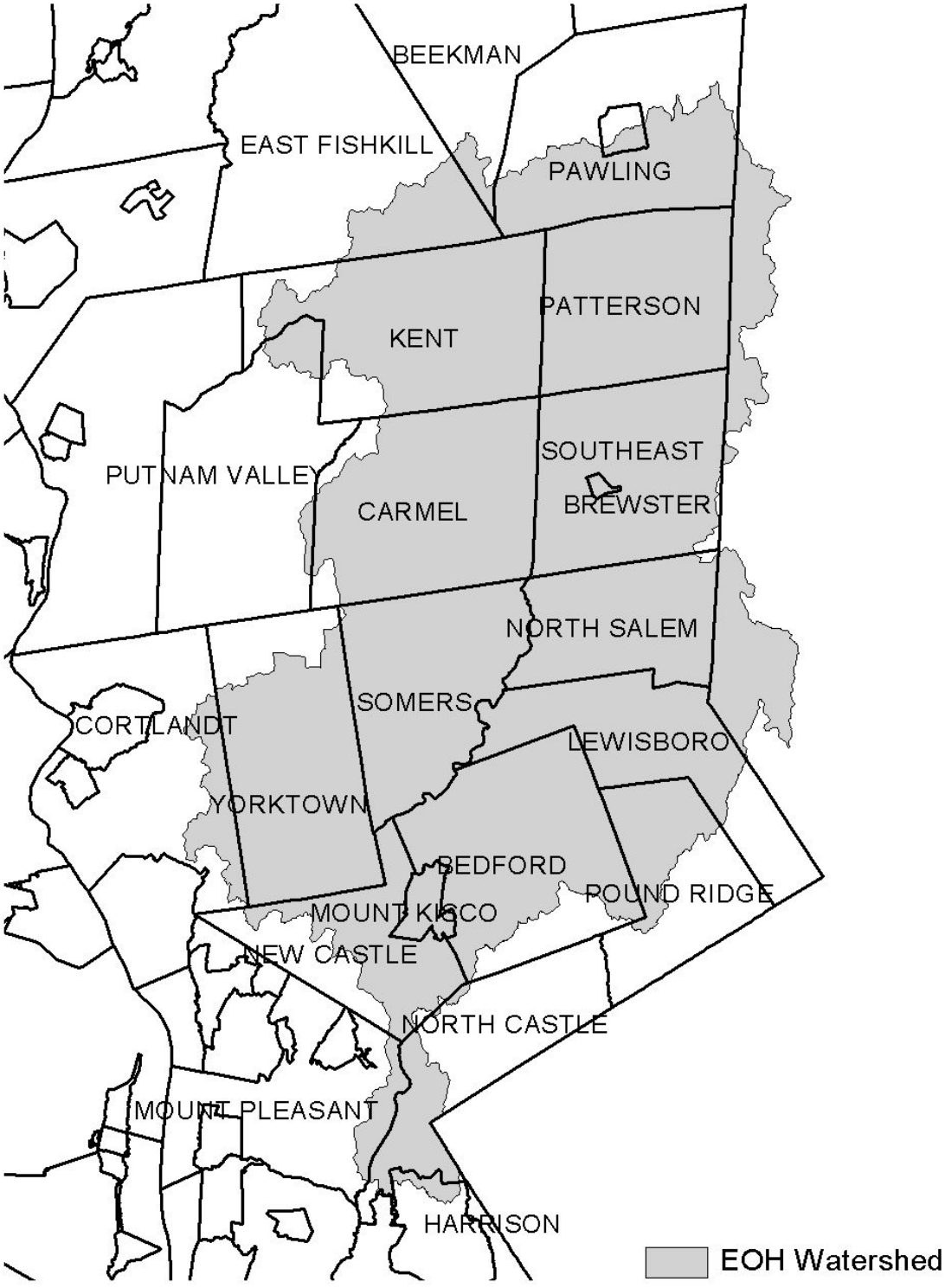


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

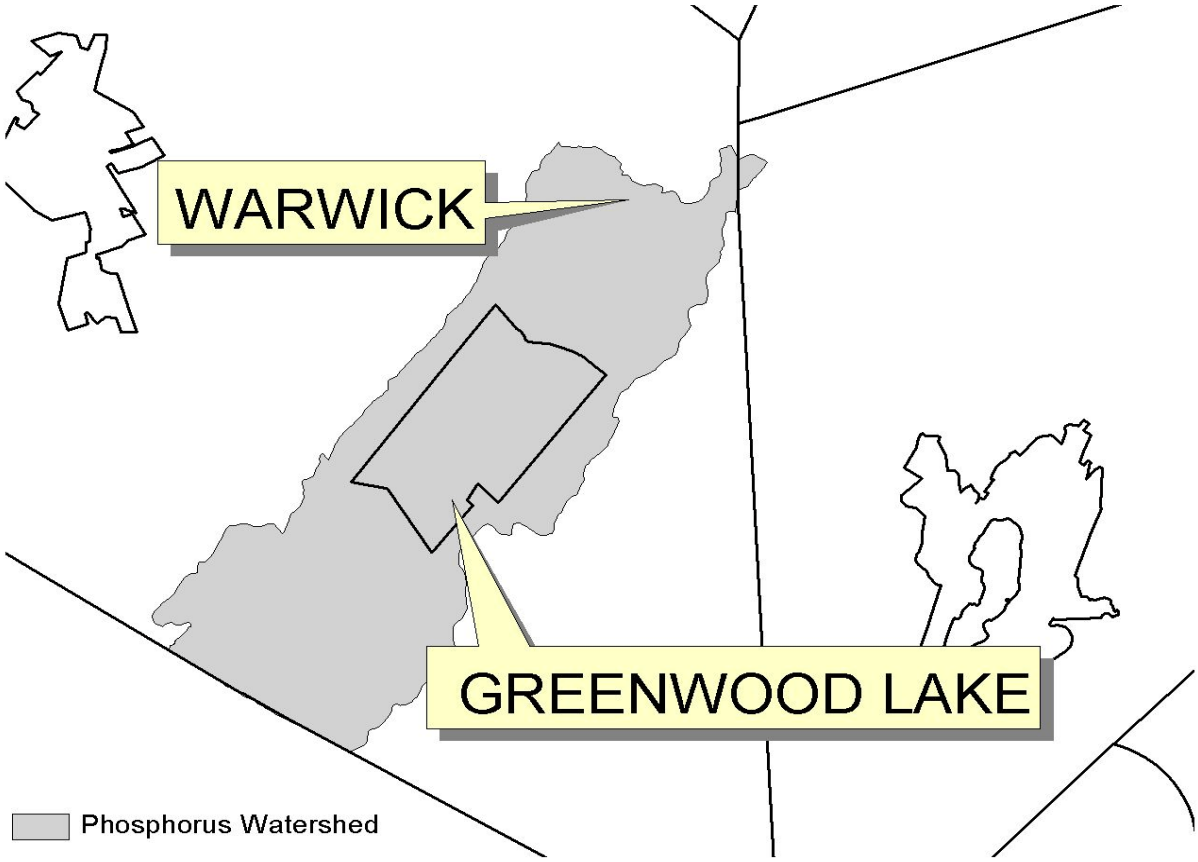


Figure 4 - Oscawana Lake Watershed

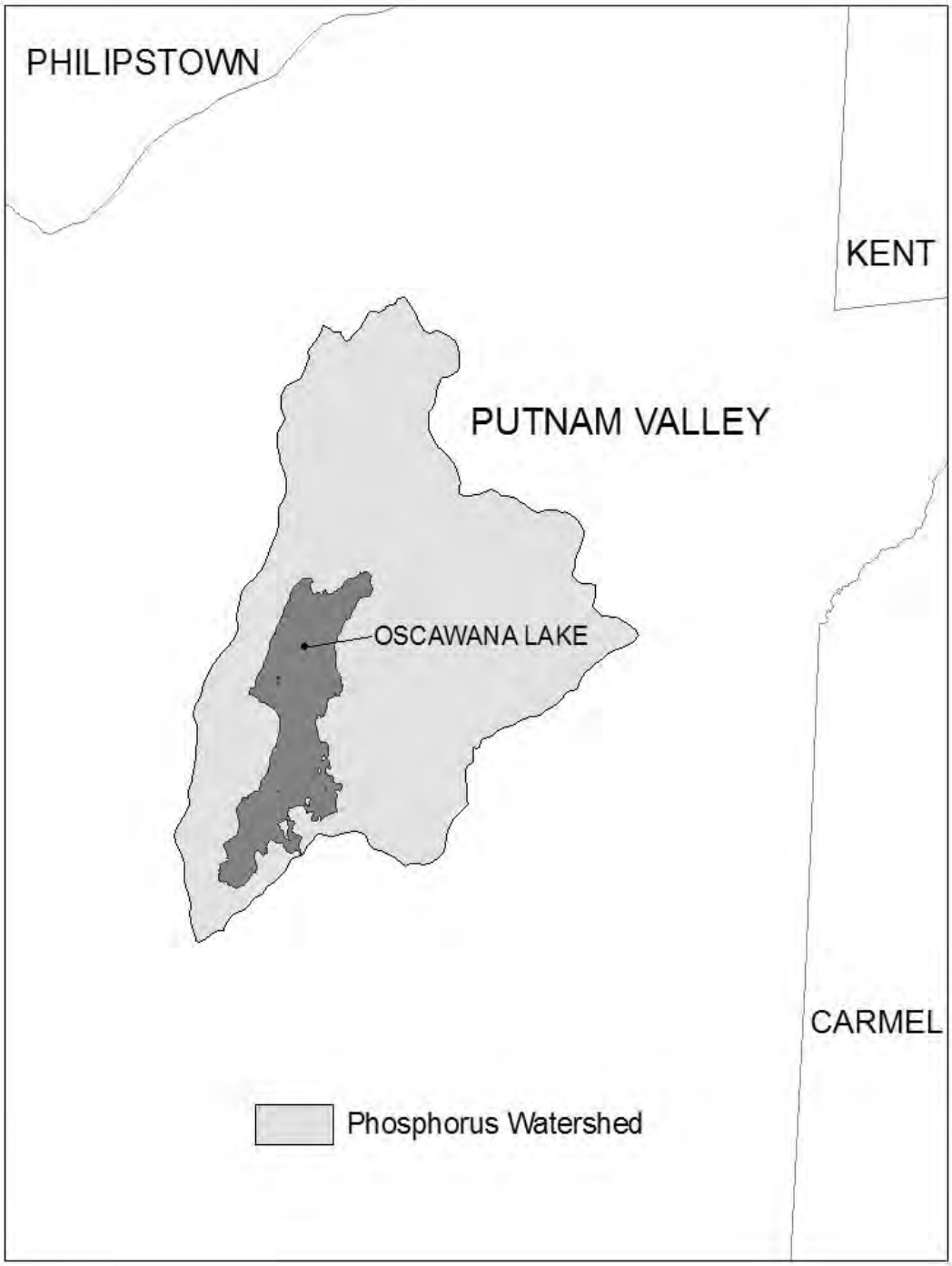
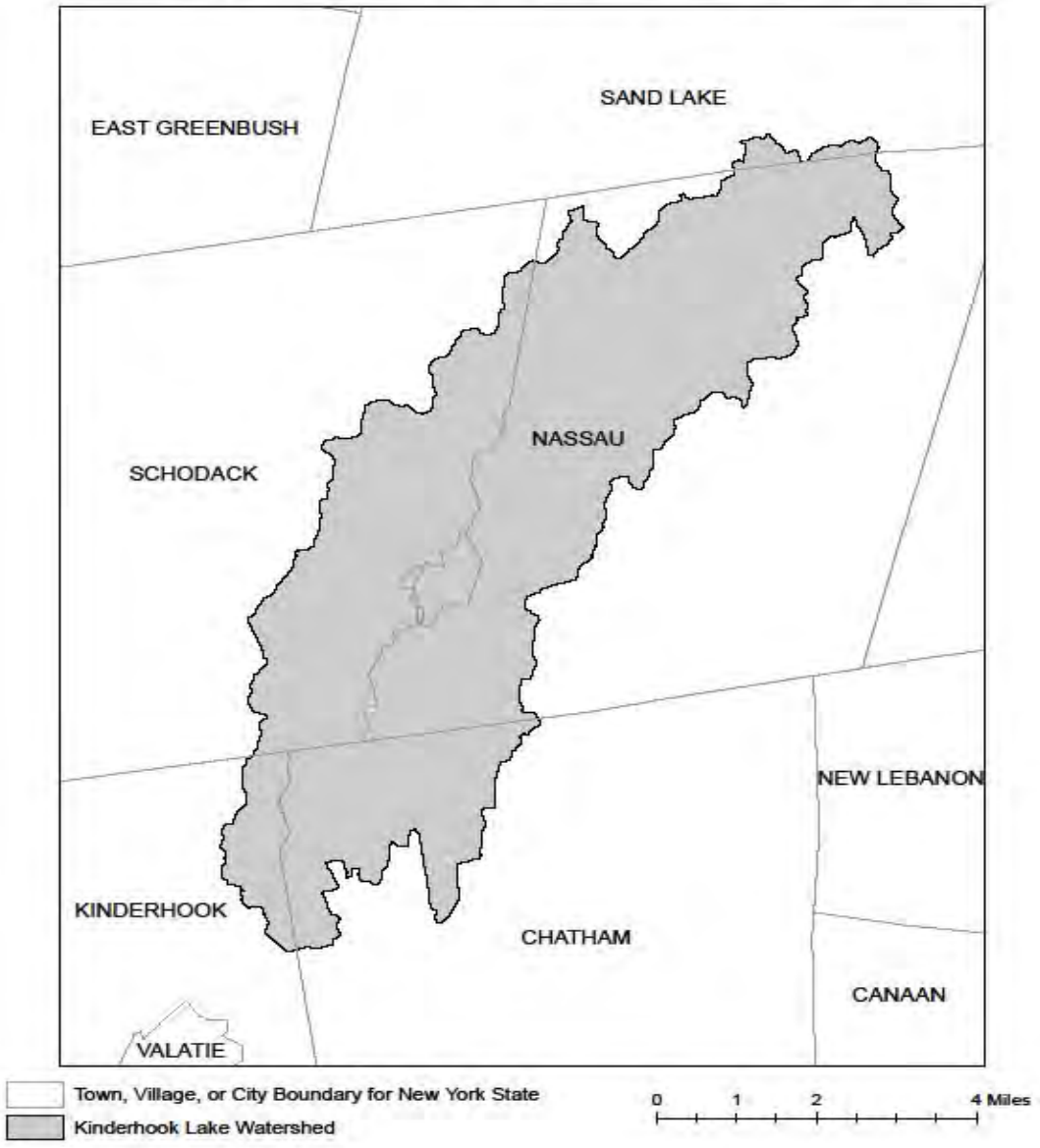


Figure 5: Kinderhook Lake Watershed



APPENDIX D

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

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

APPENDIX E

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

COUNTY	WATERBODY	COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond	Greene	Sleepy Hollow Lake
Albany	Basic Creek Reservoir	Herkimer	Steele Creek tribs
Allegheny	Amity Lake, Saunders Pond	Kings	Hendrix Creek
Bronx	Van Cortlandt Lake	Lewis	Mill Creek/South Branch and tribs
Broome	Whitney Point Lake/Reservoir	Livingston	Conesus Lake
Broome	Fly Pond, Deer Lake	Livingston	Jaycox Creek and tribs
Broome	Minor Tribs to Lower Susquehanna (north)	Livingston	Mill Creek and minor tribs
		Livingston	Bradner Creek and tribs
Cattaraugus	Allegheny River/Reservoir	Livingston	Christie Creek and tribs
Cattaraugus	Case Lake	Monroe	Lake Ontario Shoreline, Western
Cattaraugus	Linlyco/Club Pond	Monroe	Mill Creek/Blue Pond Outlet and tribs
Cayuga	Duck Lake	Monroe	Rochester Embayment - East
Chautauqua	Chautauqua Lake, North	Monroe	Rochester Embayment - West
Chautauqua	Chautauqua Lake, South	Monroe	Unnamed Trib to Honeoye Creek
Chautauqua	Bear Lake	Monroe	Genesee River, Lower, Main Stem
Chautauqua	Chadakoin River and tribs	Monroe	Genesee River, Middle, Main Stem
Chautauqua	Lower Cassadaga Lake	Monroe	Black Creek, Lower, and minor tribs
Chautauqua	Middle Cassadaga Lake	Monroe	Buck Pond
Chautauqua	Findley Lake	Monroe	Long Pond
Clinton	Great Chazy River, Lower, Main Stem	Monroe	Cranberry Pond
Columbia	Kinderhook Lake	Monroe	Mill Creek and tribs
Columbia	Robinson Pond	Monroe	Shipbuilders Creek and tribs
Dutchess	Hillside Lake	Monroe	Minor tribs to Irondequoit Bay
Dutchess	Wappinger Lakes	Monroe	Thomas Creek/White Brook and tribs
Dutchess	Fall Kill and tribs	Nassau	Glen Cove Creek, Lower, and tribs
Erie	Green Lake	Nassau	LI Tribs (fresh) to East Bay
Erie	Scajaquada Creek, Lower, and tribs	Nassau	East Meadow Brook, Upper, and tribs
Erie	Scajaquada Creek, Middle, and tribs	Nassau	Hempstead Bay
Erie	Scajaquada Creek, Upper, and tribs	Nassau	Hempstead Lake
Erie	Rush Creek and tribs	Nassau	Grant Park Pond
Erie	Ellicott Creek, Lower, and tribs	Nassau	Beaver Lake
Erie	Beeman Creek and tribs	Nassau	Camaans Pond
Erie	Murder Creek, Lower, and tribs	Nassau	Halls Pond
Erie	South Branch Smoke Cr, Lower, and tribs	Nassau	LI Tidal Tribs to Hempstead Bay
		Nassau	Massapequa Creek and tribs
Erie	Little Sister Creek, Lower, and tribs	Nassau	Reynolds Channel, east
Essex	Lake George (primary county: Warren)	Nassau	Reynolds Channel, west
Genesee	Black Creek, Upper, and minor tribs	Nassau	Silver Lake, Lofts Pond
Genesee	Tonawanda Creek, Middle, Main Stem	Nassau	Woodmere Channel
Genesee	Oak Orchard Creek, Upper, and tribs	Niagara	Hyde Park Lake
Genesee	Bowen Brook and tribs	Niagara	Lake Ontario Shoreline, Western
Genesee	Bigelow Creek and tribs	Niagara	Bergholtz Creek and tribs
Genesee	Black Creek, Middle, and minor tribs	Oneida	Ballou, Nail Creeks
Genesee	LeRoy Reservoir	Onondaga	Ley Creek and tribs
Greene	Schoharie Reservoir	Onondaga	Onondaga Creek, Lower and tribs

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Onondaga	Onondaga Creek, Middle and tribs	Suffolk	Great South Bay, West
Onondaga	Onondaga Creek, Upp, and minor tribs	Suffolk	Mill and Seven Ponds
Onondaga	Harbor Brook, Lower, and tribs	Suffolk	Moriches Bay, East
Onondaga	Ninemile Creek, Lower, and tribs	Suffolk	Moriches Bay, West
Onondaga	Minor tribs to Onondaga Lake	Suffolk	Quantuck Bay
Onondaga	Onondaga Creek, Lower, and tribs	Suffolk	Shinnecock Bay (and Inlet)
Ontario	Honeoye Lake	Sullivan	Bodine, Montgomery Lakes
Ontario	Hemlock Lake Outlet and minor tribs	Sullivan	Davies Lake
Ontario	Great Brook and minor tribs	Sullivan	Pleasure Lake
Orange	Monhagen Brook and tribs	Sullivan	Swan Lake
Orange	Orange Lake	Tompkins	Cayuga Lake, Southern End
Orleans	Lake Ontario Shoreline, Western	Tompkins	Owasco Inlet, Upper, and tribs
Oswego	Pleasant Lake	Ulster	Ashokan Reservoir
Oswego	Lake Neatahwanta	Ulster	Esopus Creek, Upper, and minor tribs
Putnam	Oscawana Lake		
Putnam	Palmer Lake	Ulster	Esopus Creek, Lower, Main Stem
Putnam	Lake Carmel	Ulster	Esopus Creek, Middle, and minor tribs
Queens	Jamaica Bay, Eastern, and tribs (Queens)		
Queens	Bergen Basin	Warren	Lake George
Queens	Shellbank Basin	Warren	Tribs to L.George, Village of L George
Rensselaer	Nassau Lake		
Rensselaer	Snyders Lake	Warren	Huddle/Finkle Brooks and tribs
Richmond	Grasmere, Arbutus and Wolfes Lakes	Warren	Indian Brook and tribs
Rockland	Congers Lake, Swartout Lake	Warren	Hague Brook and tribs
Rockland	Rockland Lake	Washington	Tribs to L.George, East Shr Lk George
Saratoga	Ballston Lake		
Saratoga	Round Lake	Washington	Cossayuna Lake
Saratoga	Dwaas Kill and tribs	Washington	Wood Cr/Champlain Canal, minor tribs
Saratoga	Tribs to Lake Lonely		
Saratoga	Lake Lonely	Wayne	Port Bay
Schenectady	Collins Lake	Wayne	Marbletown Creek and tribs
Schenectady	Duane Lake	Westchester	Lake Katonah
Schenectady	Mariaville Lake	Westchester	Lake Mohegan
Schoharie	Engleville Pond	Westchester	Lake Shenorock
Schoharie	Summit Lake	Westchester	Reservoir No.1 (Lake Isle)
Schuyler	Cayuta Lake	Westchester	Saw Mill River, Middle, and tribs
St. Lawrence	Fish Creek and minor tribs	Westchester	Silver Lake
St. Lawrence	Black Lake Outlet/Black Lake	Westchester	Teatown Lake
Steuben	Lake Salubria	Westchester	Truesdale Lake
Steuben	Smith Pond	Westchester	Wallace Pond
Suffolk	Millers Pond	Westchester	Peach Lake
Suffolk	Mattituck (Marratooka) Pond	Westchester	Mamaroneck River, Lower
Suffolk	Tidal tribs to West Moriches Bay	Westchester	Mamaroneck River, Upp, and tribs
Suffolk	Canaan Lake	Westchester	Sheldrake River and tribs
Suffolk	Lake Ronkonkoma	Westchester	Blind Brook, Lower
Suffolk	Beaverdam Creek and tribs	Westchester	Blind Brook, Upper, and tribs
Suffolk	Big/Little Fresh Ponds	Westchester	Lake Lincolndale
Suffolk	Fresh Pond	Westchester	Lake Meahaugh
Suffolk	Great South Bay, East	Wyoming	Java Lake
Suffolk	Great South Bay, Middle	Wyoming	Silver Lake

Note: The list above identifies those waters from the final New York State "2014 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated January 2015, that are impaired by silt, sediment or nutrients.

APPENDIX F

LIST OF NYS DEC REGIONAL OFFICES

Region	COVERING THE FOLLOWING COUNTIES:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS	DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD WARRENSBURG, NY 12885-1172 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

APPENDIX J:
RECOMMENDED CONSTRUCTION SEQUENCE SCHEDULE

(TO BE INCLUDED AT A LATER DATE)

APPENDIX K:
AMENDMENTS AND MODIFICATIONS TO SWPPP

SPDES STORMWATER POLLUTION PREVENTION PLAN (SWPPP) REVISION/MODIFICATION

Project Identification Number:_____
Project title:_____
Project Location:_____

Date of revision:_____ Sheet ____ of _____

This form is to be used when revisions to the current Stormwater Pollution Prevention Plan (SWPPP) are required by the SPDES General Permit for Construction Activity (GP-0-15-002, III.B.3). The completed form must be filed in the Director's Representatives Office.

Reasons for the Revision(s): Revisions were requested by NYSDEC Yes No

_____
_____
_____
_____
_____
_____
_____
_____

Describe the Revision(s) to the SWPPP:

_____
_____
_____
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_____

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

Signature:_____ Prepared:_____ Submitted:_____ Copy to Contractor:_____
(Date) (Date) (Date)

Resident Engineers Name/Title:_____

APPENDIX L:
NOTICE OF INTENT

(TO BE INCLUDED AT A LATER DATE)

Notice of Ground Disturbance / Area Tally Form

Please complete this form and submit to the Town of Dryden Stormwater Management Officer. "**Land Development Activity**" resulting in Ground Disturbance is defined as all areas where soil will be disturbed as a result of clearing, grubbing, grading, excavating, stockpiling, placement of fill, paving, installation of utilities, and construction of buildings or structures. This form will enable Town of Dryden staff to assist applicants in meeting local stormwater standards, and it is helpful to submit this form prior to finalizing your SWPPP.

Owner's Name: M&R Entities, LLC Date: 1/20/17

Phone # (607) 592-2969 Mailing Address: 117 Horizons Drive

Project Site Address: 1060 Dryden Road Tax Parcel # 55-1-16

Project Sponsor Name (If Different than Owner): _____ Phone: _____

Address: _____

Brief Description of the Project:

Construct 36 unit town home complex and associated drives, parking areas, and utilities.

(Attach additional sheets of paper as necessary and include a project sketch)

Project and Site Characteristics (Check yes or no as appropriate)

1. Will the project involve multiple phases? ☐ YES ☒ NO If YES, how many phases? _____

2. What is the shortest distance from the project area of disturbance to the edge of any stream, pond, lake, or wetland in the vicinity of the project? _____feet.

3. Does the site show any field or map indicators of potential wetland presence? ☐ YES ☒ NO
   Check all that are applicable:

☐ Mapped NWI Wetlands ☐ Mapped DEC Wetlands ☐ Mapped Hydric Soils

☐ Field indicators of Hydric Soils ☐ Vegetation indicative of wetlands ☐ Wetland Delineation

4. Please describe the slope on site (e.g. steep or flat areas, stream banks, gullies, bluffs etc.).
   The overall site slopes from east to west. There is a steep slope on the north side along NYS Route 366.

5. Will the project include a linear excavation that is more than 500 feet long and 3 feet wide? ☒YES ☐NO
   This is internal to the project site.
6. Will the project involve excavation or fill resulting in the movement of more than 250 cubic yards of soil, sand, or similar material? ☒YES ☐ NO

7. Does the project require any state or federal environmental permits? ☒ YES ☐ NO
   Permit(s): SPDES general permit for construction activities

8. Do connected Impervious Areas exceed ½ acre. ☒ YES ☐ NO
(If YES a Full SWPPP is required)

Town of Dryden Notice of Ground Disturbance / Area Tally Form

---

9. Area Tally

9A) Fill in the approximate area to be disturbed by the following, in square feet, as applicable. If it has been determined that a Full SWPPP is necessary from the Notice of Ground Disturbance, then please present this information when the final draft is complete.

Driveway _____

Parking Area_____

House / Main Building_____

Other Buildings _____

Septic System_____

Other Grading / Clearing / Lawn _____

Wells and Ditches _____

Drainage Structures _____

Utility Laying_____

Additional Area _____ (for construction access, stockpiling, etc.)

Total (do not total overlapping areas): _____

9B) For subdivisions only:
Total from Above: _____ x _____ (# of lots) + _____ (road area) = _____

9C) As estimated above, the total Area of Disturbance is: _____

---

10. Is more than half of the project site area over soils in Hydrologic Soil Group A, B, or C according to the Tompkins County Soil Survey? ☐ YES ☒ NO

11. Is the project redevelopment, as defined by Chapter 9 of the DEC's design manual? ☐ YES ☒ NO

12. Total Parcel Acreage: 6.537

13. Area of existing impervious surface prior to development: 0.09

14. Total Impervious Area expected after project completion: 2.2

Signature: _____ Date: _____

HOLT ARCHITECTS
Architecture
Planning
Interior Design
619 W. State Street
Ithaca, New York 14850
132 E. Jefferson Street
Syracuse, New York 13202
p 607 273 7600 www.holt.com

TWLA
LANDSCAPE ARCHITECTS

REVISION SCHEDULE

NAME	DATE

SCHEMATIC DESIGN
NOT FOR CONSTRUCTION OR BIDDING

Concept PUD Plan / Schematic Design

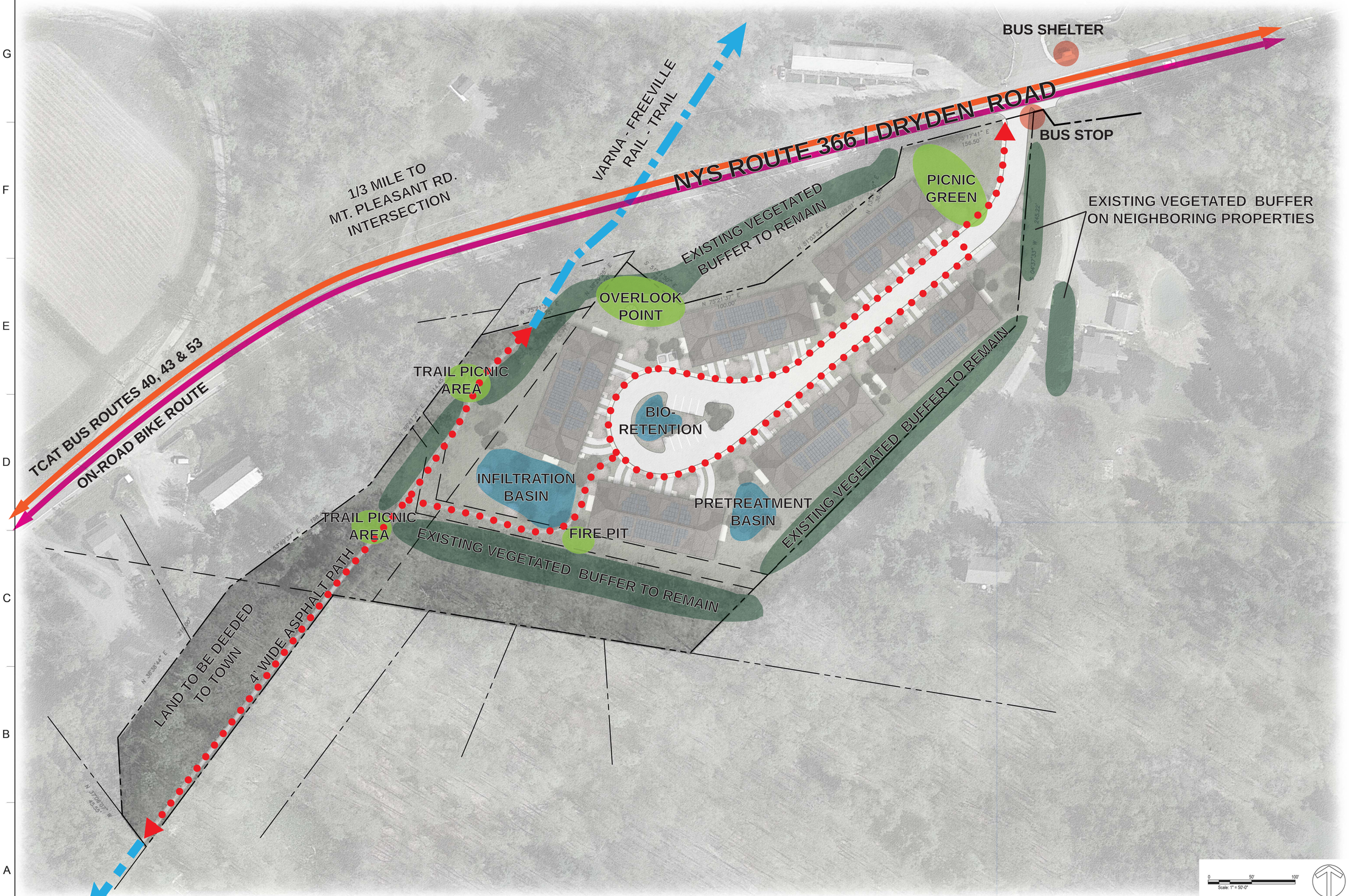
EVERGREEN TOWNHOMES

M&R ENTITIES
1061 DRYDEN ROAD, DRYDEN, NY

DATE:	20 JAN 2017
PROJECT:	16012
OTHER:	
DRAWN BY:	MDC

SITE RENDERING

L001



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LANDSCAPE ARCHITECTS

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Concept PUD Plan / Schematic Design

EVERGREEN TOWNHOMES

M&R ENTITIES
1061 DRYDEN ROAD, DRYDEN, NY

DATE:	20 JAN 2017
PROJECT:	16012
OTHER:	
DRAWN BY:	MDC

OPEN SPACE DIAGRAM

L002

PARCEL INFO	
ADDRESS:	1061 DRYDEN ROAD, TOWN OF DRYDEN
TAX PARCEL:	55-1-16
TOTAL AREA:	6.537 ACRES
NUMBER OF UNITS PROPOSED:	36
PROPOSED BUILDING AREA:	2.1 ACRES
PROPOSED GREEN SPACE:	4.427 ACRES
ZONING SUMMARY	
	RURAL RESIDENTIAL DISTRICT
MINIMUM LOT AREA WITH PUBLIC WATER/SEWER	10,000 SF
MINIMUM FRONT YARD SETBACK	50 FT
MINIMUM SIDE YARD SETBACK	15 FT
MINIMUM SIDE YARD SETBACK: ACCESSORY BLDG WITH <15 FT HEIGHT & 200 SF OR LESS	1 FT
MINIMUM REAR YARD SETBACK	25 FT
MINIMUM REAR YARD SETBACK: ACCESSORY BLDG WITH <15 FT HEIGHT & 200 SF OR LESS	25 FT
MINIMUM LOT FRONTAGE	250 FT
MINIMUM LOT WIDTH	100 FT
MAXIMUM LOT COVERAGE	25 %
MAXIMUM BUILDING HEIGHT	35 FEET (SEE §604)

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REVISION SCHEDULE

NAME	DATE

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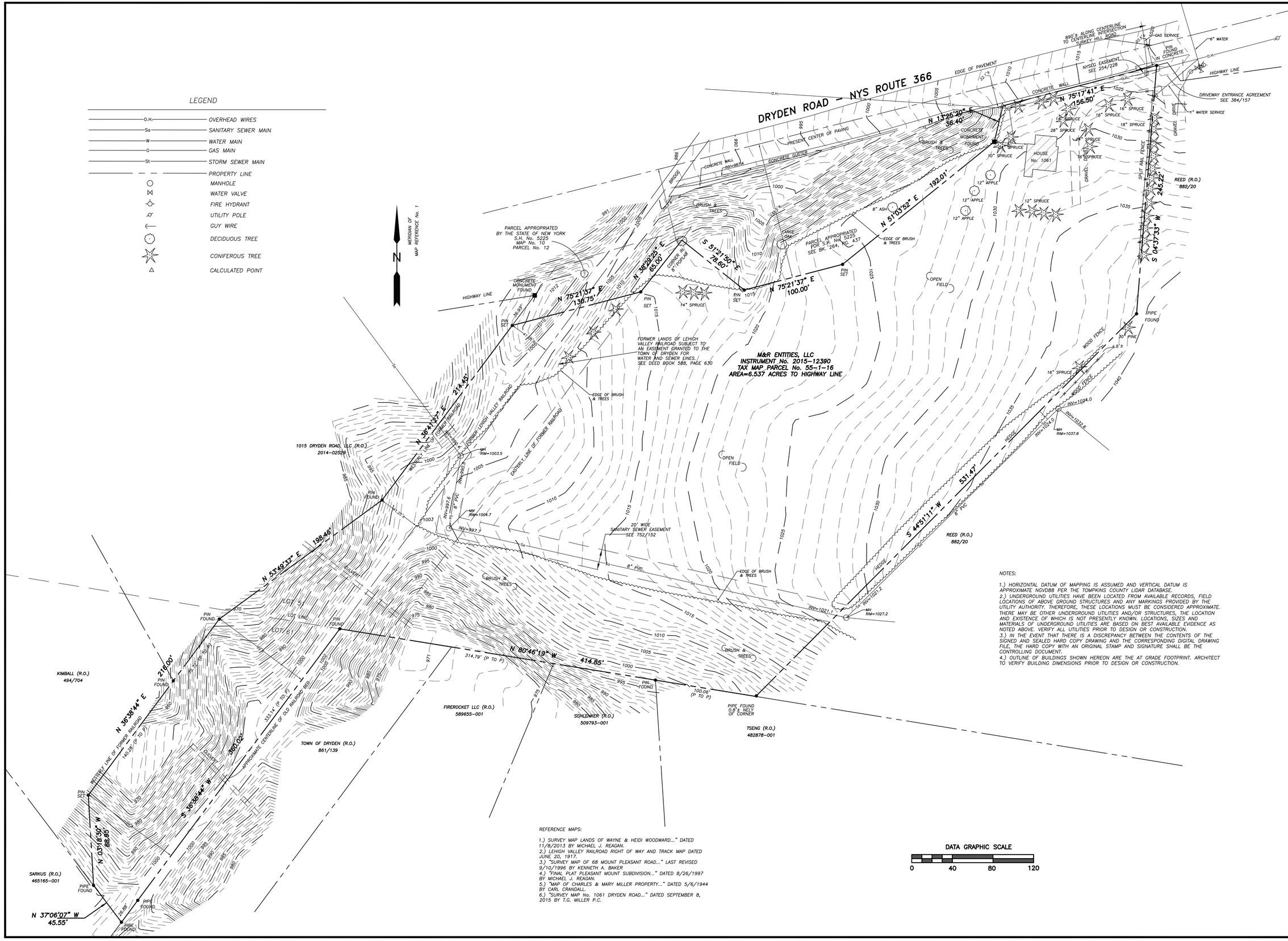
EVERGREEN TOWNHOMES

M&R ENTITIES
1061 DRYDEN ROAD, DRYDEN, NY

DATE:	20 JAN 2017
PROJECT:	16012
OTHER:	
DRAWN BY:	MDC

CONTEXT DIAGRAM

L003



T. G. MILLER P.C.
ENGINEERS AND SURVEYORS
203 NORTH AURORA STREET
ITHACA, NEW YORK 14851
PHONE (607) 272-6477

BOUNDARY & TOPOGRAPHIC MAP
No. 1061 DRYDEN ROAD

TOWN OF DRYDEN, TOMPKINS COUNTY, NEW YORK

DATE	REVISION	BY
5/13/16	ADDED ADDITIONAL CONTOURS ALONG FORMER RAILROAD CORRIDOR	DAB

Warning

ALTERATIONS TO THIS MAP NOT CONFORMING TO SECTION 7209, SUBDIVISION 2, NEW YORK STATE EDUCATION LAW, ARE PROHIBITED BY LAW. ALL CERTIFICATIONS HEREON ARE VALID FOR THIS MAP AND COPIES THEREOF ONLY IF SAID MAP OR COPIES BEAR THE IMPRESSION SEAL OF THE LICENSED LAND SURVEYOR WHOSE SIGNATURE APPEARS HEREON.

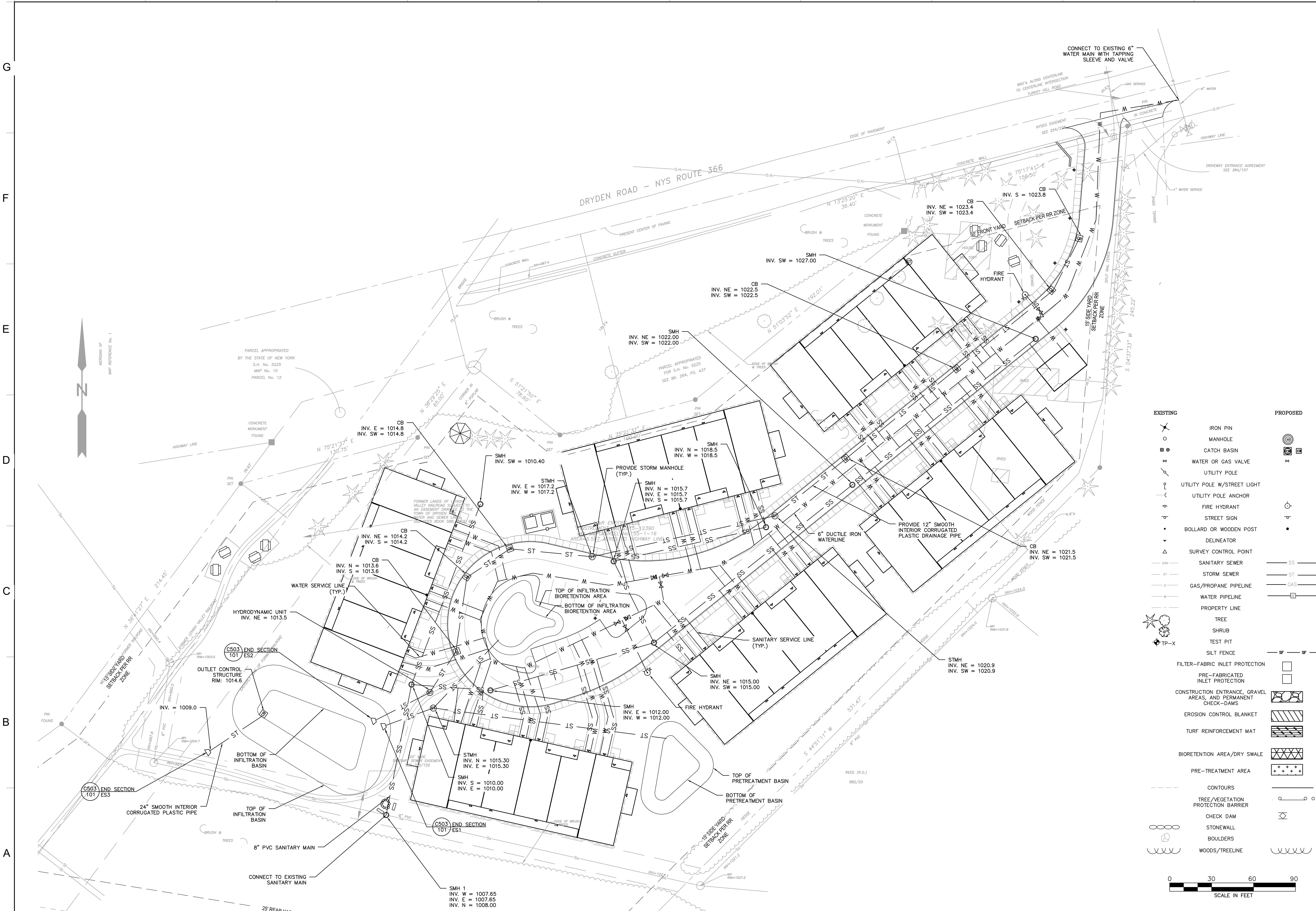
DARRIN A. BROCK, L.S.
N.Y.S. LICENSE No. 050597

SIGNATURE

LICENSED LAND SURVEYOR

STATE OF NEW YORK
DARRIN A. BROCK
050597
LICENSED LAND SURVEYOR

DATE: 10/21/2015	JOB No. S15811
SCALE: 1"=40'	
DRAWN BY: DAB	SHEET 1 OF 1
CHECKED: DLD	



SHUMAKER
Consulting Engineering & Land Surveying, D.P.C.

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REVISION SCHEDULE

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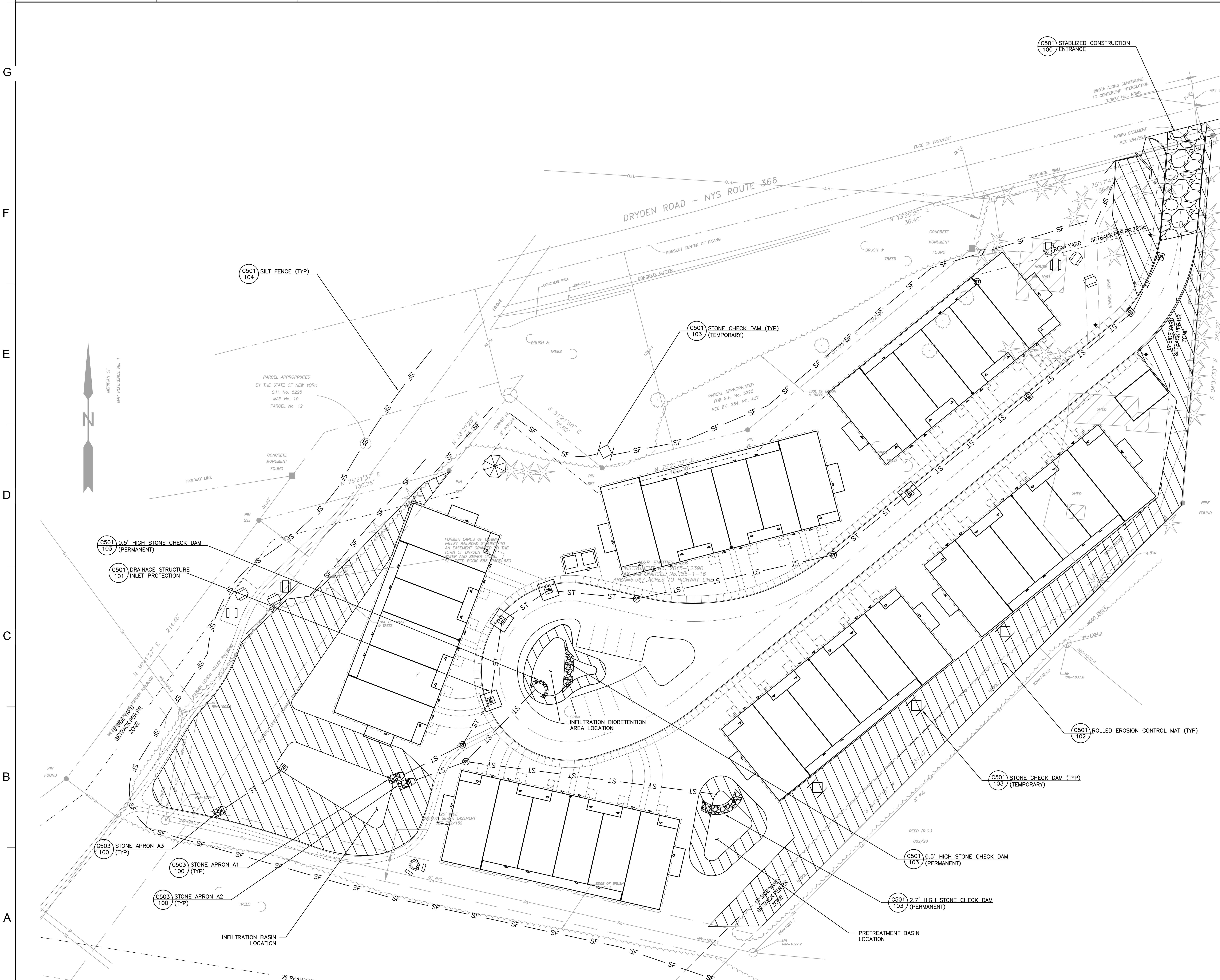
EVERGREEN TOWNHOMES
M&R ENTITIES
1061 DRYDEN ROAD, DRYDEN NY

DATE:	01/20/2017
PROJECT:	2016012
DRAWN BY:	MAA
CHECKED BY:	MGS

UTILITY PLAN

C100



EXISTING		PROPOSED
	IRON PIN	
	MANHOLE	
	CATCH BASIN	
	WATER OR GAS VALVE	
	UTILITY POLE	
	UTILITY POLE W/STREET LIGHT	
	UTILITY POLE ANCHOR	
	FIRE HYDRANT	
	STREET SIGN	
	BOLLARD OR WOODEN POST	
	DELINEATOR	
	SURVEY CONTROL POINT	
SAN	SANITARY SEWER	SS
ST	STORM SEWER	ST
G	GAS/PROPANE PIPELINE	GAS
W	WATER PIPELINE	W
	PROPERTY LINE	
	TREE	
	SHRUB	
TP-X	TEST PIT	
	SILT FENCE	SF SF
	FILTER-FABRIC INLET PROTECTION	
	PRE-FABRICATED INLET PROTECTION	
	CONSTRUCTION ENTRANCE, GRAVEL AREAS, AND PERMANENT CHECK-DAMS	
	EROSION CONTROL BLANKET	
	TURF REINFORCEMENT MAT	
	BIORETENTION AREA/DRY SWALE	
	PRE-TREATMENT AREA	
	CONTOURS	
	TREE/VEGETATION PROTECTION BARRIER	
	CHECK DAM	
	STONEWALL	
	BOULDERS	
	WOODS/TREELINE	

0 30 60 90
SCALE IN FEET

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EVERGREEN TOWNHOMES

M&R ENTITIES

1061 DRYDEN ROAD, DRYDEN NY

DATE:	01/20/2017
PROJECT:	2016012
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CHECKED BY:	MGS

EROSION AND SEDIMENT CONTROL PLAN

C101

EXISTING		PROPOSED
	IRON PIN	
	MANHOLE	
	CATCH BASIN	
	WATER OR GAS VALVE	
	UTILITY POLE	
	UTILITY POLE W/STREET LIGHT	
	UTILITY POLE ANCHOR	
	FIRE HYDRANT	
	STREET SIGN	
	BOLLARD OR WOODEN POST	
	DELINEATOR	
	SURVEY CONTROL POINT	
SAN	SANITARY SEWER	SS
ST	STORM SEWER	ST
G	GAS/PROPANE PIPELINE	GAS
W	WATER PIPELINE	W
	PROPERTY LINE	
	TREE	
	SHRUB	
TP-X	TEST PIT	
SF	SILT FENCE	SF
	FILTER-FABRIC INLET PROTECTION	
	PRE-FABRICATED INLET PROTECTION	
	CONSTRUCTION ENTRANCE, GRAVEL AREAS, AND PERMANENT CHECK-DAMS	
	EROSION CONTROL BLANKET	
	TURF REINFORCEMENT MAT	
	BIORETENTION AREA/DRY SWALE	
	PRE-TREATMENT AREA	
	CONTOURS	
	TREE/VEGETATION PROTECTION BARRIER	
	CHECK DAM	
	STONEWALL	
	BOULDERS	
	WOODS/TREELINE	

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[illegible], AMITON, NY [illegible]
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EVERGREEN TOWNHOMES

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DATE:	01/20/2017
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STORMWATER MANAGEMENT PLAN

C102

GENERAL SOIL AND SEDIMENT CONTROL NOTES:

1. THE CONTRACTOR WILL BE REQUIRED TO PERFORM ALL CONSTRUCTION OPERATIONS IN A MANNER SO AS TO MINIMIZE SOIL EROSION AND ENSURE SEDIMENT CONTROL. EROSION CONTROL MEASURES ARE ITEMS WHICH MINIMIZE THE EROSION OF SOIL. SEDIMENT CONTROL MEASURES ARE ITEMS WHICH KEEP SEDIMENT FROM LEAVING THE PROJECT SITE. EFFECTIVE SOIL EROSION AND SEDIMENT CONTROL CAN BE ACCOMPLISHED BY LIMITING THE AREA OF UNPROTECTED SOIL. PROTECTED IS DEFINED AS HAVING TEMPORARY OR PERMANENT SOIL EROSION AND SEDIMENT CONTROL MEASURES IN PLACE. PERIMETER SEDIMENT CONTROL MEASURES ALONE ARE NOT CONSIDERED ADEQUATE PROTECTION.

2. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT DIRECT OR INDIRECT CONTAMINATION OF ALL WATER BODIES (INCLUDING WETLANDS) BY SILT, SEDIMENT, FUELS, SOLVENTS, LUBRICANTS, EPOXY COATINGS, CONCRETE LEACHATE, OR ANY OTHER POLLUTANT ASSOCIATED WITH CONSTRUCTION AND CONSTRUCTION PROCEDURES. DURING CONSTRUCTION, NO WET OR FRESH CONCRETE OR LEACHATE SHALL BE ALLOWED TO ESCAPE DIRECTLY OR INDIRECTLY ON TO THE GROUND OR ANY WATER BODIES (INCLUDING WETLANDS), NOR SHALL WASHINGS FROM CONCRETE TRUCKS, MIXERS, OR OTHER DEVICES BE ALLOWED TO ESCAPE DIRECTLY OR INDIRECTLY INTO ANY WATER BODIES (INCLUDING WETLANDS).

3. TEMPORARY SOIL AND EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AS PER DETAILS AND SPECIFICATIONS. THE COST OF MAINTAINING AND REMOVING TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE BID PRICE . ALL TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED BY THE CONTRACTOR AFTER EACH STORM EVENT OF 1" OR MORE IN A 12 HOUR PERIOD. AT LEAST DAILY DURING PROLONGED RAINFALL. IF NO RAINFALL OCCURS, INSPECTION SHALL BE DONE ONCE EVERY SEVEN CALENDAR DAYS.

4. PERIMETER SEDIMENT CONTROL MEASURES AND VEGETATION PROTECTION FENCES SHALL BE PLACED PRIOR TO STARTING CLEARING AND GRUBBING OPERATIONS. THESE MEASURES SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE PERMANENTLY PROTECTED WITH EROSION CONTROL MEASURES.

5. TEMPORARY STOCKPILES OF SOIL SHALL BE PROTECTED. AT A MINIMUM TEMPORARY STOCKPILES SHALL BE RINGED WITH SILT FENCE. STOCKPILES AND AREA OF STOCKPILES LEFT INACTIVE FOR LONGER THAN 7 DAYS SHALL HAVE TEMPORARY SEED AND MULCH APPLIED OR BE COVERED IN A MANNER THAT WILL PREVENT EROSION. ANY MEASURES USED TO COVER STOCKPILES SHALL BE SECURED TO MAINTAIN THEIR EFFECTIVENESS.

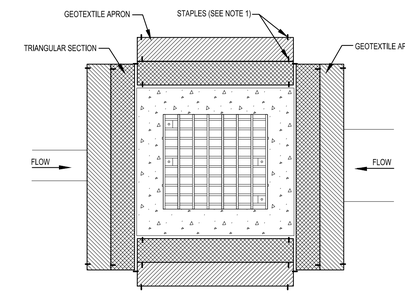
6. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A MAINTAINED ROADWAY.

7. ANY ADDITIONAL SOIL EROSION AND SEDIMENT CONTROL MEASURES USED TO SUPPLEMENT THE PLANS SHALL BE PREPARED IN ACCORDANCE WITH THE TECHNICAL REQUIREMENTS IN THE "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL", LATEST EDITION. ADDITIONAL MEASURES MAY BE REQUIRED AS ORDERED BY THE ENGINEER OR AS SITE CONDITIONS CHANGE AT NO ADDITIONAL COST TO THE OWNER.

8. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORMDRAINS, DITCHES, OR WATERCOURSES.

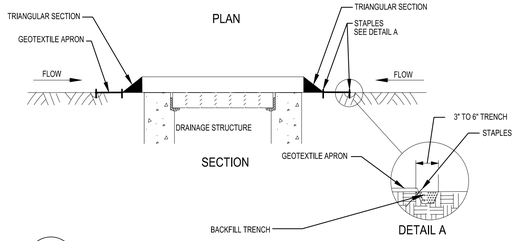
9. CONTRACTOR SHALL ABIDE BY THE PROJECTS SWPPP.

C500 / 100 EROSION CONTROL GENERAL NOTES
NOT TO SCALE



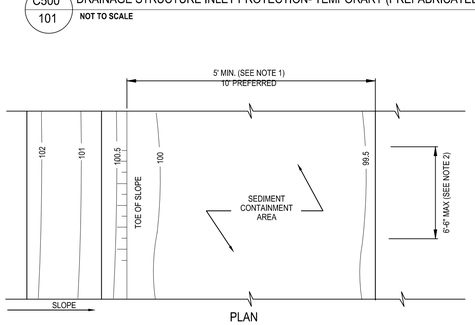
NOTES:
1. SECURE THE ENDS OF THE APRON FOR THE PREFABRICATED DRAINAGE STRUCTURE INLET PROTECTION WITH STAPLES AS DETAILED IN THE PLAN VIEW OR AS RECOMMENDED BY THE MANUFACTURERS LITERATURE.
2. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) DAYS, AFTER EACH RAINFALL OF ½" INCH OR MORE WITHIN A 24 HOUR PERIOD, OR DAILY DURING PROLONGED RAINFALL. MEASURES SHALL BE CLEANED AND REPAIRED AS REQUIRED.
3. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
4. WHEN USED ON ASPHALT PAVEMENT THE GEOTEXTILE APRON SHALL BE SECURED WITH GRAVEL BAGS OR CLEAN GRAVEL INSTEAD OF STAPLING.

PLAN



SECTION DETAIL A

C500 / 101 DRAINAGE STRUCTURE INLET PROTECTION- TEMPORARY (PREFABRICATED)
NOT TO SCALE



PLAN

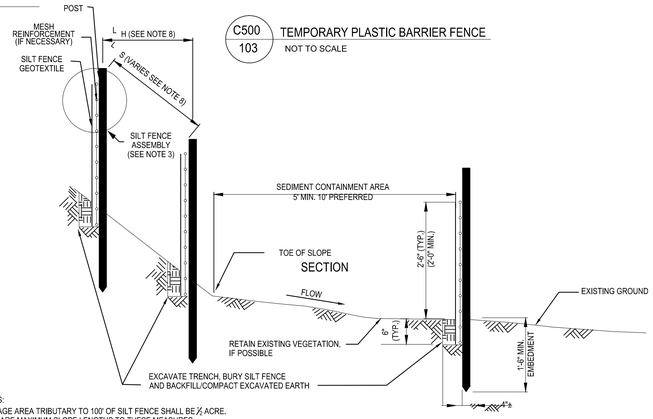
GENERAL NOTES:

SILT FENCE

1. SILT FENCE SHALL BE PLACED A MINIMUM OF 4' FROM TOE OF SLOPE, 10' PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
2. POSTS MAY BE 1½"x1½"(MINIMUM) HARDWOOD, 1½"x1½"(MINIMUM) SOFTWOOD, OR 1.34LB/FT (MIN.) STEEL.
3. ASSEMBLIES MAY HAVE 4' OR 6.5' POST SPACING. MESH IS NECESSARY ON FENCES WITH 6.5' SPACING AND ALL FENCE PLACED AT THE BOTTOM OF A 2:1, 3:1 (H:V) SLOPE.
4. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6" BELOW GROUND. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
5. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS, AFTER EACH RAINFALL OF 1/2" OR MORE WITHIN A 12 HOUR PERIOD, OR DAILY DURING PROLONGED RAINFALL. MEASURES SHALL BE CLEANED AND REPAIRED AS REQUIRED.
6. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
7. DRAINAGE AREAS:
   MAXIMUM DRAINAGE AREA TRIBUTARY TO 100' OF SILT FENCE SHALL BE ½ ACRE.
8. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS TO THESE MEASURES:

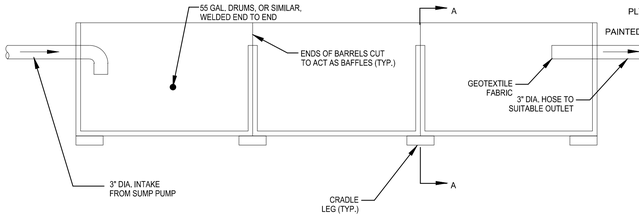
SILT FENCE

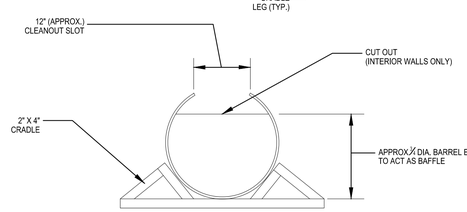
SLOPE	SLOPE LENGTH L_S(ft)	HORIZ. LENGTH L_H (ft)
2:1	50	42
3:1	80	79
4:1	130	128
5:1	200	200
>5:1	260	260



C500 / 102 SILT FENCE
NOT TO SCALE

C500 / 103 TEMPORARY PLASTIC BARRIER FENCE
NOT TO SCALE



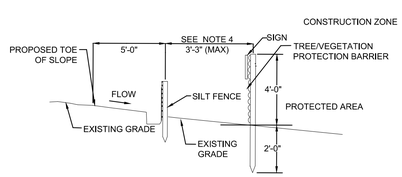


SECTION A-A

CONSTRUCTION NOTES

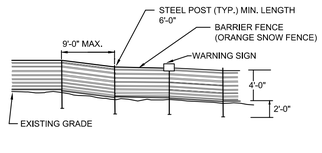
1. CLEAN OUT THE SEDIMENT TANK WHEN ONE THIRD (1/3) FILLED WITH SILT.
2. STEEL DRUMS ARE USED AS AN EXAMPLE DUE TO THEIR READY AVAILABILITY, ANY TANK MAY BE USED, PROVIDING THAT THE VOLUME REQUIREMENTS SHOWN IN PLAN VIEW ABOVE ARE MET.
3. ALL SEDIMENT COLLECTED IN THE TANK SHALL BE DISPOSED OF PROPERLY OFFSITE BY THE CONTRACTOR, OR AS APPROVED BY THE ENGINEER.
4. PROVIDE ONE TANK FOR EACH 3 INCH PUMP DISCHARGE. PUMP DISCHARGE LINES SHALL NOT EXCEED 3 INCHES.

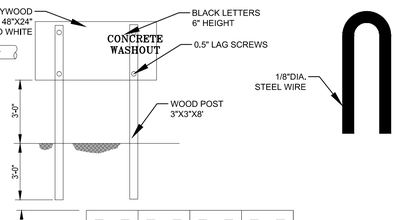
C500 / 104 PORTABLE SEDIMENT TANK
NOT TO SCALE

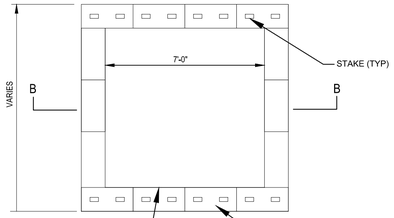


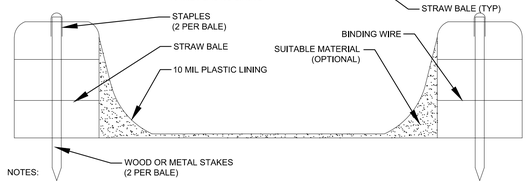
WARNING SIGN DETAIL

1. SEE SECTION 312500 FOR WARNING SIGN (SIZE, LETTERING AND MOUNTING INTERVALS)
2. SEE SECTION 312500 FOR PROPER ATTACHMENT TO POSTS AND OVERLAPPING
3. TREE/VEGETATION PROTECTION BARRIER SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS OR A.O.B.E. PRIOR TO BEGINNING ANY WORK IN THESE AREAS
4. IN AREAS ADJACENT TO OR WITHIN A WETLAND THE ENGINEER IN CHARGE MAY REQUIRE THE TREE/VEGETATION PROTECTION BARRIER TO BE PLACED IN COMBINATION WITH THE SILT FENCE
5. THE ENGINEER IN CHARGE MAY EXTEND THE DISTANCE BETWEEN THE PROPOSED TOE-OF-SLOPE AND SILT FENCE PROVIDING IT DOES NOT TAKE PLACE IN A WETLAND/WATERBODY AND DOES NOT REQUIRE THE REMOVAL OF EXISTING VEGETATION.



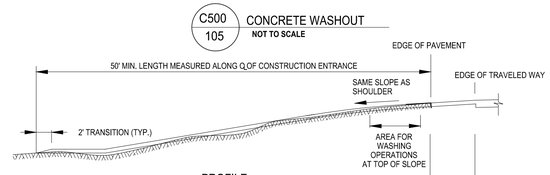






NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 5-FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. LOCATE WASHOUT AREA AT LEAST 50-FEET FROM STORM DRAINS, OPEN DITCHES, OR WATER BODIES. DO NOT ALLOW RUNOFF FROM THIS AREA BY CONSTRUCTING A TEMPORARY PIT OR BERMED AREA LARGE ENOUGH FOR LIQUID AND SOLID WASTE.
4. WASH OUT WASTES INTO THE TEMPORARY PIT WHERE THE CONCRETE CAN SET, BE BROKEN UP, AND THEN DISPOSED PROPERLY.
5. TEMPORARY CONCRETE WASHOUT FACILITY (TYPE ABOVE GRADE) SHOULD BE CONSTRUCTED AS SHOWN ON THE DETAILS WITH A RECOMMENDED MINIMUM LENGTH AND MINIMUM WIDTH OF 10-FEET, BUT WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
6. STRAW BALES, WOOD STAKES, AND SANDBAG MATERIALS SHOULD CONFORM TO THE PROVISIONS IN THE EROSION AND SEDIMENT CONTROL SPECIFICATION.
7. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
8. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENDED CONCRETE SHOULD BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.
9. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.
10. TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEBOARD OF 4-INCHES. MAINTAINING TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD INCLUDE REMOVING AND DISPOSING OF HARDENED CONCRETE AND RETURNING THE FACILITIES TO A FUNCTIONAL CONDITION. HARDENED CONCRETE MATERIALS SHOULD BE REMOVED AND DISPOSED OF.
11. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL.
12. CONTRACTOR SHALL ESTABLISH A CONCRETE WASHOUT ON THE SITE WHENEVER CONCRETE POURING OPERATIONS ARE TAKING PLACE.

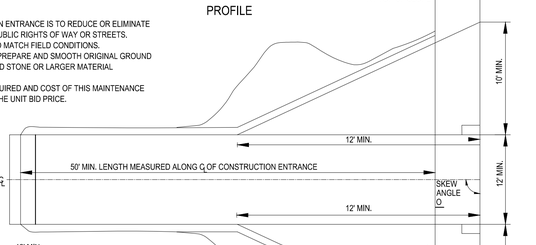
C500 / 105 CONCRETE WASHOUT
NOT TO SCALE



PROFILE

CONSTRUCTION NOTES

1. THE PURPOSE OF THE CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.
2. MODIFICATIONS MAY BE REQUIRED TO MATCH FIELD CONDITIONS.
3. THE CONTRACTOR SHALL GRADE TO PREPARE AND SMOOTH ORIGINAL GROUND FOR PLACEMENT OF 6" OF #3 CRUSHED STONE OR LARGER MATERIAL UP TO THE EDGE OF PAVEMENT.
4. PERIODIC MAINTENANCE MAY BE REQUIRED AND COST OF THIS MAINTENANCE WILL BE INCLUDED IN THE PRICE OF THE UNIT BID PRICE.



PLAN

SECTION

C500 / 106 TYPICAL CONSTRUCTION ENTRANCE
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EVERGREEN TOWNHOMES

M&R ENTITIES
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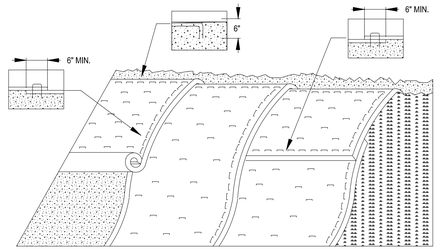
EROSION AND SEDIMENT CONTROL DETAILS

C500



APPLICATION NOTES

A. THE PURPOSE OF EROSION MATTING ON SLOPES IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION
B. EROSION CONTROL MATTING SHALL BE USED FOR THE FOLLOWING REASONS:
   * SLOPES GREATER THAN 3H:1V, WHERE SHOWN ON THE PLANS, OR WHERE ORDERED BY ENGINEER
   * AREAS WHERE SEED AND MULCH WILL NOT STAY IN PLACE ALONE
   * WHERE SEEDING IS OUTSIDE THE GROWING SEASON.

GENERAL NOTES

1. GRADE AND SMOOTH THE SLOPE TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.

2. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.

3. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ANCHOR LEADING AND TRAILING EDGES AS SHOWN ON THE MANUFACTURERS INSTALLATION INSTRUCTIONS.

4. UNROLL EROSION MATTING VERTICALLY DOWN SLOPE IN THE DIRECTION OF WATER FLOW.

5. OVERLAP UPPER MATTING OVER LOWER MATTING AS SHOWN, AND AS DIRECTED BY MANUFACTURER.

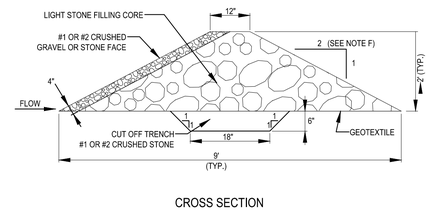
6. OVERLAP ADJACENT MATTING AS SHOWN, AND AS DIRECTED BY MANUFACTURER.

7. CUT EXCESS MATTING AT END OF SLOPE AND ANCHOR THE END.

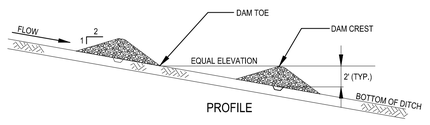
8. EROSION MATTING SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT OF ½" OR GREATER.

9. EROSION MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.

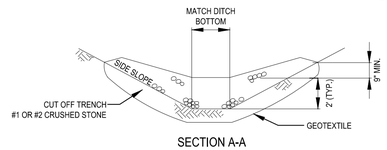
C501/100 ROLLED EROSION CONTROL MAT
NOT TO SCALE



CROSS SECTION



PROFILE

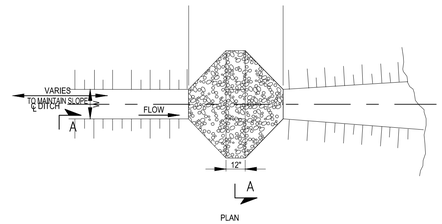


SECTION A-A

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF A CHECK DAM IS TO REDUCE EROSION IN A CHANNEL BY REDUCING FLOW VELOCITY IN THE CHANNEL.
B. CHECK DAMS WILL CAPTURE SEDIMENT THAT FALLS OUT OF SUSPENSION BEHIND THE CHECK DAM DUE TO DECREASED VELOCITY.
C. IF CHECK DAM IS PLACED OVER EROSION CONTROL BLANKETING, DO NOT INSTALL CUT OFF TRENCH.

C501/101 STONE CHECK DAM
NOT TO SCALE



PLAN

CHECK DAM VOLUMES	
SIDE SLOPE	VOLUME (cu. ft.)
1:2	28.2 ±
1:3	42.4 ±
1:4	56.5 ±
1:6	84.8 ±

** BASED ON V SHAPED DITCH SECTION. FOR TRAPEZOIDAL DITCH, ADD 31.8 cu.ft./ft. OF DITCH

STONE/GRAVEL BAG/STONE BAG CHECK DAM PLACEMENT INTERVAL	
DITCH SLOPE	PLACEMENT INTERVAL **
1 %	200'
2 %	100'
3 %	65'
4 %	50'
5 %	40'
6 %	33'
8 %	25'
10 %	20'

** BASED ON 2' TYPICAL HEIGHT

CONSTRUCTION NOTES

1. DRAINAGE AREAS:
   MAXIMUM DRAINAGE AREA TRIBUTARY TO STONE CHECK DAM SHALL BE 2 ACRES.
2. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS, AFTER EACH RAINFALL OF 1/2" OR MORE WITHIN A 24 HOUR PERIOD, OR DAILY DURING PROLONGED RAINFALL. MEASURES SHALL BE CLEANED AND REPAIRED AS REQUIRED.
3. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
4. COURSE AGGREGATE FACING MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF SIZE DESIGNATION FOR NO. 1 OR NO. 2 CRUSHED STONE. STONE FILLING CORE MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF LIGHT STONE FILLING.

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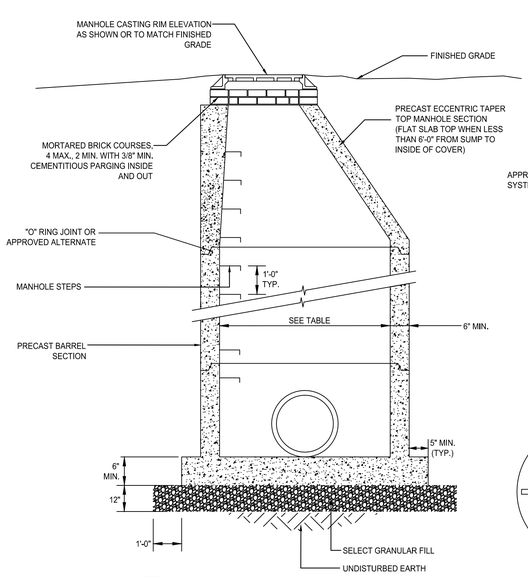
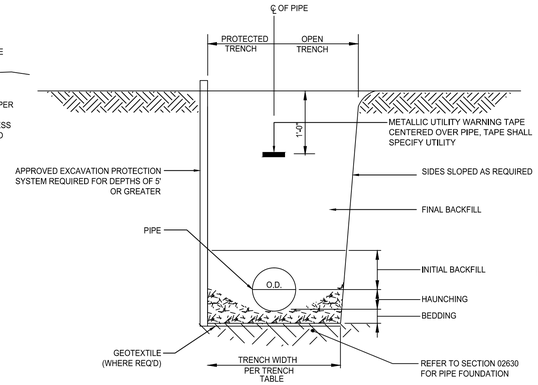
EROSION AND SEDIMENT CONTROL DETAILS

C501



NOTE:
1. ENTIRE STRUCTURE SHALL BE ENTIRELY BACKFILLED WITH SELECT GRANULAR FILL

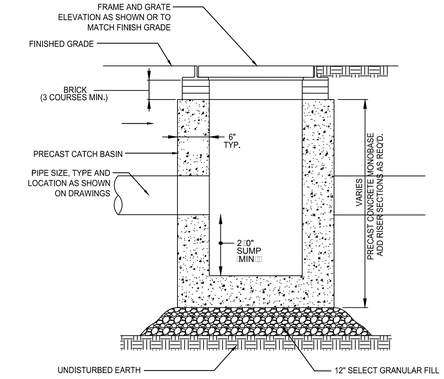
C502 / 100 STORM AND SANITARY MANHOLE DETAIL
NOT TO SCALE



STORM/SANITARY SEWER TRENCH TABLE					
TRENCH EXCAVATION STORM/SANITARY AND BACKFILL ENVELOPE CONSTRUCTION					
PIPE DIAMETER (IN)	MINIMUM TRENCH WIDTH (IN)	MINIMUM BEDDING DEPTH (IN)	MINIMUM INITIAL BACKFILL DEPTH (IN)	MINIMUM FINAL BACKFILL DEPTH (IN)	MINIMUM HAUNCHING DEPTH (IN)
1"-8"	O.D.+48"	6"	O.D./2+12"	12"	O.D./2
12"	O.D.+48"	6"	O.D./2+12"	12"	O.D./2
15"	O.D.+48"	9"	O.D./2+12"	12"	O.D./2
18"	O.D.+48"	10"	O.D./2+12"	12"	O.D./2
24"	O.D.+48"	12"	O.D./2+12"	12"	O.D./2
30"	O.D.+60"	12"	O.D./2+12"	12"	O.D./2
36"	O.D.+60"	12"	O.D./2+12"	12"	O.D./2

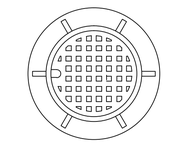
NOTES:
1. BEDDING, HAUNCHING AND INITIAL BACKFILL MATERIAL SHALL BE SELECT GRANULAR FILL.
2. IN UNSUITABLE MATERIAL OR ROCK, PROVIDE BEDDING AND FOUNDATION IN ACCORDANCE WITH SPECIFICATION 312000
3. BACKFILL ENVELOPE COMPACTION REQUIREMENTS: 95% MIN. OF MAX MODIFIED PROCTOR DENSITY.
4. SURFACE TREATMENT TO BE PER REQUIREMENTS OF TRENCH LOCATION.
5. UNDER PAVEMENT AND WALKWAY SECTIONS THE FINAL BACKFILL SHALL BE SELECT GRANULAR FILL. IN GRASS AREAS, FINAL BACKFILL SHALL BE SUITABLE MATERIAL.

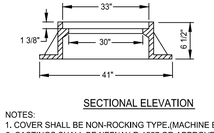
C502 / 101 STORM AND SANITARY TRENCH DETAIL
NOT TO SCALE



NOTES:
1. PRECAST REINFORCED CONCRETE SECTIONS SHALL CONFORM TO ASTM C-478 AND H20 REQUIREMENTS. CAST-IN-PLACE CONCRETE MAY BE SUBSTITUTED WHEM APPROVED BY OWNERS REPRESENTATIVE PRIOR TO CONSTRUCTION.
2. STRUCTURE SHALL BE BACK-FILLED WITH SELECT GRANULAR FILL (FOR ENTIRE EXCAVATION)
3. EXCAVATION LIMITS SHALL BE 2' OUTSIDE OF STRUCTURE.

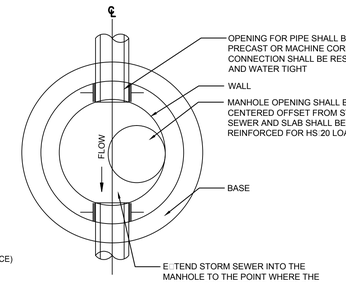
C502 / 102 PRECAST CATCH BASIN DETAIL
NOT TO SCALE



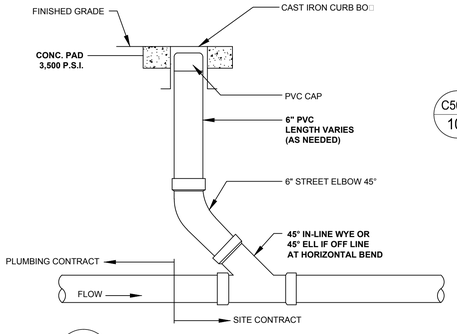


NOTES:
1. COVER SHALL BE NON-ROCKING TYPE.(MACHINE BEARING SURFACE)
2. CASTINGS SHALL BE NEENAH R-1557 OR APPROVED EQUAL.
3. STORM CASTING SHALL HAVE LABEL "STORM".
4. SANITARY CASTING SHALL HAVE LABEL "SANITARY".

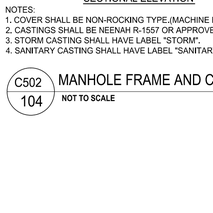
C502 / 104 MANHOLE FRAME AND COVER
NOT TO SCALE

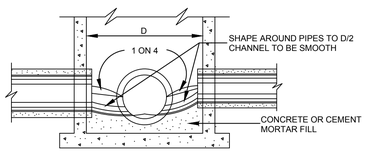


C502 / 105 STORM SEWER MANHOLE PLAN
NOT TO SCALE



C502 / 106 GRAVITY SEWER CLEANOUT DETAIL
NOT TO SCALE

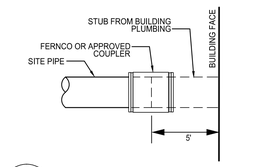




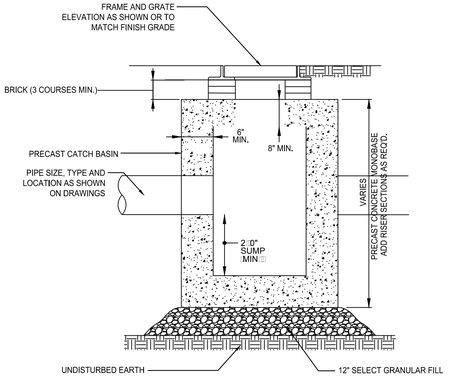
WHEN PIPES ARE STRAIGHT AT THE SAME ELEVATION THE PIPES MAY BE USED FOR CHANNELI ATION, WITH THE TOP HALF OF PIPE BRO EN OUT AND THE CONCRETE OR CEMENT MORTAR FILL PUT IN ON A 1 ON 4 SLOPE TO INSIDE WALL OF MANHOLE.

RADIUS FOR CHANNELI ATION, INSIDE RADIUS 6" MINIMUM.

C502 / 103 SANITATY SEWER MANHOLE PLAN
NOT TO SCALE



C502 / 108 TYPICAL BUILDING CONNECTION
NOT TO SCALE



NOTES:
1. PRECAST REINFORCED CONCRETE SECTIONS SHALL CONFORM TO ASTM C-478 AND H2O REQUIREMENTS. CAST-IN-PLACE CONCRETE MAY BE SUBSTITUTED WHEN APPROVED BY OWNERS REPRESENTATIVE PRIOR TO CONSTRUCTION.
2. STRUCTURE SHALL BE BACK-FILLED WITH SELECT GRANULAR FILL.
3. EXCAVATION LIMITS SHALL BE 2' OUTSIDE OF STRUCTURE.

C502 / 109 PRECAST CATCH BASIN DETAIL
NOT TO SCALE

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STORM & SANITARY DETAILS

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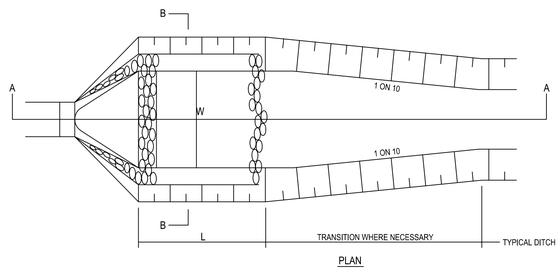
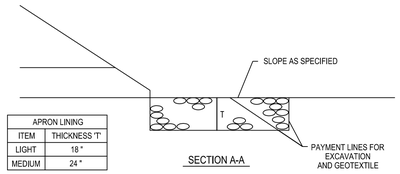


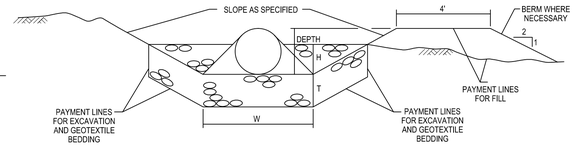
PLAN

TYPICAL APRON FOR A CULVERT WITH AN END SECTION



APRON LINING	
ITEM	THICKNESS 'T'
LIGHT	18 "
MEDIUM	24 "

SECTION A-A



SECTION B-B

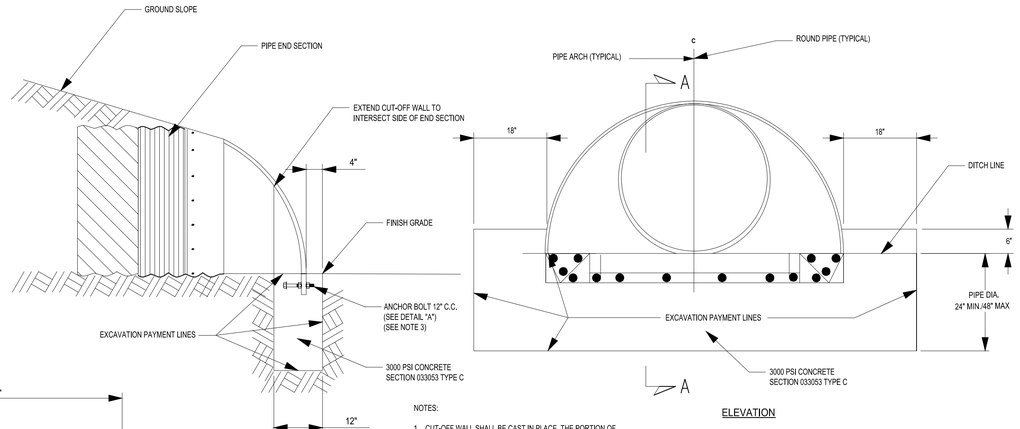
APRON TABLE

NUMBER	LENGTH 'L' (IN)	WIDTH 'W' (IN)	LINING MATERIAL	LINING HEIGHT 'H' (IN)	SIDE SLOPES	REMARKS
A-1	72	68	MEDIUM	18	1:2	
A-2	72	68	MEDIUM	18	1:2	
A-3	96	84	MEDIUM	24	1:2	

NOTE:
GEOTEXTILE BEDDING WILL BE ADDED TO LINE THE OUTLET OF STONE FILLED APRONS FOR A MAXIMUM DISTANCE OF 10 FEET.

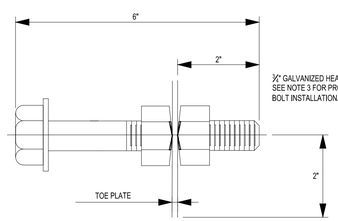
NOTES:
1. 'L' = LENGTH OF APRON
2. 'W' = WIDTH OF APRON
3. 'T' = THICKNESS OF APRON LINING
4. 'H' = MAXIMUM HEIGHT OF APRON LINING
5. DUMPED STONE WILL BE PLACED IN SUCH A MANNER AS TO FORM AN IRREGULAR SURFACE.

C503 / 100 STONE APRON
NOT TO SCALE



SECTION A-A

ELEVATION



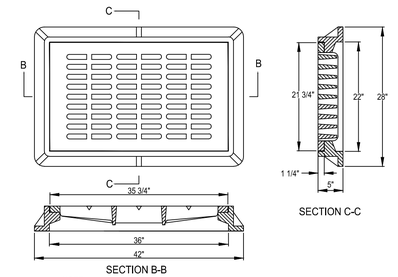
DETAIL A

½" GALVANIZED HEAVY HEX BOLTS SEE NOTE 3 FOR PROPER NUT AND BOLT INSTALLATION.

NOTES:
1. CUT-OFF WALL SHALL BE CAST IN PLACE. THE PORTION OF THE CONCRETE CUT-OFF WALL BELOW THE FINAL GRADE LINE SHALL BE CAST AGAINST UNDISTURBED SOIL IF FEASIBLE. THE CONCRETE CUT-OFF WALL SHALL BE POURED AFTER THE END SECTION IS INSTALLED.
2. VARIES BASED ON DIMENSIONS OF SPECIFIED END SECTION.
3. ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF NYSDOT STANDARD SPECIFICATION SECTION §707-20. THE NUTS AND BOLTS SHALL BE SO ASSEMBLED THAT IN THE FINAL ASSEMBLY, THE BOLT AND ONE OF THE NUTS IS EMBEDDED IN CONCRETE, THAT THE CHAMFERED FACES OF THE NUTS FACE EACH OTHER, AND SECURE THE TOE PLATE BETWEEN THEM.

STRUCTURE NO.	PIPE DIAMETER (INCHES)	END SECTION DIAMETER (INCHES)	END SECTION WIDTH (INCHES)	CUTOFF WALL WIDTH, W (INCHES)	CUTOFF WALL DEPTH, D (INCHES)
ES-1	18	24	68	104	24
ES-2	18	24	68	104	24
ES-3	24	30	80	120	24

C503 / 101 END SECTION AND CUTOFF WALL
NOT TO SCALE



SECTION B-B

SECTION C-C

NOTE:
FRAME AND GRATE SHALL BE EAST JORDAN IRON WORKS 44067231C01 (BICYCLE SAFE) OR APPROVED EQUAL.

C503 / 102 BICYCLE SAFE FRAME AND GRATE
NOT TO SCALE

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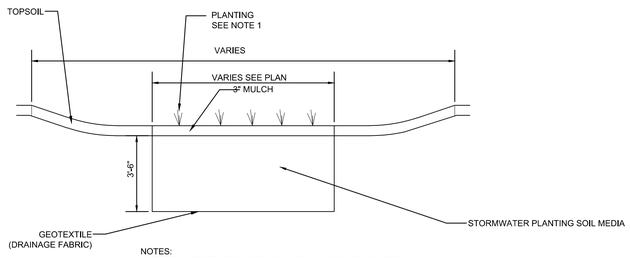
STORM SEWER DETAILS

C503



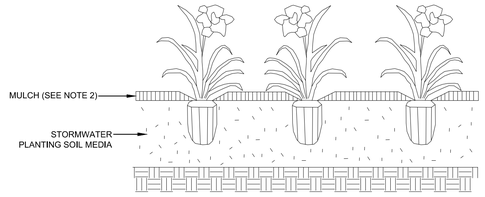
NOTES:
1. REFER BIORETENTION AREA PLANTING TABLES BELOW FOR PLANTINGS SCHEDULE.
2. PLANTING SOIL MEDIA SHALL MEET CRITERIA STATED IN THE NEW YORK STATE DEPARTMENT OF CONSERVATION STORM WATER DESIGN MANUAL, AND SECTION 312513 - STORMWATER TREATMENT SYSTEMS.

C504/100 INFILTRATION BIORETENTION AREA
NOT TO SCALE

BIORETENTION AREA TABLE		
BIORETENTION AREA	SI□E □SF□	PRETREATMENT SI□E □SF□
BA□1	650	165

BA-1 PLANTING PLAN				
COMMON NAME	SCIENTIFIC NAME	SPACING	□TY	SI□E
SWITCH GRASS	PANICUM VIRGATUM	2 FT	165	PLUG
COMMON THREE S□UARE	SCIRPUS PUNGENS	2 FT	165	PLUG
BLUE FLAG IRIS	IRIS VERSICOLOR	2 FT	165	PLUG

C504/101 BIORETENTION AREA PLANTING TABLES
NOT TO SCALE



NOTES:

1. IF A PLANT IS DAMAGED DURING WORK OPERATIONS THE CONTRACTOR SHALL REPLACE THE PLANT AT NO COST TO THE COUNTY.

2. MULCH SHALL BE A MAXIMUM OF 3" DEEP AND TAPERED DOWN TO LEAVE THE ROOT FLARE EXPOSED. WHEN PLANTING ON SLOPES, DOWNHILL SIDE MUST BE STABILIZED APPROPRIATELY OR SEEDING DOWNHILL SIDE MAY BE SPECIFIED.

C504/102 BED PLANTING
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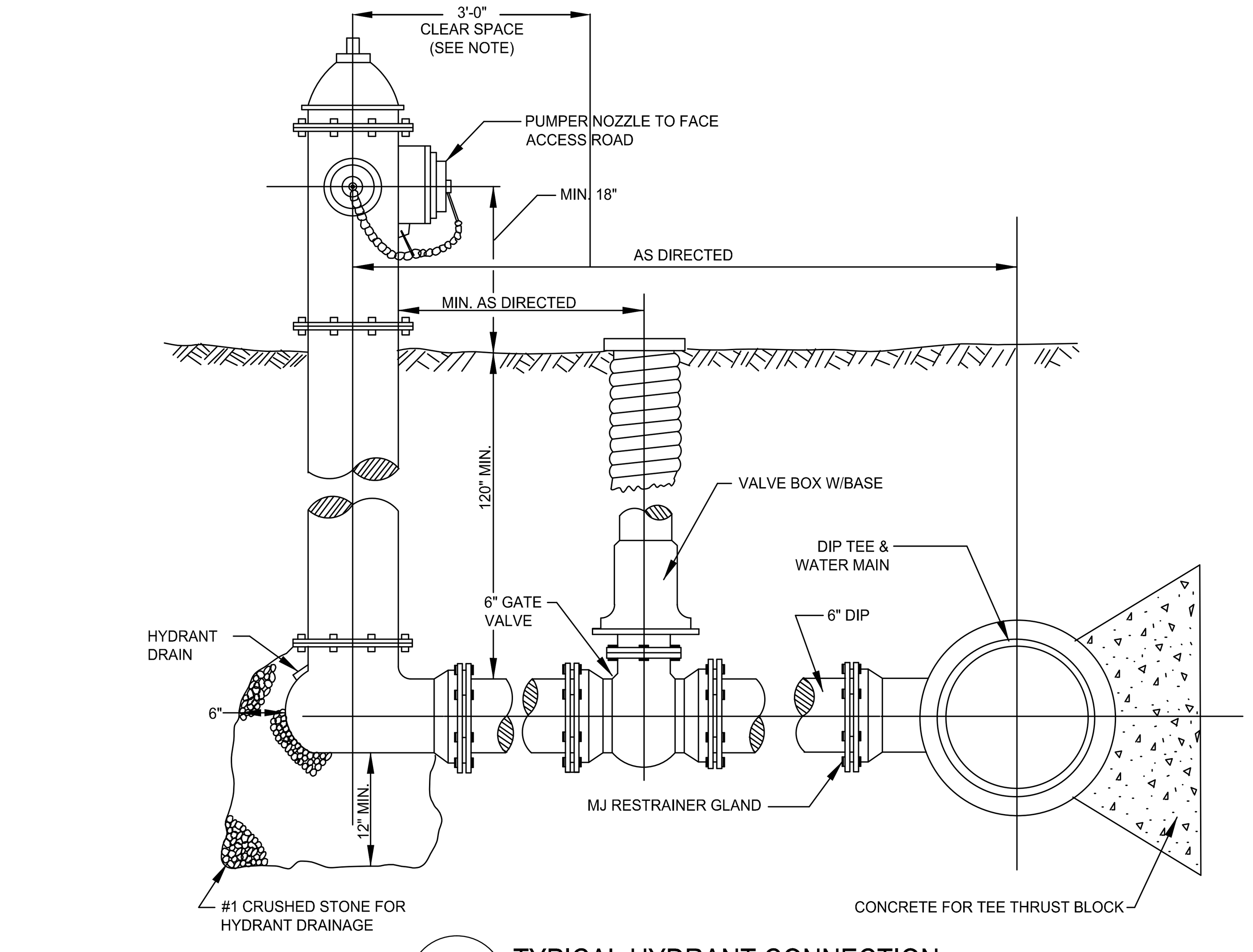
STORMWATER MANAGEMENT DETAILS

C504

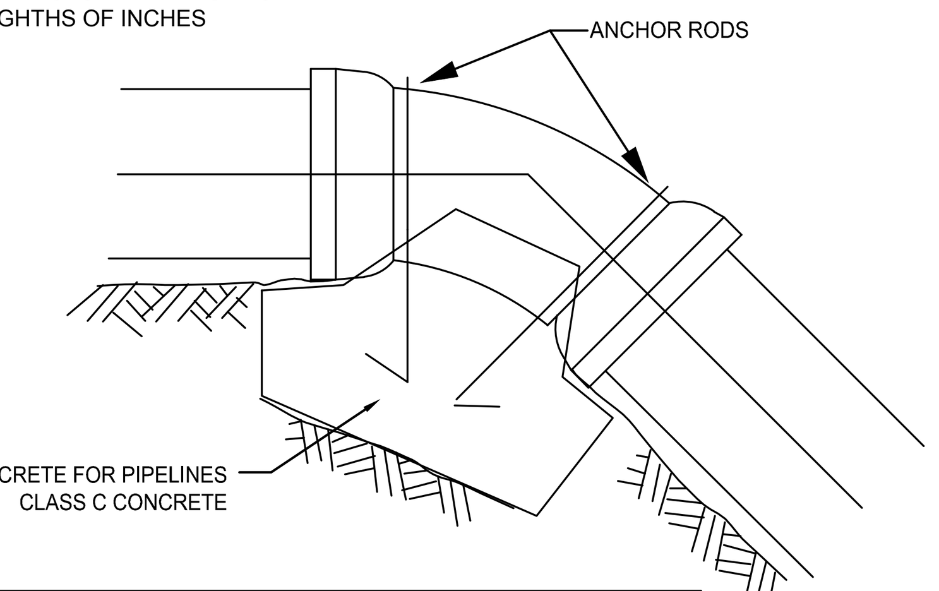


NOTE: HYDRANT SHALL HAVE MIN. 3' 0" CLEAR ZONE AROUND THEM ON ALL SIDES MEASURED FROM END OF CAPS

C505 100 TYPICAL HYDRANT CONNECTION
NOT TO SCALE

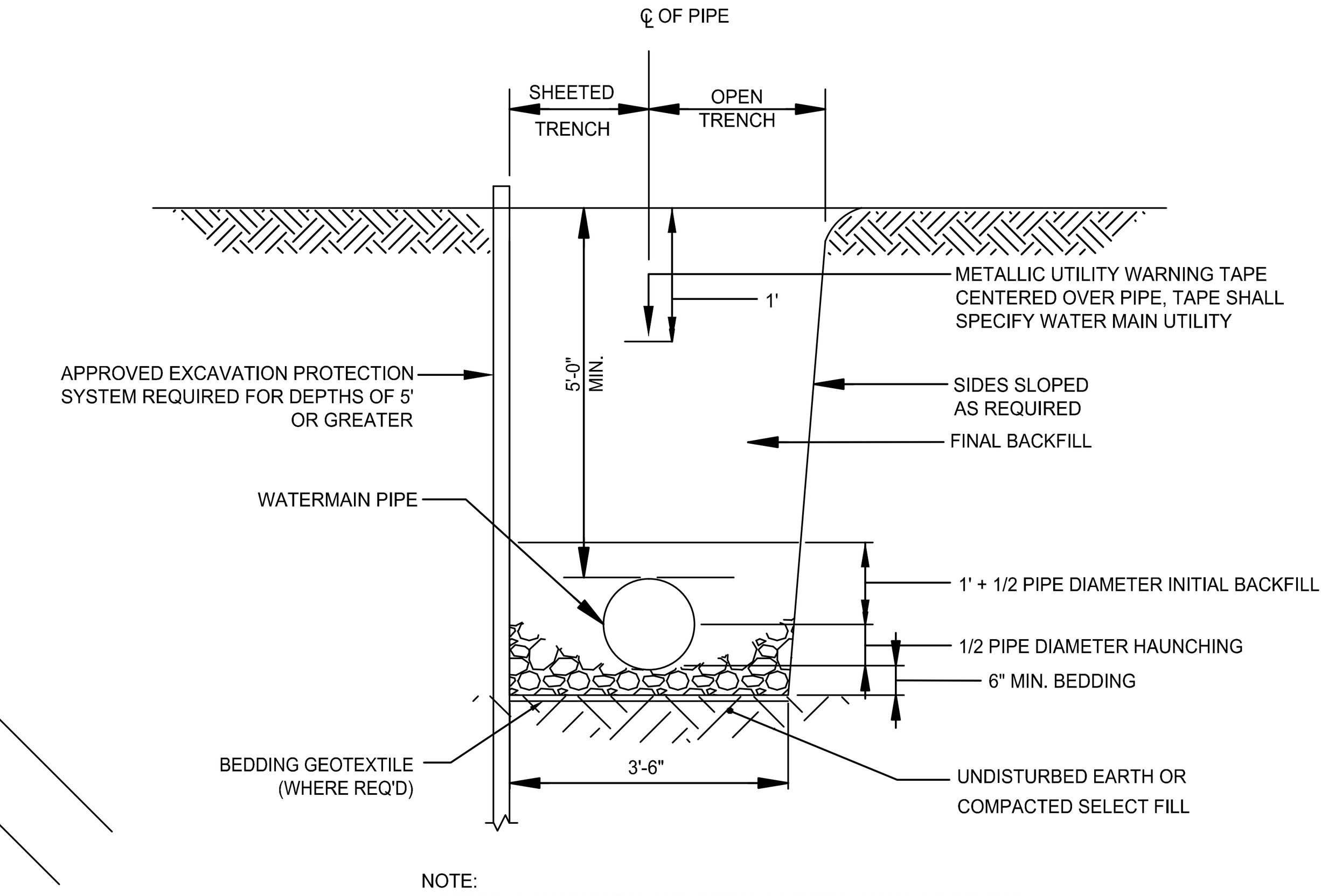
ANCHOR ROD SCHEDULE FOR GRAVITY BLOC□S		
PIPE SI□E	RODS	MIN□EMBEDMENT LENGTH
4	1 □□10 □3□	6"
6	1 □□10 □3□	6"
8	2 □□13 □4□	6"
10	2 □□13 □4□	6"
12	2 □□16 □5□	7"
14	2 □□19 □6□	8"
16	2 □□19 □6□	8"
18	2 □□22 □7□	10"
20	2 □□25 □8□	11"
24	2 □□29 □9□	12"

NUMBERS IN PARENTHESES ARE BAR SI□ES MAR□ED IN EIGHTHS OF INCHES



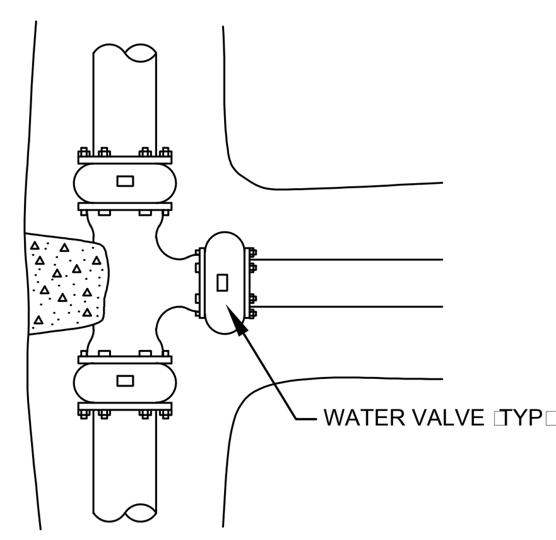
MINIMUM GRAVITY BLOC□ VOLUMES FOR VERTICAL BENDS □c□□										
	PIPE SI□E									
FITTING	4	6	8	10	12	14	16	18	20	24
11 1/4°	3□3	10	16□7	23□3	33□3	43□3	56□7	70	86□7	123□3
22 1/2°	10	16□7	30	46□7	63□3	86□7	113□3	140	173□3	246□7
45°	16□7	33□3	60	90	126□7	170	220	276□7	340	483□3
90°	30	63□3	110	166□7	233□3	313□3	406□7	510	626□7	896□7

C505 101 VERTICAL BEND GRAVITY BLOCK ELEVATION
NOT TO SCALE

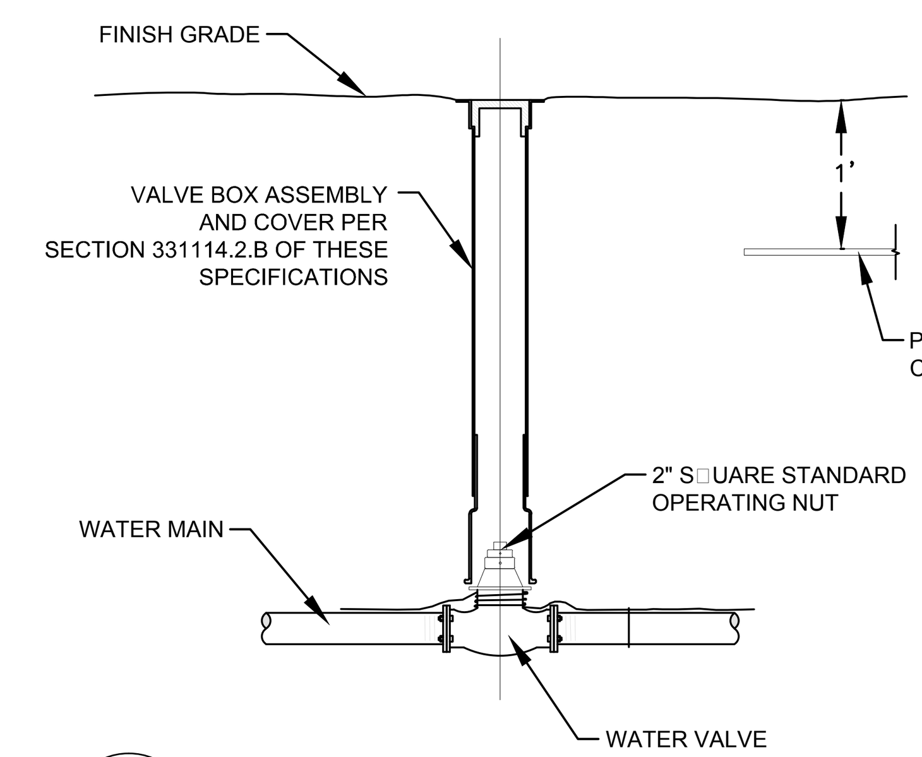


NOTE:
1. BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE SELECT GRANULAR FILL.
2. FINAL BACKFILL SHALL BE SUITABLE MATERIAL IN GRASS AREAS.
3. FINAL BACKFILL SHALL BE SELECT GRANULAR FILL WITHIN AND 5 FEET EACH SIDE OF ALL HARD SURFACES (ASPHALT, CONCRETE AND GRAVEL PAVEMENT).

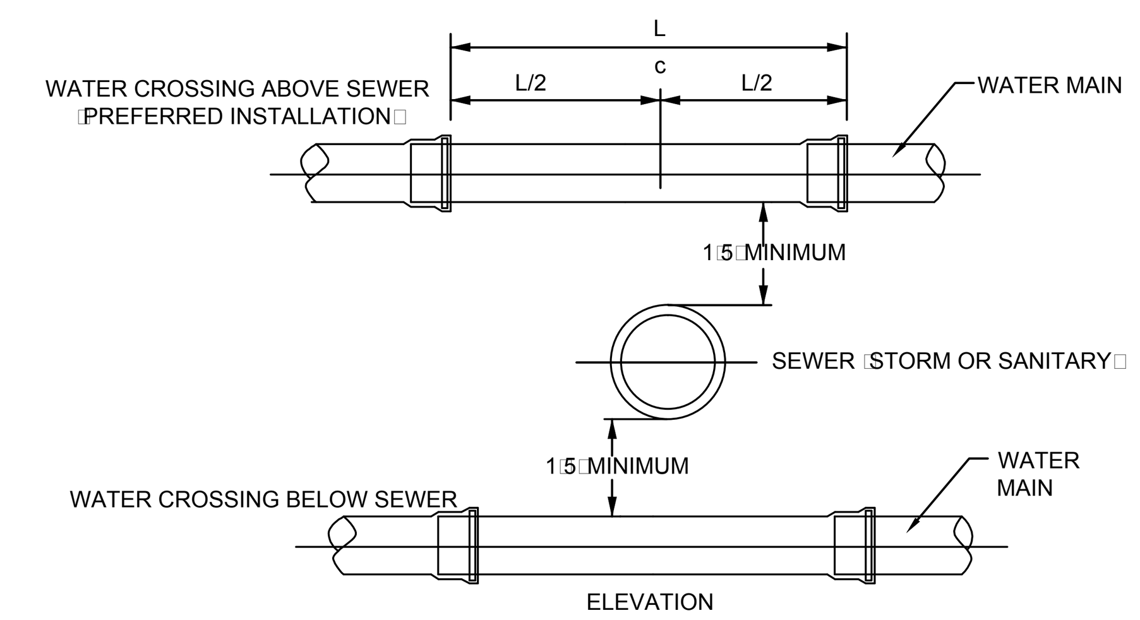
C505 102 WATERMAIN TRENCH DETAIL
NOT TO SCALE



C505 103 WATER VALVE CLUSTER
NOT TO SCALE



C505 104 WATER VALVE BOX INSTALLATION DETAIL
NOT TO SCALE



C505 105 WATERMAIN/SEWER CROSSING
NOT TO SCALE

NOTES:

1□THRUST RESTRAINT USING THRUST BLOC□S AND TIE RODS ARE SHOWN ON THESE SHEETS□ RESTRAINED JOINTS AND RETAINER GLANDS ARE ALSO ACCEPTABLE METHODS□THE THRUST RESTRAINT METHOD SHALL BE AS RE□UIRED BY THE SYSTEM OWNER□

2□IF THE OWNER OF THE WATER SYSTEM RE□UIRES A METHOD THAT RESTRAINS INDIVIDUAL JOINTS, EACH JOINT THAT FALLS WITHIN THE MINIMUM RESTRAINED LENGTH, MEASURED FROM THE CENTER OF THE FITTING, AS SHOWN ON THESE SHEETS SHALL BE RESTRAINED, AND SHALL WITHSTAND THE MA□IMUM PRESSURE APPLIED TO THE SYSTEM□

3□CONCRETE SHALL NOT BE PLACED UNDER WATER□THE CONTRACTOR SHALL DEWATER THE E□CAVATION OR PLACE NYSDOT TYPE G CONCRETE USING APPROPRIATE UNDERWATER PLACEMENT TECHNI□UES□

4□CONCRETE FOR THRUST BLOC□S SHALL NOT BE ALLOWED TO COVER OR INTERFERE WITH JOINT OR RESTRAINT HARDWARE□PLASTIC SHEETING OR BUILDING FELT MAY BE PLACED OVER PIPE FOR FITTINGS TO PREVENT CONCRETE FROM ADHERING TO SURFACES□ CONCRETE FOR THRUST BLOC□S SHALL BE POURED AGAINST UNDISTURBED SOIL□

5□FOR BENDS, BEARING AREA SHALL BE PARALLEL TO THE EDGE OF THE FITTING AT THE FITTING MIDPOINT□

6□FOR TEES, BEARING AREA SHALL BE PERPENDICULAR TO THE BRANCH □SINGLE LEG□A□IS□

7□FOR REDUCERS, BEARING AREA SHALL BE PERPENDICULAR TO THE FITTING A□IS□THE MINIMUM THIC□NESS ALONG THE FITTING A□IS SHALL BE 1□t OR THE LENGTH BETWEEN THE BELLS, WHICHEVER IS SMALLER□

8□TO DETERMINE RE□UIRED SI□ES FOR DIFFERENT CONDITIONS, MULTIPLY THE DIMENSION BY A FACTOR OF THE SPECIFIC VALUE DIVIDED BY A STANDARD VALUE□

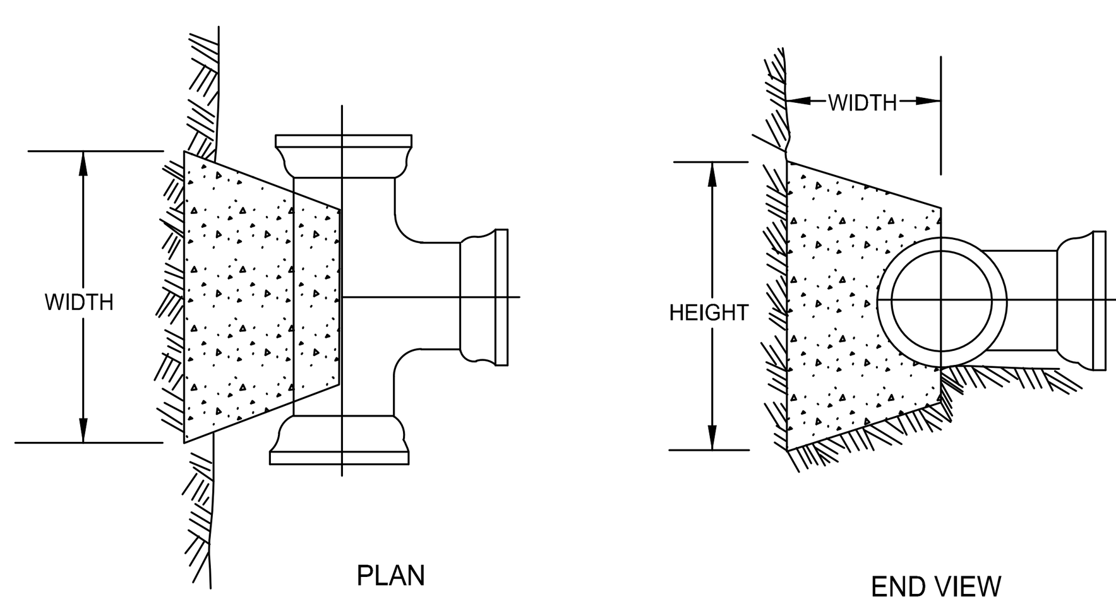
E□AMPLE:
FOR 12 NPS 45° BEND WITH 100 psi TEST PRESSURE:

AREA RE□UIRED □ □4□7□□ 2□3□□ □100 / 200□□ 5□4 □t□2
WIDTH □3□3 □t
HEIGHT □1□7 □t

9□ ALL FITTINGS SHALL BE RESTRAINED WITH BOTH THRUST BLOC□S AND MECHANICAL JOINT RETAINER GLANDS□

10□ALL PIPE JOINTS WITHIN THE RESTRAINED LENTGH OF PIPE SHALL BE RESTRAINED WITH MECHANICAL JOINT RETAINER GLANDS□

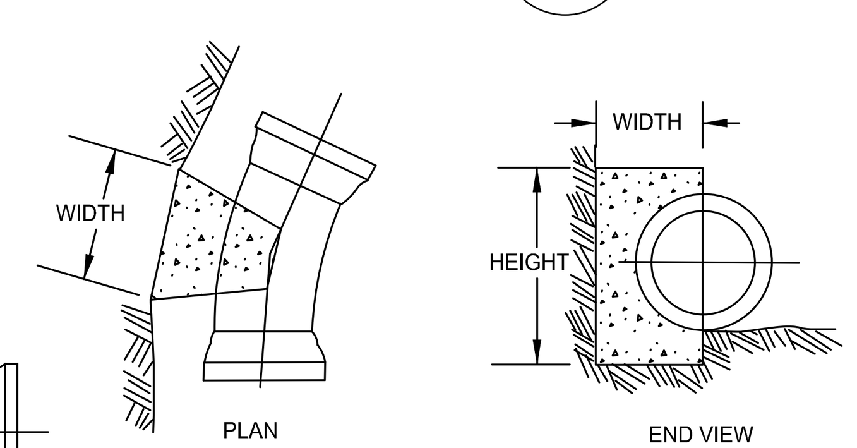
11□ALL REFERENCES TO NYSDOT STANDARD SPECIFICATIONS, OR STANDARD SPECIFICATIONS, MEAN THE NEW YOR□ STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, CONSTRUCTION AND MATERIALS, OFFICE OF ENGINEERING □JANUARY 1, 2016□ ALL REFERENCE TO THE NYSMUTCD SHALL MEAN THE NEW YOR□ STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 17B NYCRR□



SIZE	WIDTH	HEIGHT	SIZE	WIDTH	HEIGHT
4	24"	12"	14	68"	40"
6	36"	16"	16	80"	44"
8	40"	24"	18	92"	48"
10	52"	28"	20	104"	52"
12	64"	32"	24	124"	64"

NOTE:
1. THRUST BLOCKS SHALL BE CONSTRUCTED OF CONCRETE FOR PIPELINES CLASS C CONCRETE.

C505 106 TEE/DEAD END THRUST BLOCK DETAILS
NOT TO SCALE

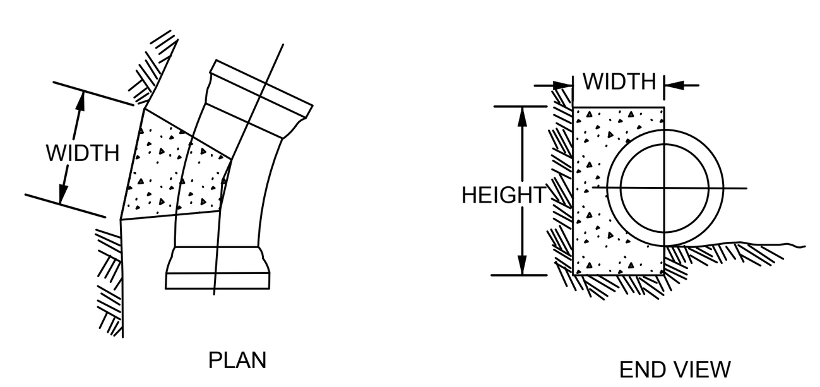


SIZE	WIDTH	HEIGHT	SIZE	WIDTH	HEIGHT
4	12"	5"	14	36"	16"
6	14"	8"	16	40"	20"
8	20"	10"	18	44"	20"
10	24"	12"	20	44"	24"
12	28"	14"	24	56"	28"

NOTE:
1. THRUST BLOCKS SHALL BE CONSTRUCTED OF CONCRETE FOR PIPELINES CLASS C CONCRETE.
2. THRUST BLOCKS SIZES AND MINIMUM RESTRAINED LENGTHS SHOWN ON THESE SHEETS ARE BASED UPON THE FOLLOWING STANDARD CONDITIONS:

1.5 SAFETY FACTOR
5 FT DEPTH OF COVER
200 PSI WATER SYSTEM TEST PRESSURE
14 PSI SOIL BEARING CAPACITY
90 PCF SOIL UNIT WEIGHT

C505 107 11.25° BEND THRUST BLOCK
NOT TO SCALE



SI□E	WIDTH	HEIGHT	SI□E	WIDTH	HEIGHT
4 NPS	14"	8"	14 NPS	44"	24"
6 NPS	24"	10"	16 NPS	56"	26"
8 NPS	28"	14"	18 NPS	60"	30"
10 NPS	36"	16"	20 NPS	60"	36"
12 NPS	40"	20"	24 NPS	76"	40"

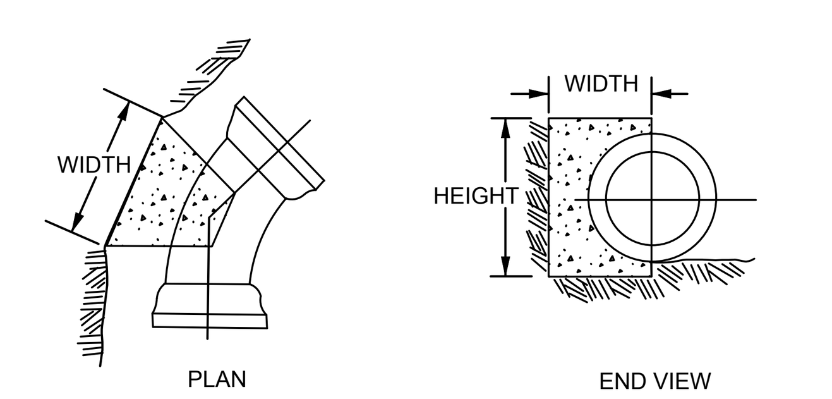
NOTE:
1. THRUST BLOCKS SHALL BE CONSTRUCTED OF CONCRETE FOR PIPELINES CLASS C CONCRETE.
2. THRUST BLOCKS SIZES AND MINIMUM RESTRAINED LENGTHS SHOWN ON THESE SHEETS ARE BASED UPON THE FOLLOWING STANDARD CONDITIONS:

1.5 SAFETY FACTOR
5 FT DEPTH OF COVER
200 PSI WATER SYSTEM TEST PRESSURE
14 PSI SOIL BEARING CAPACITY
90 PCF SOIL UNIT WEIGHT

MINIMUM RESTRAINED LENGTH OF PIPE □t□										
FITTING	NOMINAL PIPE SI□E									
HORI□ONTAL BENDS	4 NPS	6 NPS	8 NPS	10 NPS	12 NPS	14 NPS	16 NPS	18 NPS	20 NPS	24 NPS
11 1/4°	1□3□	2□0□	2□7□	3□0□	3□7□	4□0□	4□7□	5□0□	5□7□	6□3□
22 1/2°	1□3□	2□0□	2□7□	3□0□	3□7□	4□0□	4□7□	5□0□	5□7□	6□7□
45°	3□0□	4□0□	5□3□	6□3□	7□7□	8□7□	9□7□	10□7□	11□7□	13□7□
90°	7□0□	10□0□	12□7□	15□7□	18□3□	31□0□	23□3□	26□0□	28□3□	33□0□
DEAD ENDS	8□7□	12□7□	16□3□	16□3□	23□3□	26□7□	30□0□	33□3□	36□7□	43□0□

NOTE: FOR POLYETHYLENE WRAPPED PIPE, MULTIPLY VALUES IN TABLE BY 1□45

C505 108 22.5° BEND THRUST BLOCK
NOT TO SCALE



SI□E	WIDTH	HEIGHT	SI□E	WIDTH	HEIGHT
4 NPS	24"	10"	14 NPS	64"	32"
6 NPS	32"	14"	16 NPS	68"	40"
8 NPS	40"	20"	18 NPS	88"	40"
10 NPS	48"	24"	20 NPS	88"	48"
12 NPS	56"	28"	24 NPS	108"	56"

NOTE:
1. THRUST BLOCKS SHALL BE CONSTRUCTED OF CONCRETE FOR PIPELINES CLASS C CONCRETE.
2. THRUST BLOCKS SIZES AND MINIMUM RESTRAINED LENGTHS SHOWN ON THESE SHEETS ARE BASED UPON THE FOLLOWING STANDARD CONDITIONS:

1.5 SAFETY FACTOR
5 FT DEPTH OF COVER
200 PSI WATER SYSTEM TEST PRESSURE
14 PSI SOIL BEARING CAPACITY
90 PCF SOIL UNIT WEIGHT

C505 109 45° BEND THRUST BLOCK
NOT TO SCALE

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□ ING□ AMTON□ NY □□□□□

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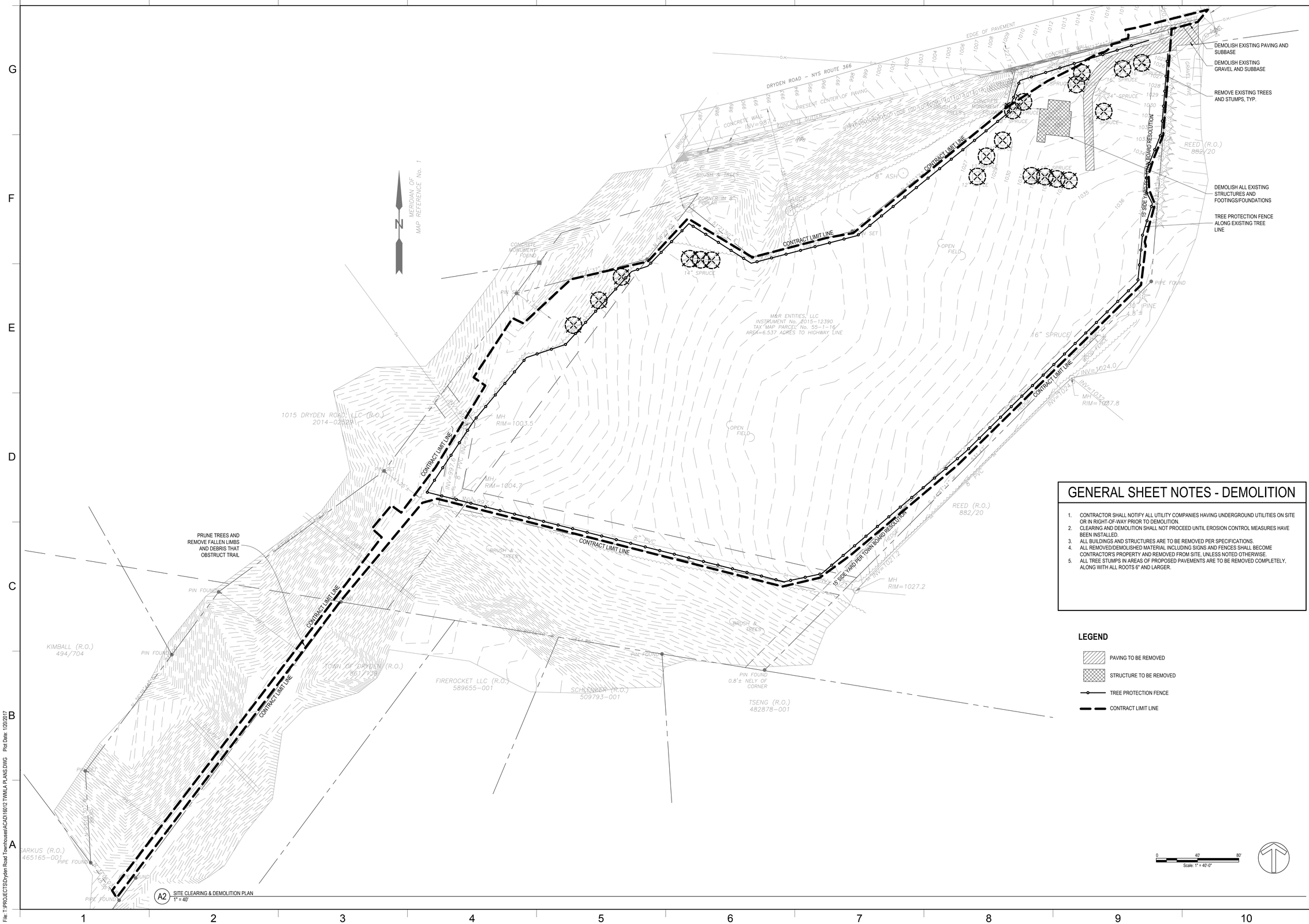
M&R ENTITIES
1061 DRYDEN ROAD, DRYDEN NY

DATE:	01/20/2017
PROJECT:	2016012
DRAWN BY:	MAA
CHEC□ED BY:	MGS

WATER SYSTEM DETAILS

C505



GENERAL SHEET NOTES - DEMOLITION

1. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND UTILITIES ON SITE OR IN RIGHT-OF-WAY PRIOR TO DEMOLITION.
2. CLEARING AND DEMOLITION SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
3. ALL BUILDINGS AND STRUCTURES ARE TO BE REMOVED PER SPECIFICATIONS.
4. ALL REMOVED/DEMOLISHED MATERIAL INCLUDING SIGNS AND FENCES SHALL BECOME CONTRACTOR'S PROPERTY AND REMOVED FROM SITE, UNLESS NOTED OTHERWISE.
5. ALL TREE STUMPS IN AREAS OF PROPOSED PAVEMENTS ARE TO BE REMOVED COMPLETELY, ALONG WITH ALL ROOTS 6" AND LARGER.

LEGEND

- PAVING TO BE REMOVED
- STRUCTURE TO BE REMOVED
- TREE PROTECTION FENCE
- CONTRACT LIMIT LINE

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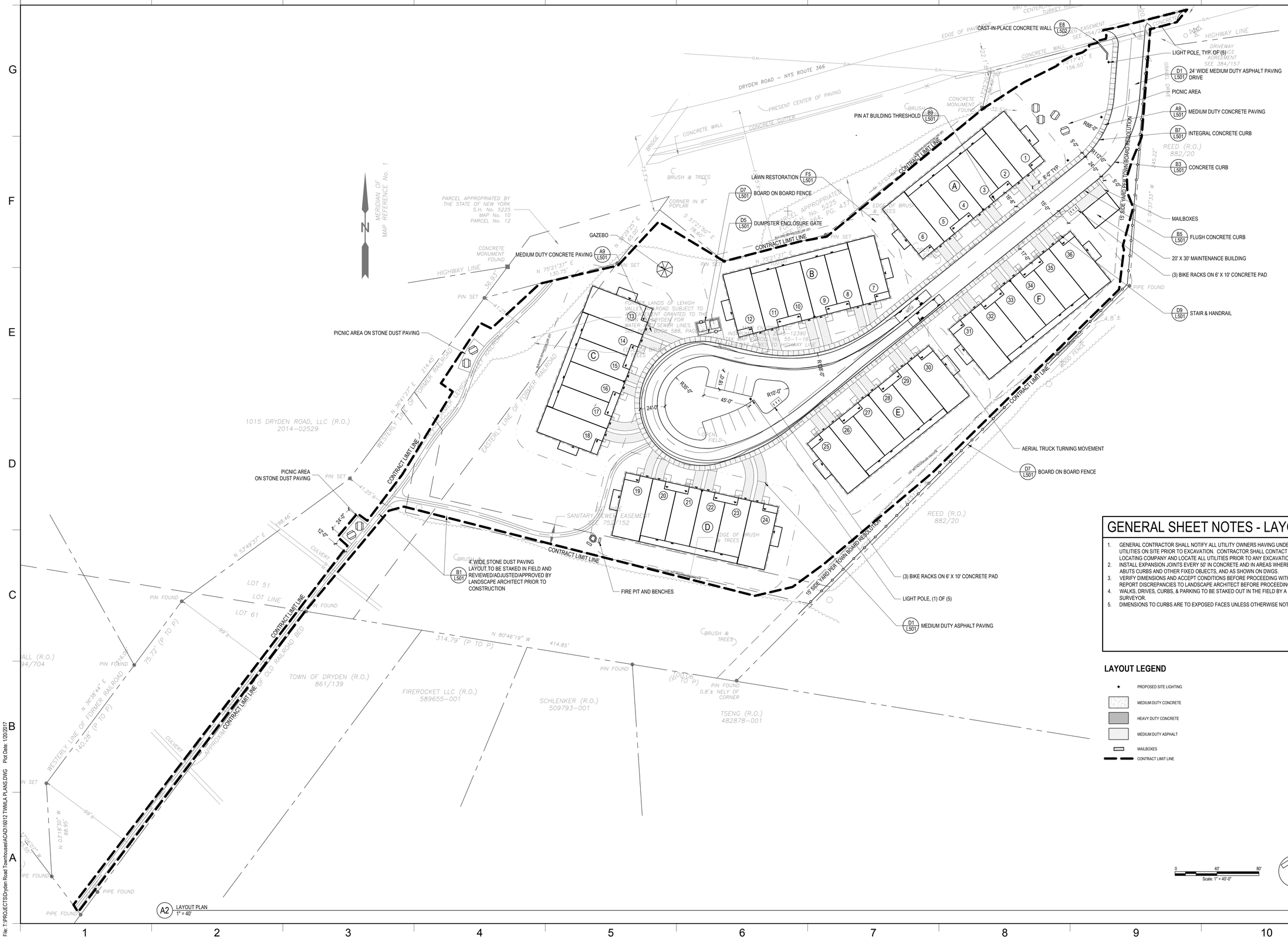
1061 DRYDEN ROAD, DRYDEN, NY

DATE:	20 JAN 2017
PROJECT:	16012
OTHER:	
DRAWN BY:	MDC

SITE CLEARING & DEMOLITION PLAN

L101

File: T:\PROJECTS\Dryden Road Townhouses\ACAD\16012 TWMLA PLANS.DWG Plot Date: 1/20/2017



GENERAL SHEET NOTES - LAYOUT

1. GENERAL CONTRACTOR SHALL NOTIFY ALL UTILITY OWNERS HAVING UNDERGROUND UTILITIES ON SITE PRIOR TO EXCAVATION. CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO ANY EXCAVATION.
2. INSTALL EXPANSION JOINTS EVERY 50' IN CONCRETE AND IN AREAS WHERE CONCRETE ABUTS CURBS AND OTHER FIXED OBJECTS, AND AS SHOWN ON DWGS.
3. VERIFY DIMENSIONS AND ACCEPT CONDITIONS BEFORE PROCEEDING WITH WORK. REPORT DISCREPANCIES TO LANDSCAPE ARCHITECT BEFORE PROCEEDING.
4. WALKS, DRIVES, CURBS, & PARKING TO BE STAKED OUT IN THE FIELD BY A LICENSED SURVEYOR.
5. DIMENSIONS TO CURBS ARE TO EXPOSED FACES UNLESS OTHERWISE NOTED.

LAYOUT LEGEND

- PROPOSED SITE LIGHTING
- MEDIUM DUTY CONCRETE
- HEAVY DUTY CONCRETE
- MEDIUM DUTY ASPHALT
- MAILBOXES
- CONTRACT LIMIT LINE

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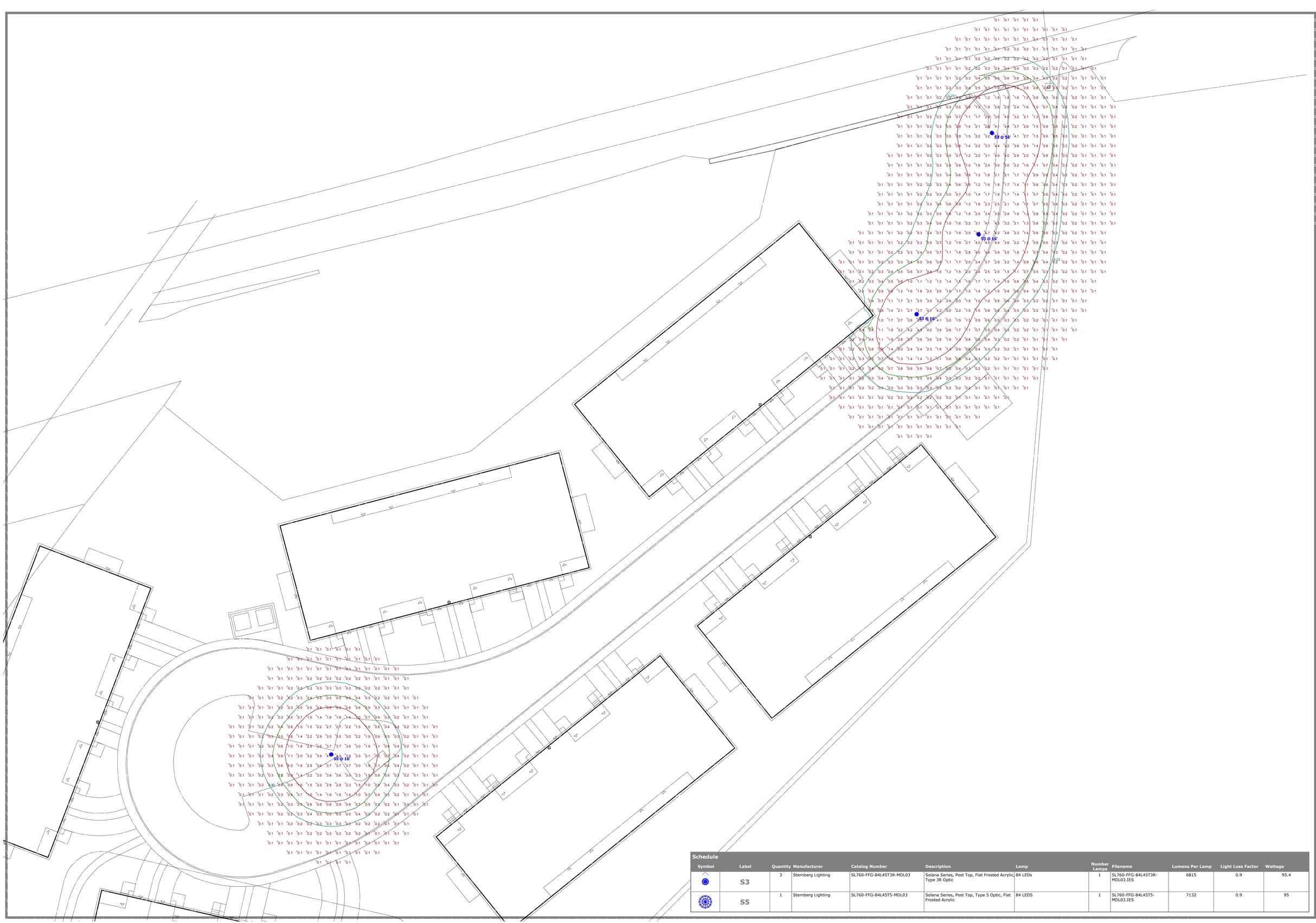
PROJECT:	16012
OTHER:	
DRAWN BY:	MDC

LAYOUT PLAN

L201

File: T:\PROJECTS\Dryden Road Townhouses\ACAD\16012 TWMLA PLANS.DWG Plot Date: 1/20/2017



Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	S3	3	Sternberg Lighting	SL760-FFG-84L45T3R-MDL03	Solana Series, Post Top, Flat Frosted Acrylic, Type 3R Optic	84 LEDs	1	SL760-FFG-84L45T3R-MDL03.IES	6815	0.9	95.4
	S5	1	Sternberg Lighting	SL760-FFG-84L45T5-MDL03	Solana Series, Post Top, Type 5 Optic, Flat Frosted Acrylic	84 LEDS	1	SL760-FFG-84L45T5-MDL03.IES	7132	0.9	95

LIGHTSPEC
Your Complete Light Source

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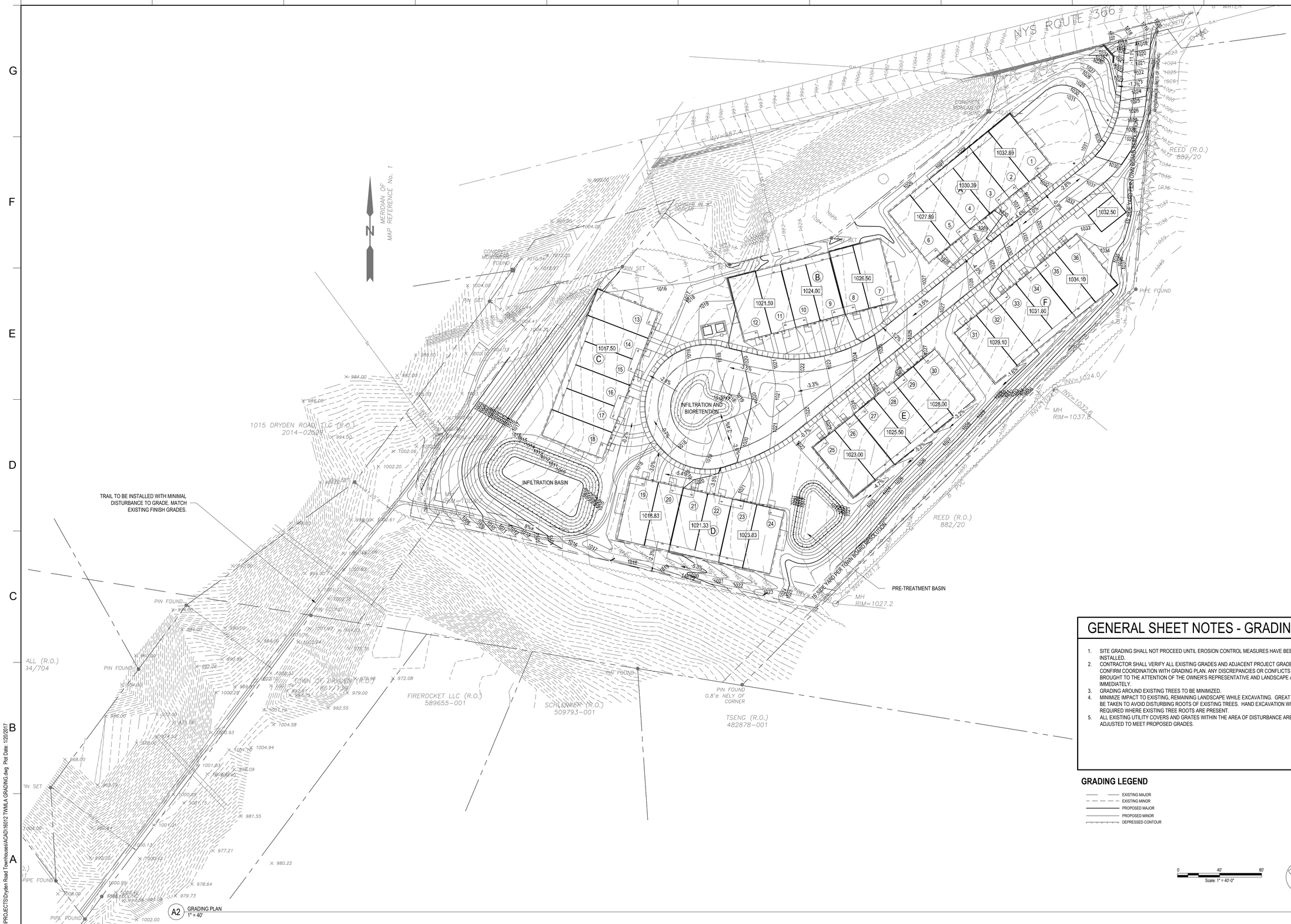
Designer

Date
1/22/2017
Scale
Not to Scale
Drawing No.

Summary



GENERAL SHEET NOTES - GRADING

1. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
2. CONTRACTOR SHALL VERIFY ALL EXISTING GRADES AND ADJACENT PROJECT GRADES AND CONFIRM COORDINATION WITH GRADING PLAN. ANY DISCREPANCIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT IMMEDIATELY.
3. GRADING AROUND EXISTING TREES TO BE MINIMIZED.
4. MINIMIZE IMPACT TO EXISTING, REMAINING LANDSCAPE WHILE EXCAVATING. GREAT CARE IS TO BE TAKEN TO AVOID DISTURBING ROOTS OF EXISTING TREES. HAND EXCAVATION WILL BE REQUIRED WHERE EXISTING TREE ROOTS ARE PRESENT.
5. ALL EXISTING UTILITY COVERS AND GRATES WITHIN THE AREA OF DISTURBANCE ARE TO BE ADJUSTED TO MEET PROPOSED GRADES.

GRADING LEGEND

- EXISTING MAJOR
- EXISTING MINOR
- PROPOSED MAJOR
- PROPOSED MINOR
- DEPRESSED CONTOUR

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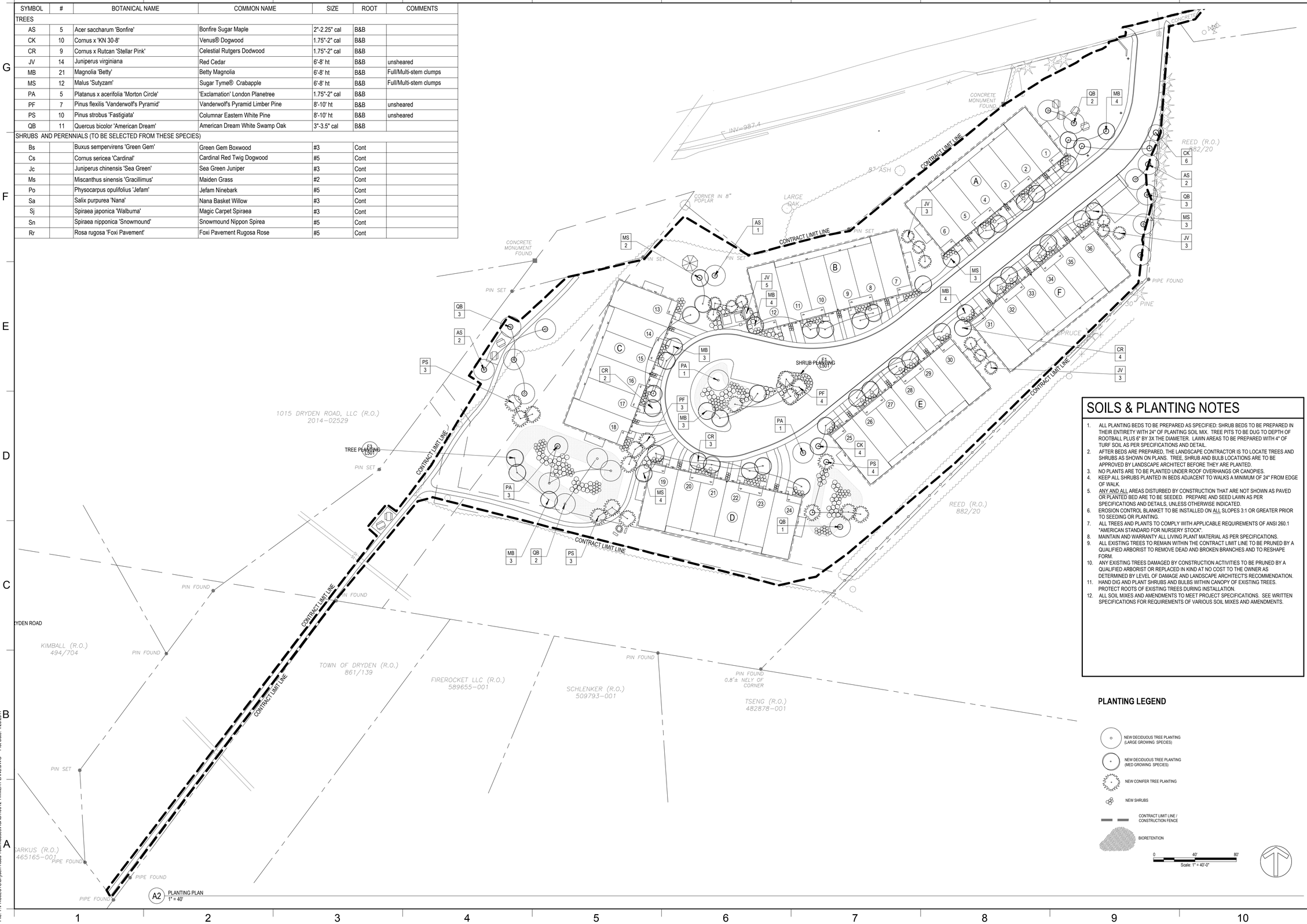
DATE:	20 JAN 2017
PROJECT:	16012
OTHER:	
DRAWN BY:	MDC

GRADING PLAN

L301

File: T:\PROJECTS\Dryden Road Townhouses\ACAD\16012 TWMLA GRADING.dwg Plot Date: 1/20/2017

SYMBOL	#	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS
TREES						
AS	5	Acer saccharum 'Bonfire'	Bonfire Sugar Maple	2"-2.25" cal	B&B	
CK	10	Cornus x 'KN 30-8'	Venus® Dogwood	1.75"-2" cal	B&B	
CR	9	Cornus x Rutcan 'Stellar Pink'	Celestial Rutgers Dodwood	1.75"-2" cal	B&B	
JV	14	Juniperus virginiana	Red Cedar	6'-8' ht	B&B	unsheared
MB	21	Magnolia 'Betty'	Betty Magnolia	6'-8' ht	B&B	Full/Multi-stem clumps
MS	12	Malus 'Sutyzam'	Sugar Tyme® Crabapple	6'-8' ht	B&B	Full/Multi-stem clumps
PA	5	Platanus x acerifolia 'Morton Circle'	'Exclamation' London Planetree	1.75"-2" cal	B&B	
PF	7	Pinus flexilis 'Vanderwolf's Pyramid'	Vanderwolf's Pyramid Limber Pine	8'-10' ht	B&B	unsheared
PS	10	Pinus strobus 'Fastigiata'	Columnar Eastern White Pine	8'-10' ht	B&B	unsheared
QB	11	Quercus bicolor 'American Dream'	American Dream White Swamp Oak	3"-3.5" cal	B&B	
SHRUBS AND PERENNIALS (TO BE SELECTED FROM THESE SPECIES)						
Bs		Buxus sempervirens 'Green Gem'	Green Gem Boxwood	#3	Cont	
Cs		Cornus sericea 'Cardinal'	Cardinal Red Twig Dogwood	#5	Cont	
Jc		Juniperus chinensis 'Sea Green'	Sea Green Juniper	#3	Cont	
Ms		Miscanthus sinensis 'Gracillimus'	Maiden Grass	#2	Cont	
Po		Physocarpus opulifolius 'Jefam'	Jefam Ninebark	#5	Cont	
Sa		Salix purpurea 'Nana'	Nana Basket Willow	#3	Cont	
Sj		Spiraea japonica 'Walbuma'	Magic Carpet Spiraea	#3	Cont	
Sn		Spiraea nipponica 'Snowmound'	Snowmound Nippon Spirea	#5	Cont	
Rr		Rosa rugosa 'Foxi Pavement'	Foxi Pavement Rugosa Rose	#5	Cont	



SOILS & PLANTING NOTES

1. ALL PLANTING BEDS TO BE PREPARED AS SPECIFIED: SHRUB BEDS TO BE PREPARED IN THEIR ENTIRETY WITH 24" OF PLANTING SOIL MIX. TREE PITS TO BE DUG TO DEPTH OF ROOTBALL PLUS 6" BY 3X THE DIAMETER. LAWN AREAS TO BE PREPARED WITH 4" OF TURF SOIL AS PER SPECIFICATIONS AND DETAIL.
2. AFTER BEDS ARE PREPARED, THE LANDSCAPE CONTRACTOR IS TO LOCATE TREES AND SHRUBS AS SHOWN ON PLANS. TREE, SHRUB AND BULB LOCATIONS ARE TO BE APPROVED BY LANDSCAPE ARCHITECT BEFORE THEY ARE PLANTED.
3. NO PLANTS ARE TO BE PLANTED UNDER ROOF OVERHANGS OR CANOPIES.
4. KEEP ALL SHRUBS PLANTED IN BEDS ADJACENT TO WALKS A MINIMUM OF 24" FROM EDGE OF WALK.
5. ANY AND ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT SHOWN AS PAVED OR PLANTED BED ARE TO BE SEEDED. PREPARE AND SEED LAWN AS PER SPECIFICATIONS AND DETAILS, UNLESS OTHERWISE INDICATED.
6. EROSION CONTROL BLANKET TO BE INSTALLED ON ALL SLOPES 3:1 OR GREATER PRIOR TO SEEDING OR PLANTING.
7. ALL TREES AND PLANTS TO COMPLY WITH APPLICABLE REQUIREMENTS OF ANSI 260.1 "AMERICAN STANDARD FOR NURSERY STOCK".
8. MAINTAIN AND WARRANTY ALL LIVING PLANT MATERIAL AS PER SPECIFICATIONS.
9. ALL EXISTING TREES TO REMAIN WITHIN THE CONTRACT LIMIT LINE TO BE PRUNED BY A QUALIFIED ARBORIST TO REMOVE DEAD AND BROKEN BRANCHES AND TO RESHAPE FORM.
10. ANY EXISTING TREES DAMAGED BY CONSTRUCTION ACTIVITIES TO BE PRUNED BY A QUALIFIED ARBORIST OR REPLACED IN KIND AT NO COST TO THE OWNER AS DETERMINED BY LEVEL OF DAMAGE AND LANDSCAPE ARCHITECT'S RECOMMENDATION.
11. HAND DIG AND PLANT SHRUBS AND BULBS WITHIN CANOPY OF EXISTING TREES. PROTECT ROOTS OF EXISTING TREES DURING INSTALLATION.
12. ALL SOIL MIXES AND AMENDMENTS TO MEET PROJECT SPECIFICATIONS. SEE WRITTEN SPECIFICATIONS FOR REQUIREMENTS OF VARIOUS SOIL MIXES AND AMENDMENTS.

PLANTING LEGEND

- NEW DECIDUOUS TREE PLANTING (LARGE GROWING SPECIES)
- NEW DECIDUOUS TREE PLANTING (MED GROWING SPECIES)
- NEW CONIFER TREE PLANTING
- NEW SHRUBS
- CONTRACT LIMIT LINE / CONSTRUCTION FENCE
- BIORETENTION

0 40' 80'
Scale: 1" = 40'-0"

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REVISION SCHEDULE

NAME	DATE

SCHEMATIC DESIGN
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EVERGREEN TOWNHOMES
M&R ENTITIES
1061 DRYDEN ROAD, DRYDEN, NY

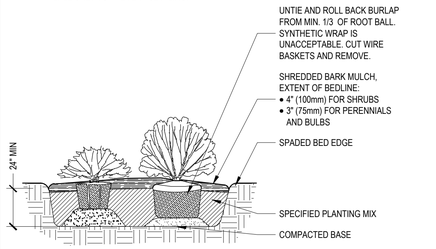
DATE:	20 JAN 2017
PROJECT:	16012
OTHER:	
DRAWN BY:	MDC

PLANTING PLAN

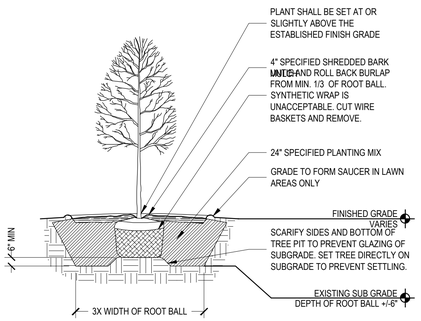
L401

File: T:\PROJECTS\Dryden Road Townhouses\ACAD\16012 TWMLA PLANS.DWG Plot Date: 1/20/2017

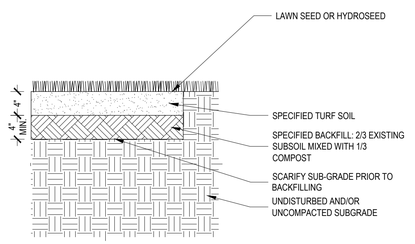
NOTES:
1. PLANT AT SAME DEPTH AS PREVIOUSLY PLANTED IN NURSERY OR CONTAINER.
2. PROVIDE COMPACTED BASE UNDER ROOT BALL ONLY TO PREVENT SETTLING.



F1 SHRUB PLANTING
1/4" = 1'-0"

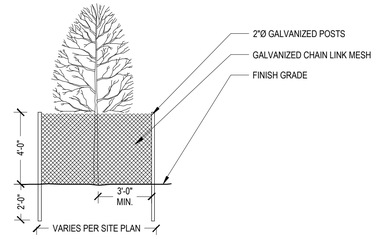


F3 TREE PLANTING
1/4" = 1'-0"

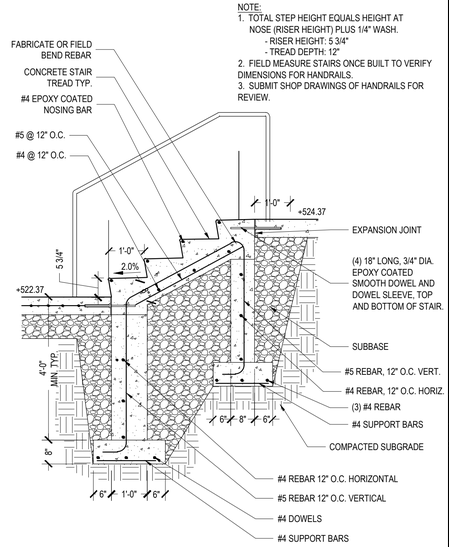


F5 LAWN RESTORATION
1" = 1'-0"

NOTES:
1. OUTSIDE EDGE OF GUARD SHOULD BE PLACED AT DRIPLINE OR AS INDICATED ON DEMOLITION PLAN. GUARDS MAY BE PLACED AROUND SINGLE TREES OR GROUPS OF TREES AS SHOWN ON PLAN.



F7 TREE PROTECTION
1/4" = 1'-0"

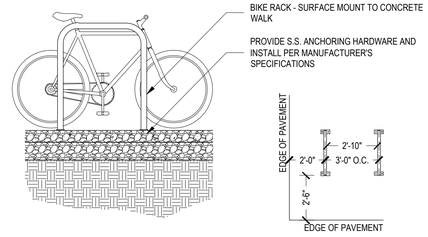


D9 STAIR & HANDRAIL
1/2" = 1'-0"

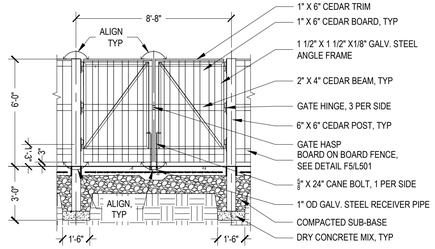
1-1/2" 9.5 F2 TOP COURSE HMA, 80 SERIES COMPACTION, ITEM 402.098202
2" 19 F9 BINDER COURSE HMA, 80 SERIES COMPACTION, ITEM 402.198902
TAMP EDGES - FILL & FEATHER TO MEET EXISTING GRADE
FABRIC TO WRAP 12" UNDER ASPHALT BINDER COURSE
12" COMPACTED SUB-BASE
SEPARATION FABRIC MIRAFI 500X OR EQUIVALENT
COMPACTED SUB-GRADE
1'-0"
1'-0"
3"
1"

D1 MEDIUM DUTY ASPHALT PAVING
1" = 1'-0"

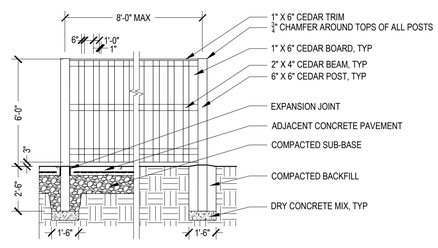
NOTES:
1. BASIS OF DESIGN - DERO DOWNTOWN RACK .
2. SPACE RACKS AT 36" O.C. TYPICAL - SEE LAYOUT PLAN FOR LOCATIONS



D3 BIKE RACK
1/2" = 1'-0"

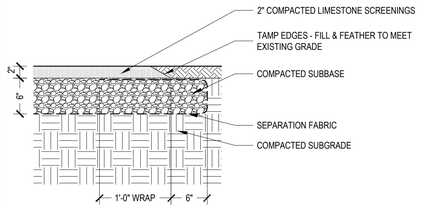


D5 DUMPSTER ENCLOSURE GATE
1/4" = 1'-0"

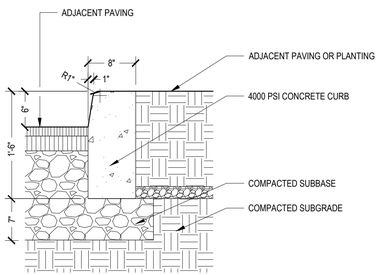


D7 BOARD ON BOARD FENCE
1/4" = 1'-0"

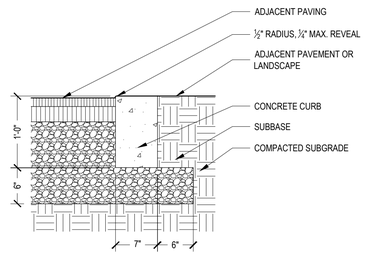
NOTES:
1. CONCRETE SIDEWALK SURFACE TO RECEIVE MEDIUM BROOM FINISH PERPENDICULAR TO DIRECTION OF PEDESTRIAN TRAFFIC.
2. CONCRETE CURB TO RECEIVE MEDIUM BROOM FINISH LONGITUDINAL WITH ROADWAY.



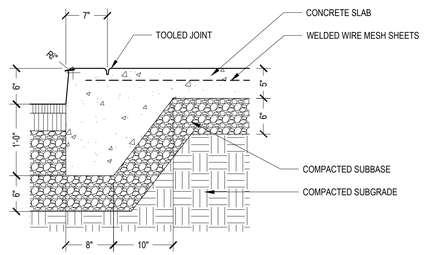
B1 STONE DUST PAVING
1" = 1'-0"



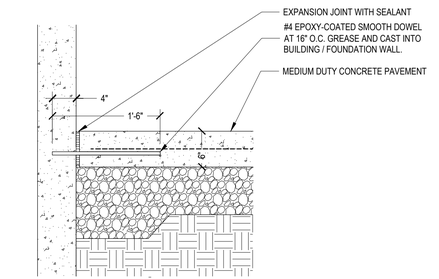
B3 CONCRETE CURB
1" = 1'-0"



B5 FLUSH CONCRETE CURB
1" = 1'-0"

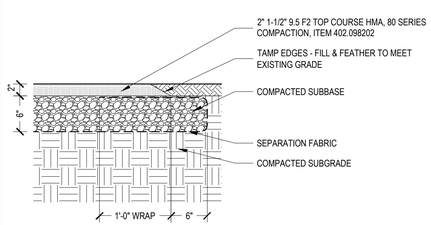


B7 INTEGRAL CONCRETE CURB
1" = 1'-0"

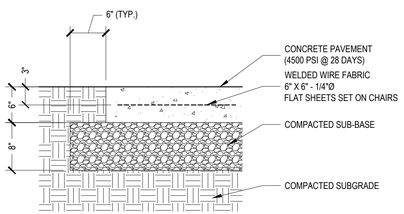


B9 PIN AT BUILDING THRESHOLD
1" = 1'-0"

NOTES:
1. SEE PLANS FOR TOOL JOINTS, EXPANSION JOINTS (EJ), LAYOUT WIDTHS AND RADII.
2. 2" MINIMUM CONCRETE COVERAGE ON MESH AND TIES

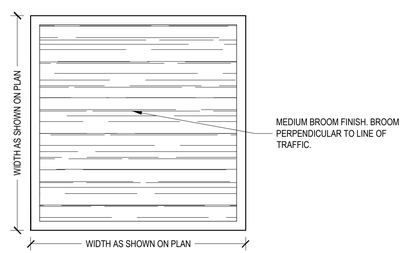


A1 ASPHALT PATH
1" = 1'-0"

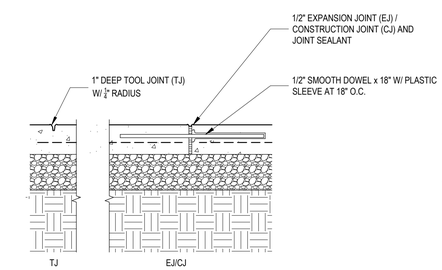


A3 HEAVY DUTY CONCRETE PAVING
1" = 1'-0"

NOTES:
1. SEE PLANS FOR LOCATION AND TYPE OF SCORE JOINTS.
2. BROOM PERPENDICULAR TO LINE OF TRAFFIC.
3. 2" WINDOW PANE EDGE FINISH.

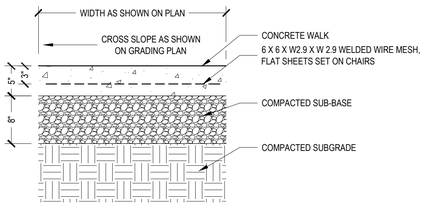


A5 CONCRETE BROOM FINISH
3/4" = 1'-0"



A7 CONCRETE JOINTS
1" = 1'-0"

NOTES:
1. 2" MINIMUM CONCRETE COVERAGE ON MESH AND TIES



A9 MEDIUM DUTY CONCRETE PAVING
1" = 1'-0"

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TWLA LANDSCAPE ARCHITECTS

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EVERGREEN TOWNHOMES

M&R ENTITIES
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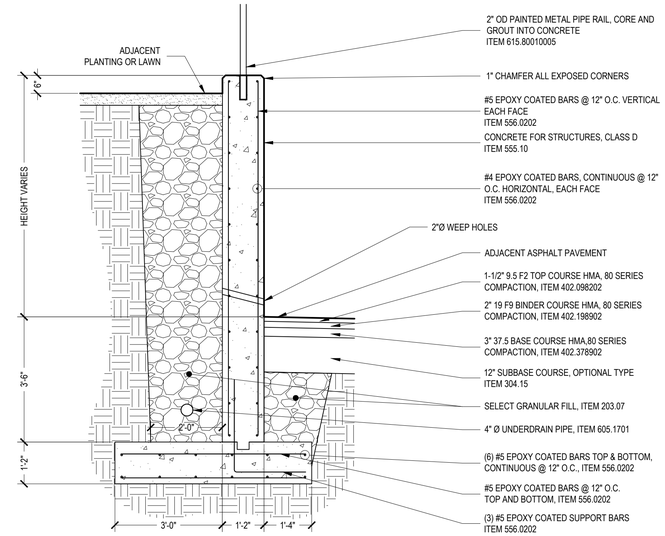
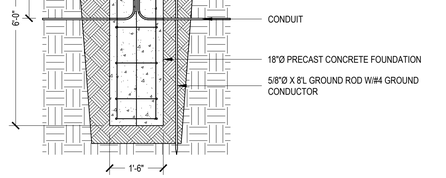
SITE DETAILS

L501

File: T:\PROJECTS\Dryden Road Townhouses\ACAD\16012 TWMLA DETAILS.dwg Plot Date: 1/20/2017



E8 CAST-IN-PLACE CONCRETE WALL
1/2" = 1'-0"



C8 LIGHT POLE
1/2" = 1'-0"

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SITE DETAILS

L502

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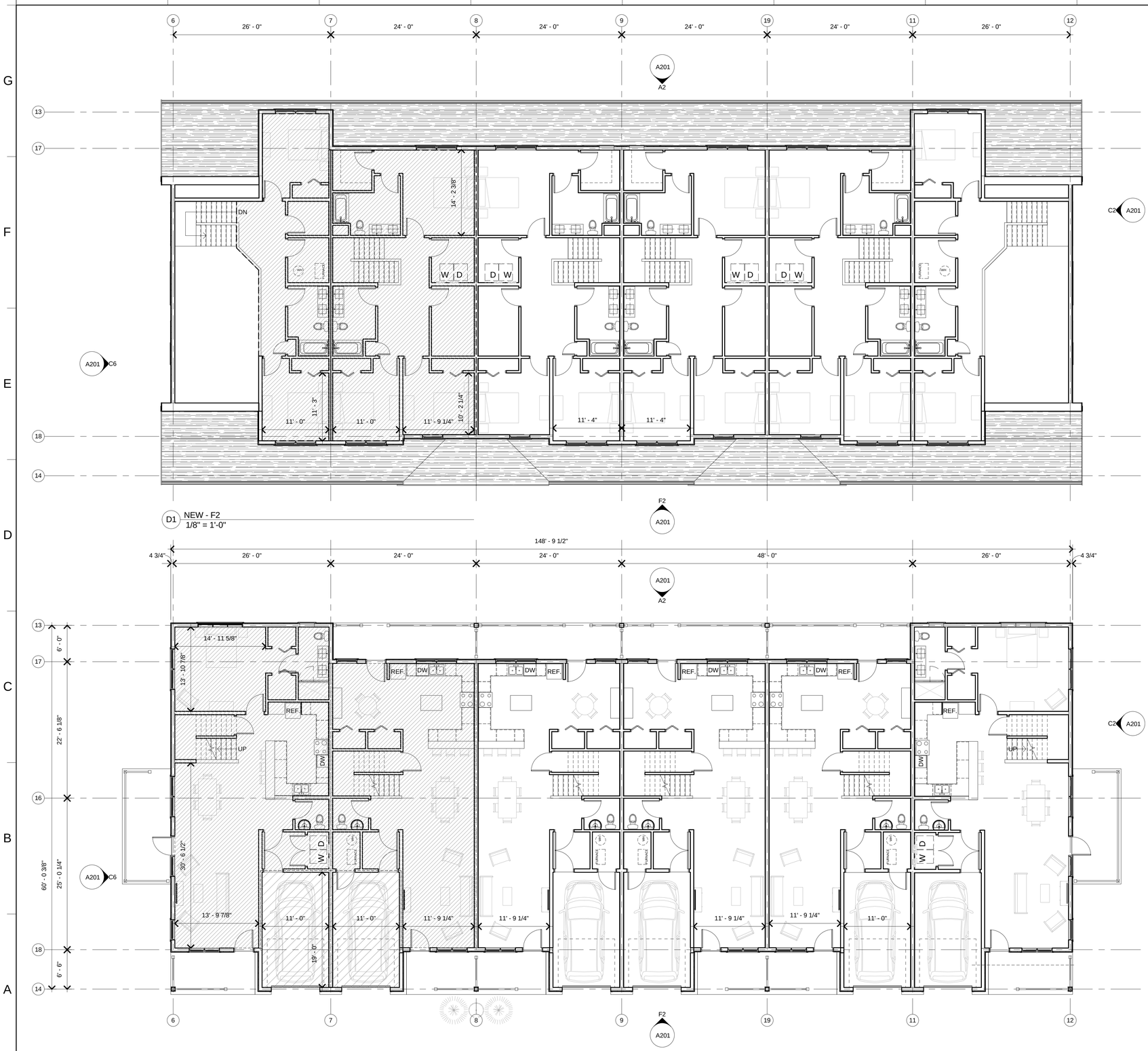

D1 NEW - F2
1/8" = 1'-0"

A1 FLOOR PLAN - FIRST FLOOR
1/8" = 1'-0"

TOTAL RESIDENTIAL AREAS

TOTAL RESIDENTIAL SPACE	INTERIOR NET AREA	NUMBER OF UNITS	TOTAL INTERIOR NET AREA
DWELLING UNIT SPACE (DUS)			
UNIT TYPE A	**2,098 NSF**	**(2)**	**4,196 NSF**
FIRST FLOOR NSF	1,219 NSF		
GARAGE NSF	221 NSF		
SECOND FLOOR NSF	658 NSF		
UNIT TYPE B	**2,344 NSF**	**(4)**	**9,376 NSF**
FIRST FLOOR NSF	984 NSF		
GARAGE NSF	221 NSF		
SECOND FLOOR NSF	1,139 NSF		
DWELLING UNIT SPACE (DUS) SUB-TOTAL			**13,572 NSF**
RESIDENTIAL COMMON SPACE (RCS)			0 NSF
		TOTALS	**13,572 NSF**

TOTAL RESIDENTIAL SPACE	TOTAL EXTERIOR GROSS AREA
DWELLING UNIT SPACE (DUS)	16,056 GSF
RESIDENTIAL COMMON SPACE (RCS)	0 GSF
TOTALS	**16,056 GSF**

NOTE: DWELLING UNIT SPACE CALCULATED FROM FACE OF EXTERIOR WALL TO CENTERLINE OF COMMON WALL.
NSF CALCULATION DOES NOT INCLUDE ENTRY PORCH OR REAR PORCH AREA - GSF DOES INCLUDE THOSE AREAS.

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EVERGREEN TOWNHOMES
Gary Sloan
1081 DRYDEN ROAD, DRYDEN NY

DATE:	20 JAN 2017
PROJECT:	16032
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DRAWN BY:	Author

FLOOR PLANS - BUILDING A

A101

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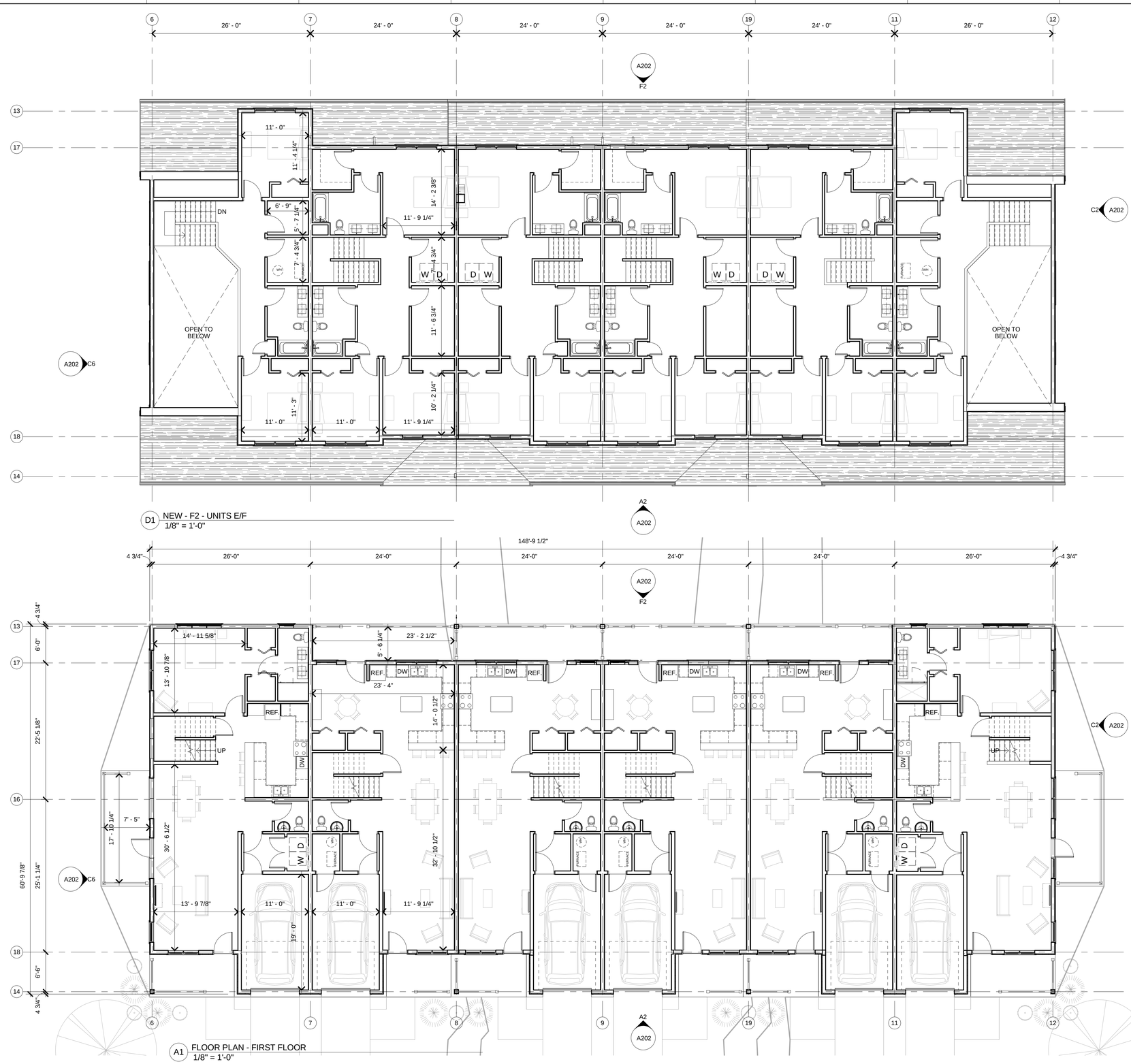

TOTAL RESIDENTIAL AREAS			
TOTAL RESIDENTIAL SPACE	**INTERIOR NET AREA**	**NUMBER OF UNITS**	**TOTAL INTERIOR NET AREA**
DWELLING UNIT SPACE (DUS)			
UNIT TYPE A	**2,098 NSF**	**(2)**	**4,196 NSF**
FIRST FLOOR NSF	1,219 NSF		
GARAGE NSF	221 NSF		
SECOND FLOOR NSF	658 NSF		
UNIT TYPE B	**2,344 NSF**	**(4)**	**9,376 NSF**
FIRST FLOOR NSF	984 NSF		
GARAGE NSF	221 NSF		
SECOND FLOOR NSF	1,139 NSF		
DWELLING UNIT SPACE (DUS) SUB-TOTAL			**13,572 NSF**
RESIDENTIAL COMMON SPACE (RCS)			0 NSF
		TOTALS	**13,572 NSF**
TOTAL RESIDENTIAL SPACE			**TOTAL EXTERIOR GROSS AREA**
DWELLING UNIT SPACE (DUS)			16,056 GSF
RESIDENTIAL COMMON SPACE (RCS)			0 GSF
		TOTALS	**16,056 GSF**

NOTE: DWELLING UNIT SPACE CALCULATED FROM FACE OF EXTERIOR WALL TO CENTERLINE OF COMMON WALL.
NSF CALCULATION DOES NOT INCLUDE ENTRY PORCH OR REAR PORCH AREA - GSF DOES INCLUDE THOSE AREAS.

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DATE:	20 JAN 2017
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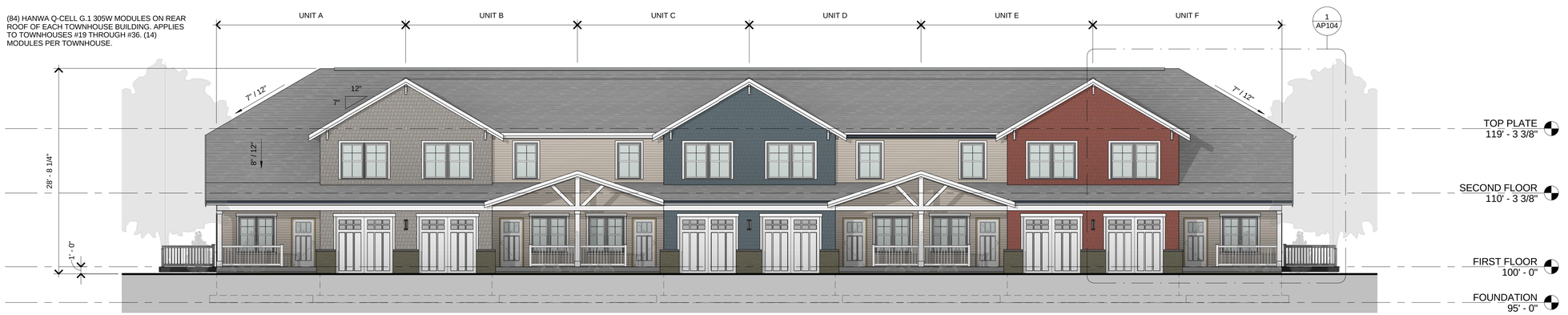
FLOOR PLANS - BUILDING TYPE B

A102

1/18/2017 4:17:25 PM

(84) HANWA Q-CELL G.1 305W MODULES ON REAR ROOF OF EACH TOWNHOUSE BUILDING. APPLIES TO TOWNHOUSES #19 THROUGH #36. (14) MODULES PER TOWNHOUSE.



F2 ELEVATION - PROJECT SOUTH
1/8" = 1'-0"

C2 ELEVATION - PROJECT EAST
1/8" = 1'-0"

C6 ELEVATION - PROJECT WEST
1/8" = 1'-0"

(60) HANWA Q-CELL G.1 305W MODULES ON FRONT ROOF OF EACH TOWNHOUSE BUILDING. APPLIES TO TOWNHOUSES #1 THROUGH #18. (10) MODULES PER TOWNHOUSE.

A2 NEW - NORTH
1/8" = 1'-0"

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DATE:	20 JAN 2017
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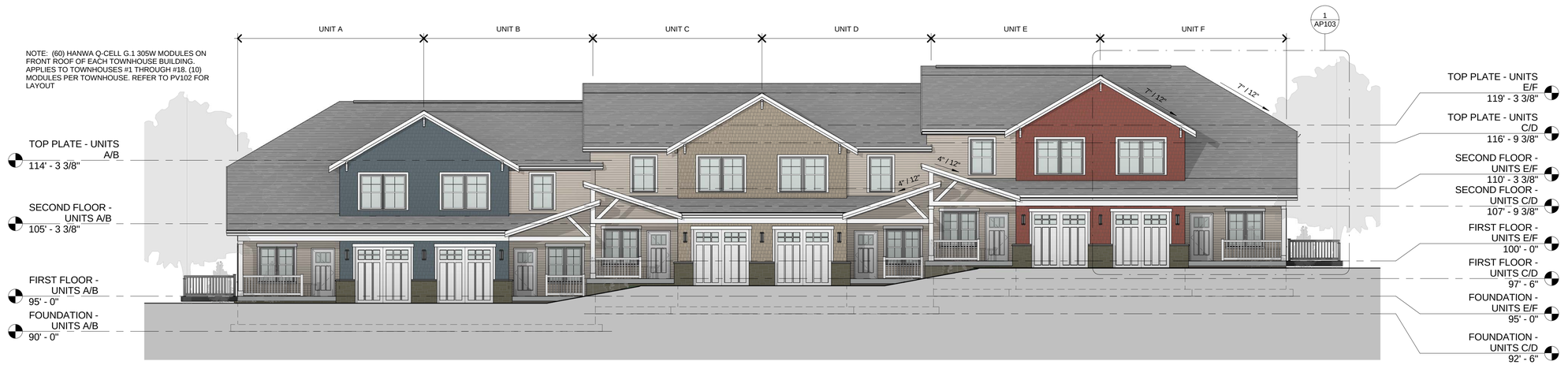
EXTERIOR ELEVATIONS - BUILDING TYPE A

A201

1/18/2017 3:45:17 PM

NOTE: (60) HANWA Q-CELL G.1 305W MODULES ON FRONT ROOF OF EACH TOWNHOUSE BUILDING. APPLIES TO TOWNHOUSES #1 THROUGH #18. (10) MODULES PER TOWNHOUSE. REFER TO PV102 FOR LAYOUT



A2 ELEVATION - PROJECT SOUTH
1/8" = 1'-0"

C2 ELEVATION - PROJECT EAST
1/8" = 1'-0"

C6 ELEVATION - PROJECT WEST
1/8" = 1'-0"

F2 NEW - NORTH
1/8" = 1'-0"

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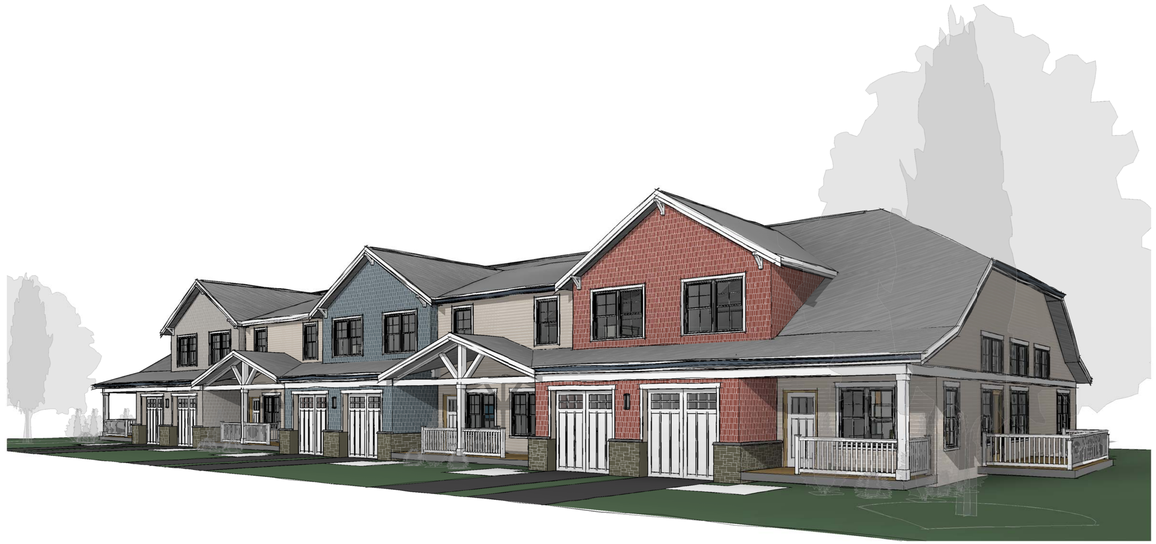
EXTERIOR ELEVATIONS - BUILDING TYPE B

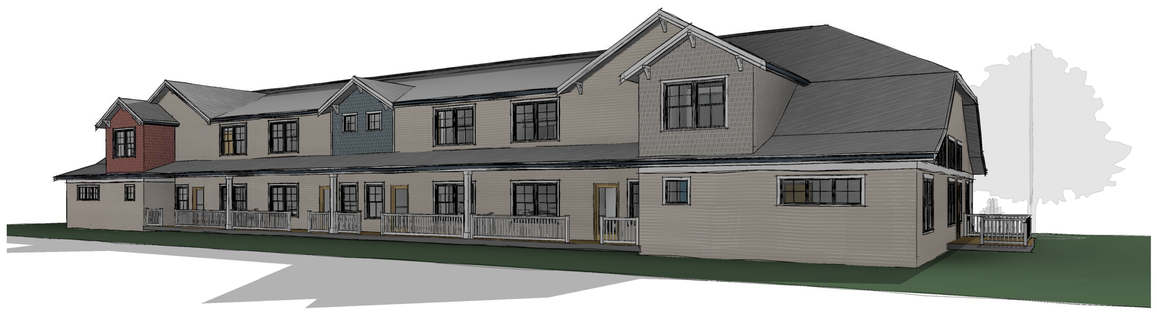
A202

1/18/2017 4:19:05 PM



E4 PERSPECTIVE - FRONT FROM SOUTHEAST

C4 PERSPECTIVE - FRONT



A4 PERSPECTIVE - REAR

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PERSPECTIVES

AP101

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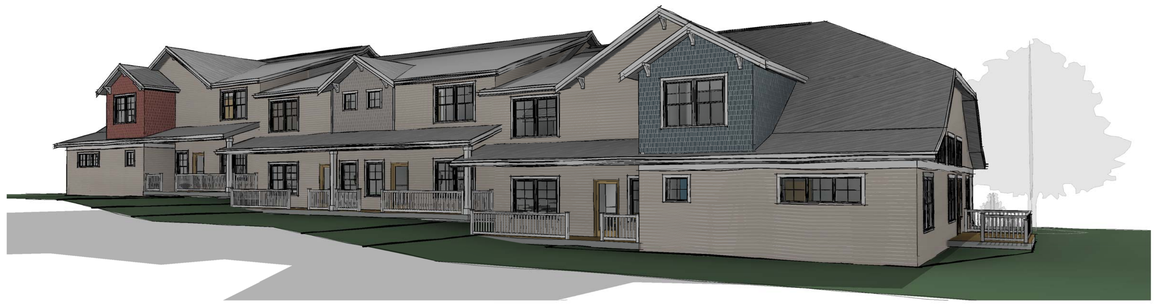
E4 PERSPECTIVE - FRONT FROM SOUTHEAST

C4 PERSPECTIVE - FRONT



A4 PERSPECTIVE - REAR

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PERSPECTIVES - BUILDING TYPE B

AP102

1/18/2017 5:06:48 PM

SITE PERSPECTIVE - VIEW 01 LOOKING WEST AT SITE ENTRY

SITE PERSPECTIVE - VIEW 02 LOOKING WEST AT MID-SITE

SITE PERSPECTIVE - VIEW 03 LOOKING EAST AT CUL-DE-SAC

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Syracuse, New York 13202

p 607 273 7600 www.holt.com

REVISION SCHEDULE

NAME	DATE

SCHEMATIC DESIGN

NOT FOR CONSTRUCTION OR BIDDING

Concept PUD Plan / Schematic Design

EVERGREEN TOWNHOMES

M&R ENTITIES

1061 DRYDEN ROAD, DRYDEN NY

DATE:	20 JAN 2017
PROJECT:	16032
OTHER:	
DRAWN BY:	NB

SITE PERSPECTIVES

AP103

EVERGREEN TOWNHOMES

M&R ENTITIES

1061 DRYDEN ROAD, DRYDEN NY

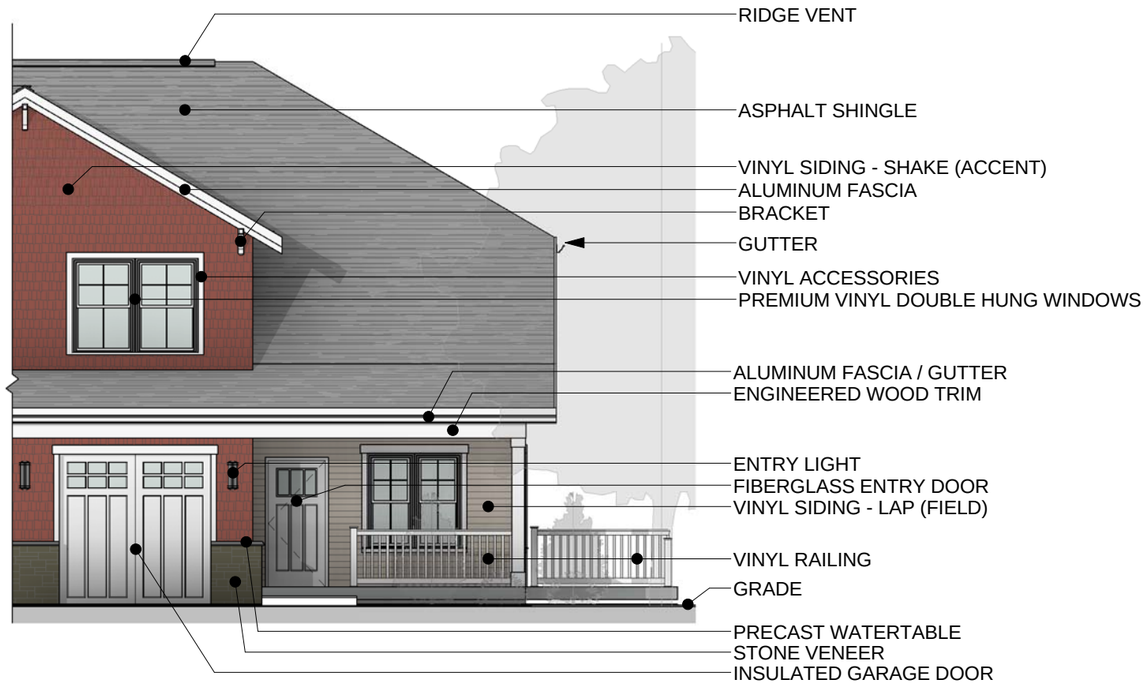
EXAMPLE COLOR PALETTE

20 JAN 2017

1/8" = 1'-0"

16032

AP104



1 ELEVATION - MATERIALS

1/8" = 1'-0"

RAILING / DECK

WINDOW

ENTRY DOOR

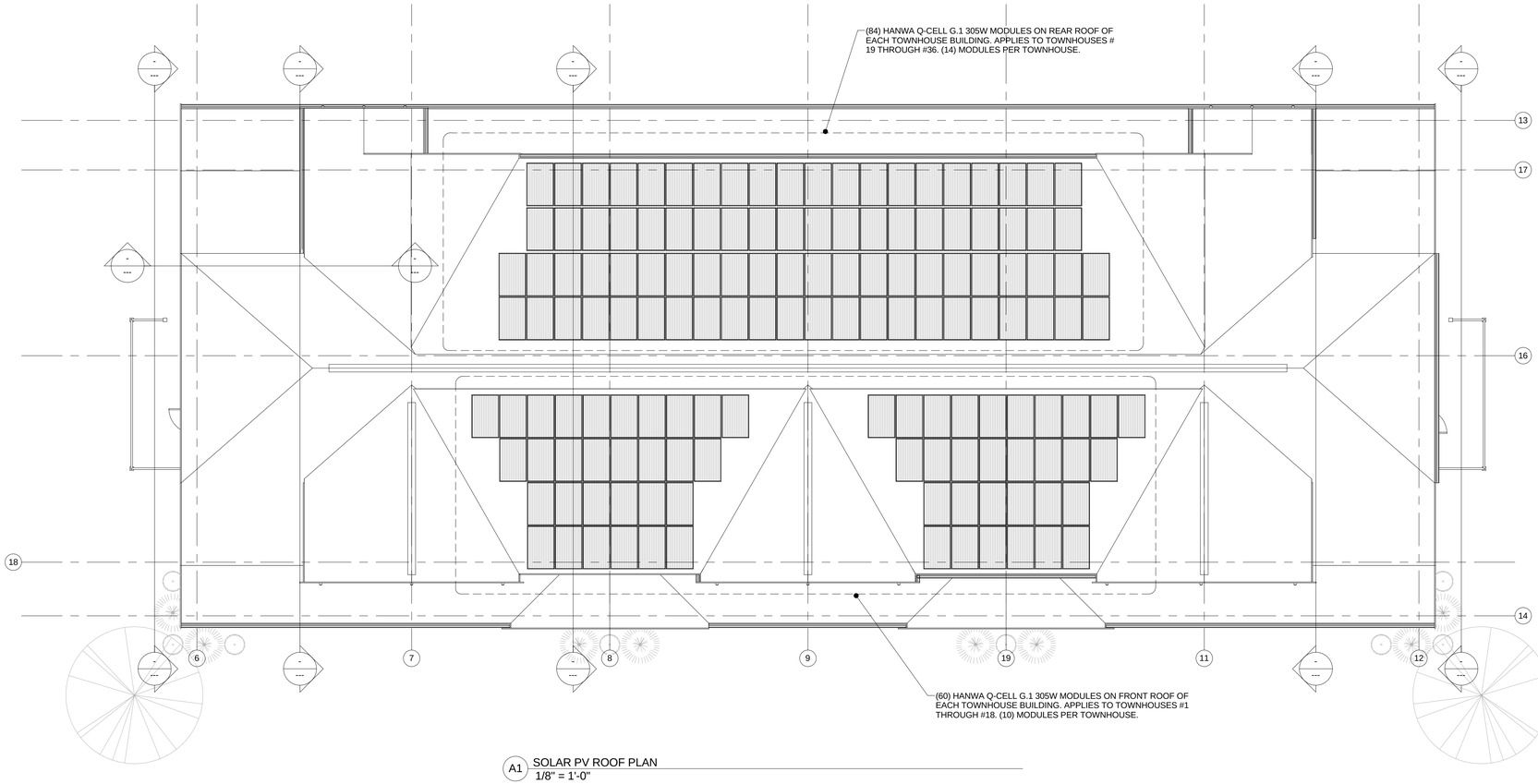
ASPHALT SHINGLE

FIELD COLOR

ACCENT COLORS

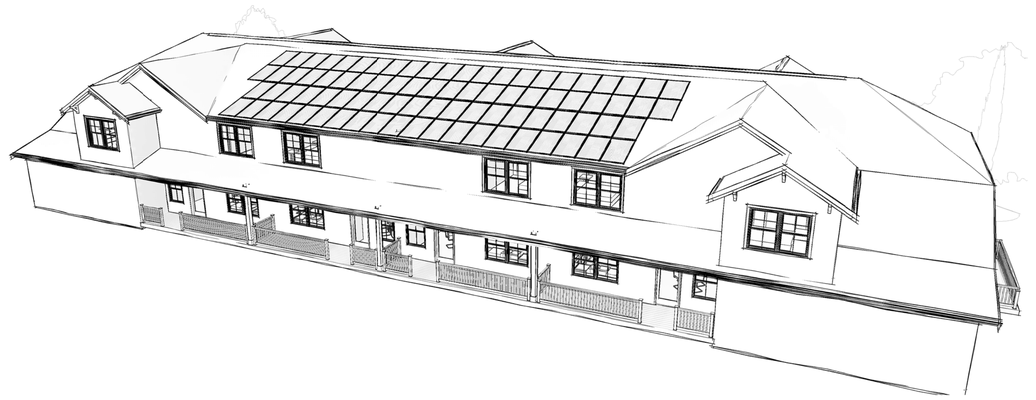
STONE VENEER

HOLT ARCHITECTS
619 W. State Street, Ithaca, NY 14850
132 E. Jefferson Street, Syracuse, NY 13202
p:607 273 7600 www.holt.com



A1 SOLAR PV ROOF PLAN
1/8" = 1'-0"

1 PERSPECTIVE - FRONT



2 PERSPECTIVE - REAR

Taitem
110 South Albany Street
Ithaca, New York 14850
607.277.1118
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PROGRESS PRINT

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EVERGREEN TOWNHOMES

M7R ENTITIES

1061 DRYDEN ROAD, DRYDEN NY

	Project Status	20 JAN '2017

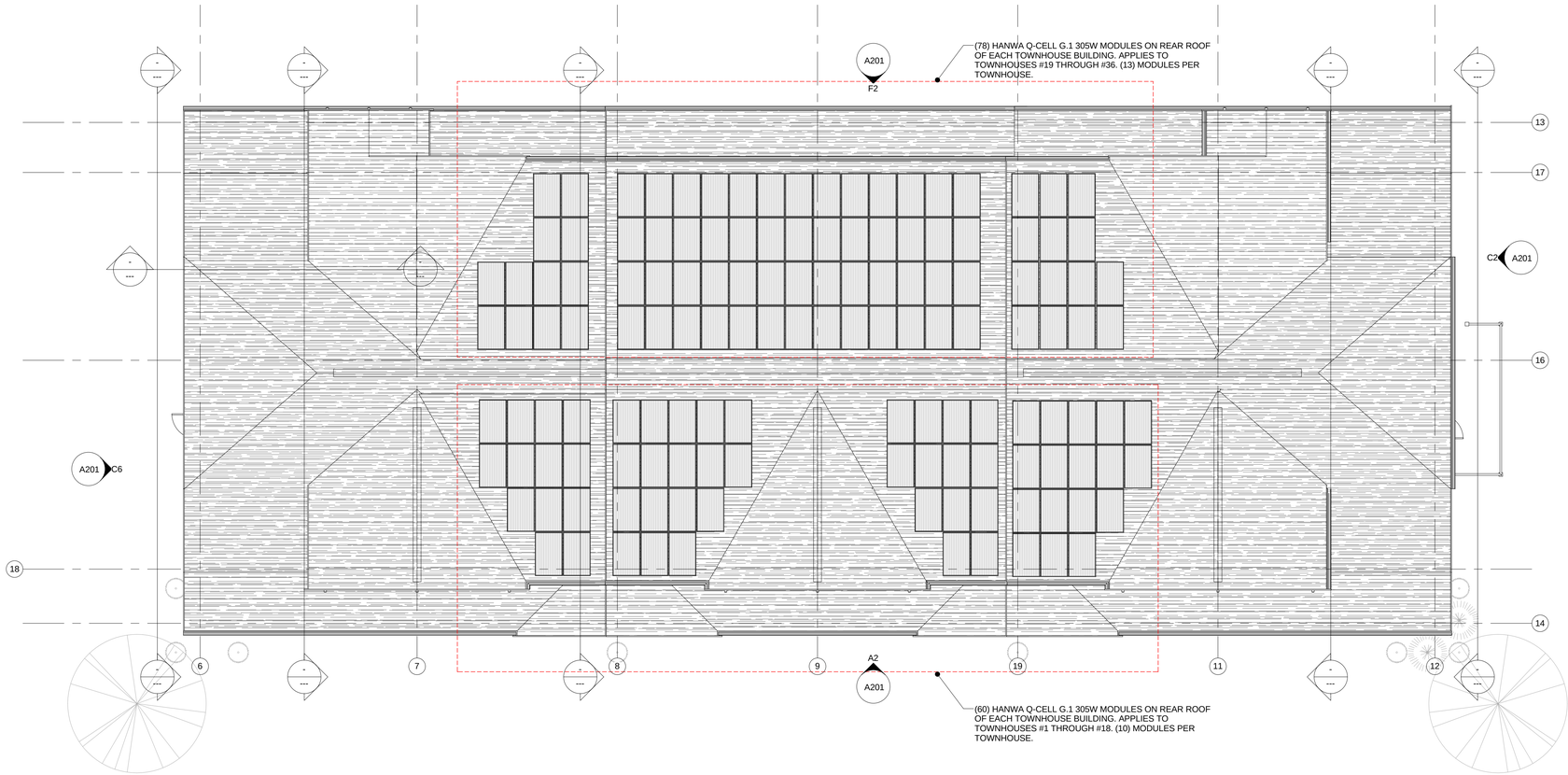
REVISIONS

No.	Description	Date

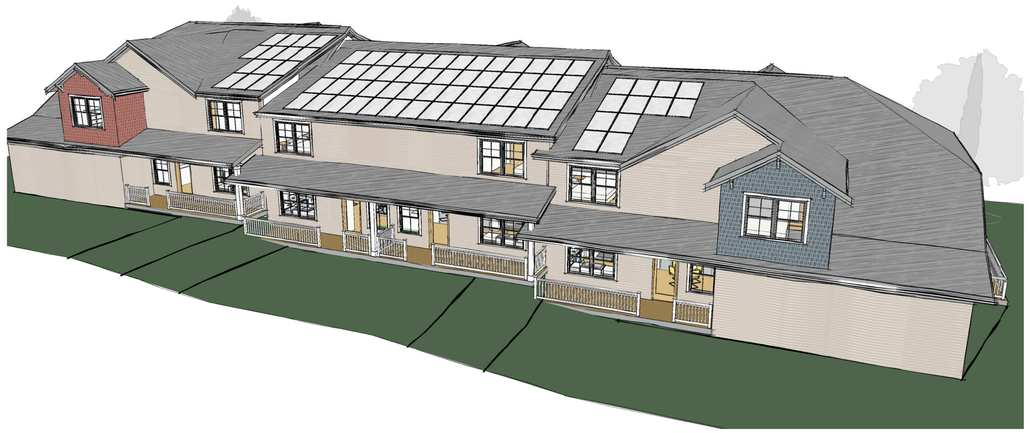
PV ROOF PLAN - BUILDING TYPE A

DRAWN BY:	YB
CHECKED BY:	GW
SCALE:	AS NOTED

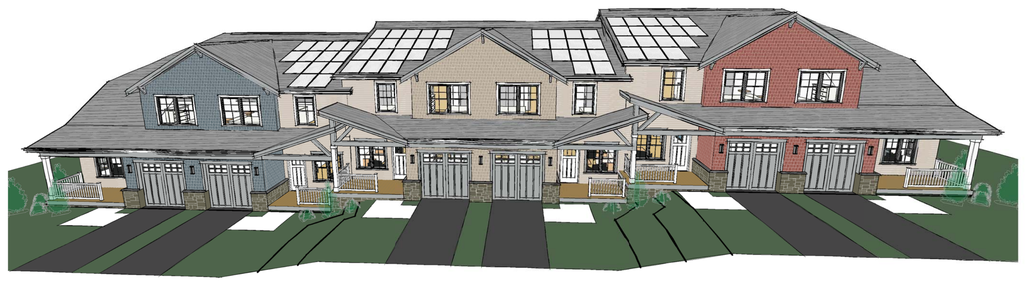
PV101



A1 SOLAR PV ROOF PLAN
1/8" = 1'-0"



2 PERSPECTIVE - REAR



1 PERSPECTIVE - FRONT

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M&R ENTITIES

1061 DRYDEN ROAD, DRYDEN NY

	SD	1/13/17

REVISIONS

No.	Description	Date

ROOF PLAN - BUILDING TYPE B

DRAWN BY:	YB
CHECKED BY:	GW
SCALE:	AS NOTED

PV102