STORMWATER POLLUTION PREVENTION PLAN FOR WILKINS R.V. - ROCHESTER

Village of Churchville, County of Monroe,
State of New York

PREPARED FOR:
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PROJECT NO. 6028

MARCH, 2015

REVISED: JULY, 2015

COSTICH ENGINEERING

WILKINS R.V. - ROCHESTER
VILLAGE OF CHURCHVILLE, MONROE COUNTY, STATE OF NEW YORK
STORMWATER POLUTION PREVENTION PLAN

OVERVIEW

The Stormwater Pollution Prevention Plan for site improvements on a 16.3± acre parcel at 111 and 97 South Main Street in the Village of Churchville, New York is outlined in this report. Refer to the location sketch in Appendix I. The proposed development project consists of the demolition of an existing building, pavements, utilities and constructing a new 44,300 square foot building, with associated utilities and drives. A Stormwater Management Pond is proposed to detain stormwater runoff from the development. Bio-retention basins will be constructed to provide the required Runoff Reduction Volume.

SCOPE OF PROJECT

This report addresses the mitigation of stormwater runoff due to the increase in impervious area associated with the development. The proposed design incorporates measures which reduce developed peak flow rates to levels below existing conditions and provide green infrastructure practices which meet water quality and quantity volumes required under the SPDES Phase II General Construction Permit (GP-0-15-002).

There are not any listed threatened or endangered species habitat designated in the area, nor are there any state or federal wetlands or 100 year flood plains within the area. (See Appendix I). The site is within an archeologically sensitive area per the Cultural Resource Information System mapper. Contact has been made with the State Historic Preservation Office (SHPO) to determine if additional research is required. Stormwater runoff from the development discharges to an unnamed stream tributary to Black Creek. The unnamed tributary is classified as a class 'C' stream per NYS DEC. Black Creek is listed as a 303(d) impaired water.

This report will also detail the installation and maintenance of erosion and sediment control devices prior to and during the period of construction activity. Approximately 17.6± acres of this site will be disturbed, during construction activities. A 5-acre waiver will need to be required from the Department of Environmental Conservation, as cuts will be placed in fills in a single continuous operation. A sequence of construction activities has been prepared to ensure proper erosion and stormwater control. This report describes the best management practices and a schedule of implementation. These practices have been designed in accordance with the New York State Standards and Specifications for Erosion and Sediment Control", August 2005.

BASIS FOR DESIGN

The design criteria used for this analysis is based on the "New York State Department of Environmental Conservation's Phase II Stormwater Rules" and the "New York State Stormwater Management Design Manual", dated August 2010 in association with "SPDES General Permit for Stormwater Discharges from Construction Activity", dated January, 2015 (GP-0-15-002). Existing and developed drainage areas will be modeled using the SCS method to determine volume and peak rates of stormwater runoff. Developed peak

rates will be reduced at or below existing peak rates for onsite disturbed areas, through the use of the proposed stormwater management facility.

DESCRIPTION OF SOILS

According to the Monroe County Soil Survey, the original predominant soils present onsite are the Ontario and Hilton Series. These soils have been classified as Hydrologic Soil Group (HSG) C-D. Refer to the soils map and water table map in Appendix 1.

The Ontario series (HSG Type C), consists of deep or very deep, well drained soils formed in till which is strongly influenced by limestone and sandstone. The potential for surface runoff ranges from low to very high. Slopes range from 3 to 8 percent.

The Hilton Series (HSG Type D), consists of very deep, moderately well drained soils formed in till. The potential for surface runoff ranges from very low to medium. Slopes range from 3 to 8 percent.

EXISTING CONDITIONS

Under Existing Conditions there are three distinct drainage areas. Existing Drainage Area 1 is comprised of 12.56 acres, Time of Concentration (Tc) = 16.4 minutes, Curve Number (CN) = 70, and currently drains via sheet and shallow concentrated flow in a northwesterly direction to an to an unnamed tributary of Black Creek offsite. This drainage area is mostly undeveloped.

Existing Drainage Area 2 is comprised of 2.26 acres, Tc=3.4 minutes, CN=96, and currently drains via sheet and shallow concentrated flow in a southwesterly direction, ultimately draining to North Sanford Road right-of-way. An existing building and parking lot currently occupy this area. This area is not treated in a stormwater management facility.

Existing Drainage Area 3 is comprised of 3.29 acres, Tc=2.1 minutes, CN=95, and currently drains via sheet and shallow concentrated flow to the eastern property line, ultimately draining to South Main Street right-of-way. An existing building and parking lot currently occupy this area. This area is not treated in a stormwater management facility. The existing drainage areas are shown on the drawing entitled, "Existing Drainage Area Map" (See Appendix 1). Table 1 provides a summary of existing peak flow rates.

TABLE 1 - EXISTING PEAK FLOW RATES (18.11 Acres)

Area Designation	Q_1 (cfs)	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
(E-1) (12.56 ac.)	3.46	5.62	15.59	29.20
(E-2) (2.26 ac.)	6.63	7.65	11.36	15.69
(E-3) (3.29 ac.)	9.31	10.81	16.25	22.60

All supporting data and calculations used to derive these results can be found in Appendix 1.

DEVELOPED CONDITIONS

The developed drainage areas are shown on the "Developed Drainage Area Map" (See Appendix 2). Under developed conditions, a majority of the sites area, and all of the new impervious areas will be directed to the proposed stormwater management pond. The overall site discharge has been reduced below existing conditions.

Developed Drainage Area 1 is comprised 14.43 acres, Time of Concentration (Tc) = 3.4 minutes), Curve Number (CN) =94, and is the area containing the proposed building and parking lot. Drainage area 1 will be routed through multiple bio-retention filters, and ultimately draining into the proposed stormwater management pond.

Developed Drainage Area 2 is comprised of 2.11 acres, Tc=2.4 minutes, CN=96, and will continue to flow via sheet and shallow concentrated flow to North Sanford Road right-of-way. Following construction, less area will drain undetained to the southwest; therefore a reduction in peak flow rates will be achieved.

Developed Drainage Area 3 is comprised of 1.57 acres, Tc=3.7 minutes, CN=93, and will sheet flow to the east property line. The existing building will be demolished, and repaved. Following construction, less area will drain undetained to South Main Street right-of-way; therefore a reduction in peak flow rates will be achieved.

Table 2 summarizes the undetained developed peak flow rates for the drainage areas (before stormwater management facility routing in area 1).

TABLE 2 - DEVELOPED PEAK FLOW RATES (18.11 Acres)

Area Designation	Q_1 (cfs)	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
(D-1) (14.43 ac.)	39.25	45.85	69.87	97.92
(D-2) (2.11 ac.)	6.19	7.14	10.60	14.65
(D-3) (1.57 ac.)	4.09	4.81	7.44	10.51

All supporting data and calculations used to derive the developed peak flow rates can be found in Appendix 2.

ROUTED OUTFLOWS

The proposed stormwater management facility is designed to reduce the developed peak flow rates from the site to less than existing rates. Table 3 summarizes the results of routing the developed area 1 hydrograph through the facility using an inflow-storage-outflow scenario.

TABLE 3 - HYDROGRAPH RESERVOIR ROUTINGS (AREA 1) (14.43 Acres)

Storm Frequency (yrs)	Inflow Hydrograph Peak (cfs)	Storage Provided (ft.³)	Maximum Water Elevation (ft.)	Peak Outflow (cfs)
1	39.25	~~68,812~~ 53,418	~~563.97~~ 564.17	~~0.32~~ 1.17
2	45.85	~~82,323~~ 63,864	~~564.30~~ 564.48	~~0.35~~ 1.28
10	69.87	~~100,680~~ 85,137	~~564.74~~ 565.07	~~3.44~~ 7.91
100	97.92	~~138,127~~ 121,989	~~565.57~~ 566.01	~~5.77~~ 10.21

All supporting data and calculations used to derive the routed outflows can be found in Appendix 2.

SUMMARY OF PEAK FLOW RATES

Tables 4, 5, and 6 compares the existing vs. developed peak flow rates for all 3 discharge points.

TABLE 4 - EXISTING VS. DEVELOPED PEAK FLOW RATES (AREA 1)

Storm Frequency	$Q_{Existing}$ (cfs)	$Q_{Developed}$ (cfs)	% Reduction
1	3.46	~~0.32~~ 1.17	~~91~~ 66
2	5.62	~~0.35~~ 1.28	~~94~~ 77
10	15.59	~~3.44~~ 7.91	~~78~~ 49
100	29.20	~~5.77~~ 10.21	~~81~~ 65

TABLE 5 - EXISTING VS. DEVELOPED PEAK FLOW RATES (AREA 2)

Storm Frequency	$Q_{Existing}$ (cfs)	$Q_{Developed}$ (cfs)	% Reduction
1	6.63	6.19	7
2	7.65	7.14	7
10	11.36	10.60	7
100	15.69	14.65	7

TABLE 6 - EXISTING VS. DEVELOPED PEAK FLOW RATES (AREA 3)

Storm Frequency	$Q_{Existing}$ (cfs)	$Q_{Developed}$ (cfs)	% Reduction
1	9.31	4.09	56
2	10.81	4.81	56
10	16.25	7.44	54
100	22.60	10.51	53

These results show a reduction in overall peak flow discharge rates from the site to all discharge points is achieved for the 1 through 100 year storm events.

WATER QUALITY, CHANNEL PROTECTION & RUNOFF REDUCTION VOLUME

In keeping with the goals of the NYSDEC Stormwater Pollution Prevention Control and SPDES General Permit GP-0-15-002 associated with long term development, in order to meet pollutant removal goals, Runoff Reduction and Source Control practices have been implemented to provide at least minimum required Runoff Reduction volume. The basin has also been designed pursuant to the current NYSDEC Stormwater Management Design Manual. In order to meet pollutant removal goals, the basin provides adequate storage, in a permanent pool below the static elevation of the pond surface, for the required water quality volume (WQv) for the site. Calculations for Runoff Reduction and water quality volume can be found in Appendix 2, Calculations. In addition to the water quality volume and also pursuant to the New York State Design Manual, the channel protection volume (CPv) has also been provided. Calculations for the channel protection volume can also be found in the calculations section of Appendix 2.

TABLE 7 - WATER QUALITY & CHANNEL PROTECTION

Water Quality			*Channel Protection*		
WQv Req'd	**WQv Provided**	**Elevation**	**CPv Req'd**	**CPv Provided**	**Elevation**
(ac-ft)	*(ac-ft)*	*(ft.)*	*(ac-ft)*	*(ac-ft)*	*(ft.)*
0.778	~~1.634~~ 1.353	~~562.0~~ 562.40	1.245	~~2.010~~ 1.479	564.5

TABLE 8 - RUNOFF REDUCTION

RRv Req'd (Min)	**RRv Provided**
(ac-ft)	*(ac-ft)*
0.19	0.21

The required Runoff Reduction volume has been met for this site using Bio-Retention.

STORMWATER MANAGEMENT PLANNING

The NYS Stormwater Design Manual has created a five-step planning process for addressing stormwater management in new developments. This process is intended to guide the designer through steps that maintain pre-construction hydrologic conditions of the site.

The five steps include:

1. Site planning to preserve natural features and reduce impervious cover,
2. Calculations of the water quality volume for the site,
3. Incorporation of green infrastructure techniques and standard SMP's with Runoff Reduction Volume (RRv) capacity,

4. Use of standard SMP's where applicable, to treat the portion of water quality volume not addressed by green infrastructure techniques and standard SMP's with RRv capacity, and
5. Design of volume and peak rate control practices where required.

The five-step process has been applied to this site as follows:

1. The proposed project was designed to disturb the minimum amount of natural features while providing the required parking areas that the client requires. The proposed impervious cover is the minimum required to provide for the use. Existing parking areas will be repaved instead of creating additional impervious surfaces.
2. Calculations for water quality volume can be found in Appendix 2.
3. A Bioretention area has been designed to provide Runoff Reduction volume for the development. See the calculations in Appendix 2.
4. A Wet pond has been designed to treat the remaining required water quality volume for both the development. (See Appendix 2)
5. A Wet pond has been designed to control the peak flows. (See Appendix 2)

TECHNICAL JUSTIFICALTION FOR RUNOFF REDUCTION REQUIREMENTS
(Per NYS SWDM Ch. 5)

Preservation of Natural Features and Conservation Design

- **Preservation of Undisturbed Areas:** No work will occur outside of the limits of disturbance. Undisturbed areas will be preserved.
- **Preservation of Buffers:** There are no perennial streams, rivers, or shorelines within or adjacent to the site that require preservation. Vegetated buffers outside of the limits of disturbance will remain undisturbed after construction.
- **Reduction of Clearing and Grading:** Clearing and Grading limits shall be the minimum necessary to build the parking lot, driveways, foundations, utilities, and the stormwater management facilities.
- **Locating Development in Less Sensitive Areas:** The development is located in an area that will avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitat areas. Buildings, roadways and parking areas will be located to fit the terrain and in areas that will create the least impact.
- **Open Space Design:** This development proposes to concentrate the disturbance in as compact an area as possible.
- **Soil Restoration:** Soil amendments (profile or approved equal) will be added to the hydro seed mix, and used in all grass areas.

Planning Practices for Reduction of Impervious Cover

- **Roadway Reduction:** Road lengths and widths have been minimized as much as possible for the use.

- **Sidewalk Reduction:** The minimum amounts of sidewalks are proposed to provide customer access and ADA accessibility.
- **Driveway Reduction:** Driveway lengths and widths have been minimized as much as possible for the use.
- **Cul-de-sac Reduction:** Cul-de-sacs are not proposed for this development.
- **Building Footprint Reduction:** The footprint is the smallest necessary to accommodate the use.
- **Parking Reduction:** The proposed parking lot is the smallest necessary to meet the clients requirements.

Techniques for Runoff Reduction

- **Conservation of Natural Areas:** This site will not incorporate a conservation of the undisturbed areas. There are no buffers on site that require conservation.
- **Sheet flow to Riparian Buffers or Filter Strips:** A majority of the sites impervious area will be captured in the storm water management facility before being discharged off site. the remaining areas sheet to existing grass surfaces offsite.
- **Vegetated Swale:** Vegetated swales will be used as a pre-treatment and conveyance practice.
- **Tree Planting:** Trees and shrubs are proposed within the bio-retention filter areas.
- **Rooftop Disconnection:** Rooftop runoff will discharge into the bioretention area.
- **Stream Daylighting:** There are no streams within the project limits.
- **Rain Gardens:** Rooftop runoff will discharge into either the bioretention area.
- **Green Roofs:** Green roofs are not proposed for this development.
- **Stormwater Planters:** Planters are not proposed for this development.
- **Rain Barrels/Cisterns:** Infrequent use of the collection system by the property owner could cause unintended discharge of the collected water.
- **Porous Pavement:** Porous pavement is not proposed for this development due to the restrictive native soils present onsite.

EROSION AND SEDIMENT CONTROL MEASURES

All erosion and sediment control measures were designed in accordance with the New York State Standards and Specifications for Erosion and Sediment Control." The site contractor shall adhere to all erosion and sediment control measures shown on the Storm Water Pollution Prevention Plan. The following temporary measures must be followed to control any potential pollutants leaving the construction site.

Temporary stabilization practices for this site include siltation fence, stone and block inlet protection in paved areas, filter fabric drop inlet protection of new inlets, stone filter check dam(s) and stabilized construction entrance. Installation and Maintenance instructions per the N.Y. Standards and Specifications for Erosion and Sediment Control Manual are included in Appendix III for each of the proposed Erosion and Sediment Control practices.

Permanent stabilization practices for this site include new pavement, crushed stone and permanent seeding of all lawn areas.

ONSITE CONSTRUCTION MATERIAL STORAGE

All site work shall be performed in accordance with Title 29 of the Federal Regulations, Part 1926 Safety and Health Regulations for Construction (OSHA). In addition, the site subcontractor(s) shall follow all material management practices that will reduce the risk of exposure of any material to stormwater runoff. The site subcontractor(s) shall adhere to all of the following construction practices in regard to material storage:

- All materials shall be stored in an orderly manner with their appropriate manufacturer's labels and storage recommendations visible, and where possible, store any spillable materials under a roof or in a storage container.
- Materials should not be mixed with one another unless recommended by the manufacturer. All materials mixed or not mixed shall be sealed properly when not being used.
- Subcontractor shall follow manufacturer's storage recommendations for proper storage of all materials, and a regular inspection shall be made. .
- Every vehicle shall be checked for leakage regularly. Any containers used to store petroleum or other liquids for vehicles shall be stored in proper containers and in a place protected from spilling or mixing with other liquids and placed in secondary containment.
- Subcontractor(s) shall provide proper storage for fertilizers, herbicides, pesticides and paints with manufacturer's labels and storage recommendations visible. All fertilizers, herbicides, pesticides and paints shall be applied using the minimum amount recommended by the manufacturer.

In addition to the standard management practices to be followed above, the sites Subcontractor(s) shall also follow the following spill cleanup procedures:

- Spills of petroleum, toxins or hazardous materials will be reported to the New York State Health Department and the New York State Department of Environmental Conservation. NYSDEC Spill Hotline #: 1-800-457-7362
- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and location of clean up supplies.
- Materials and equipment necessary for cleanup will be kept in a material storage area onsite to be identified by the site subcontractor(s). Equipment and materials will include, but not be limited to brooms, dust pans, mops, rags, gloves, goggles, speed-dry, sand, sawdust and trash containers.
- Spills will be cleaned up immediately upon discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the spilled substance.
- A spill report will be completed and filed on site.

SEQUENCE OF MAJOR ACTIVITIES

The contractor will be responsible for implementing the following erosion control and storm water management control measures. The contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the contractor. The order of activities will be as follows:

A. Construct temporary stabilized construction exit at location shown on the SWPPP Plan Sheet.
B. Install perimeter silt fences in the locations shown on the SWPPP Plan Sheet.
C. Raze existing buildings.
D. Begin asphalt removal operations. Asphalt removal shall be done only in areas where earthwork will be performed and only in areas where building is planned to commence within 14 days after asphalt removal.
E. Commence site grading.
F. 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.
G. 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.
H. Install inlet/outlet protection at the locations of all grate inlets, curb inlets, and at the ends of all exposed storm sewer pipes.
I. Construct Stormwater Management Pond. Stormwater Pond shall be utilized as a temporary sedimentation basin during construction. The sedimentation basin shall provide 3,600 cu.ft. of storage volume per acre draining to the basin. (3,600 cu.ft. x 14.43 ac. = 51,948 cu. ft.) Cumulative volume up to elevation 561.50 = 56,111 cu.ft. Remove sediment from basin when it reaches elevation 561.50.
J. Finalize pavement subgrade preparation.
K. Construct all curb, curb inlets, area inlets, and storm sewer manholes, as shown on the plans. Inlet protection may be removed temporarily for this construction.
L. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.
M. Install base material as required for pavement.
N. Carry out final grading, seeding, and plantings.
O. Remove silt fencing only after all paving is complete and exposed surfaces are stabilized.
P. Remove temporary construction exits only prior to pavement construction in these areas. (these areas are the last to be paved)

LOCATION OF EROSION CONTROL MEASURES

See drawing numbers CA130, and CA500 entitled, “Grading and Erosion Control Plan”, and “Detail Sheet”.

IMPLEMENTATION SCHEDULE

Stabilization measures shall initiate as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, however in no case more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased.

The onsite construction supervisor shall visually inspect all erosion control measures daily. Any measure that is damaged, becomes inoperative or has been in place for a three-month period shall be replaced immediately. Sediment shall be removed from sediment traps when 50% of the capacity is silted in. All erosion/sediment control measures must remain in place and be properly inspected and operable until all disturbed areas have been stabilized.

MAINTENANCE AND INSPECTION SCHEDULE

A qualified site supervisor shall assess the site prior to construction beginning and certify in an inspection report that all erosion and sediment facilities have been completely and properly installed and functional. Once construction begins, an inspection shall be done every seven (7) days and two times every seven days when more than five (5) acres are disturbed at any one time. The following should be included in the inspectors report following each site visit:

- 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 7-day period.
- Indicate on a site plan areas that have had temporary or permanent stabilization.
- Indicate on a site plan areas that have not had active site work within the past 7 days.
- All erosion and sediment controls shall be inspected and the approximate percent of remaining silt storage capacity (in the sediment trap basins) shall be reported in the inspection report on a weekly basis.
- Inspection of erosion and sediment control practices and any maintenance requirements should be recorded. Depths of sediment should be measured, and effectiveness should be recorded. If any methods of erosion or sediment control are found to be inadequate, a recommendation should be made that would bring all facilities to standards set forth by the NYSDEC.
- An onsite logbook shall be maintained and weekly inspections should be kept updated and available for permitting authorities upon request. Prior to construction, the site supervisor shall certify in the site logbook that the SWPPP prepared in accordance with the stormwater permit GP-0-10-001 meets all Federal, and State erosion and sediment control requirements. Prior to filing notice of Termination or the end of the permit, the site supervisor shall perform a final site inspection. The site supervisor shall report that 80% germination has been completed. The report should also state all erosion and sediment methods have been removed.

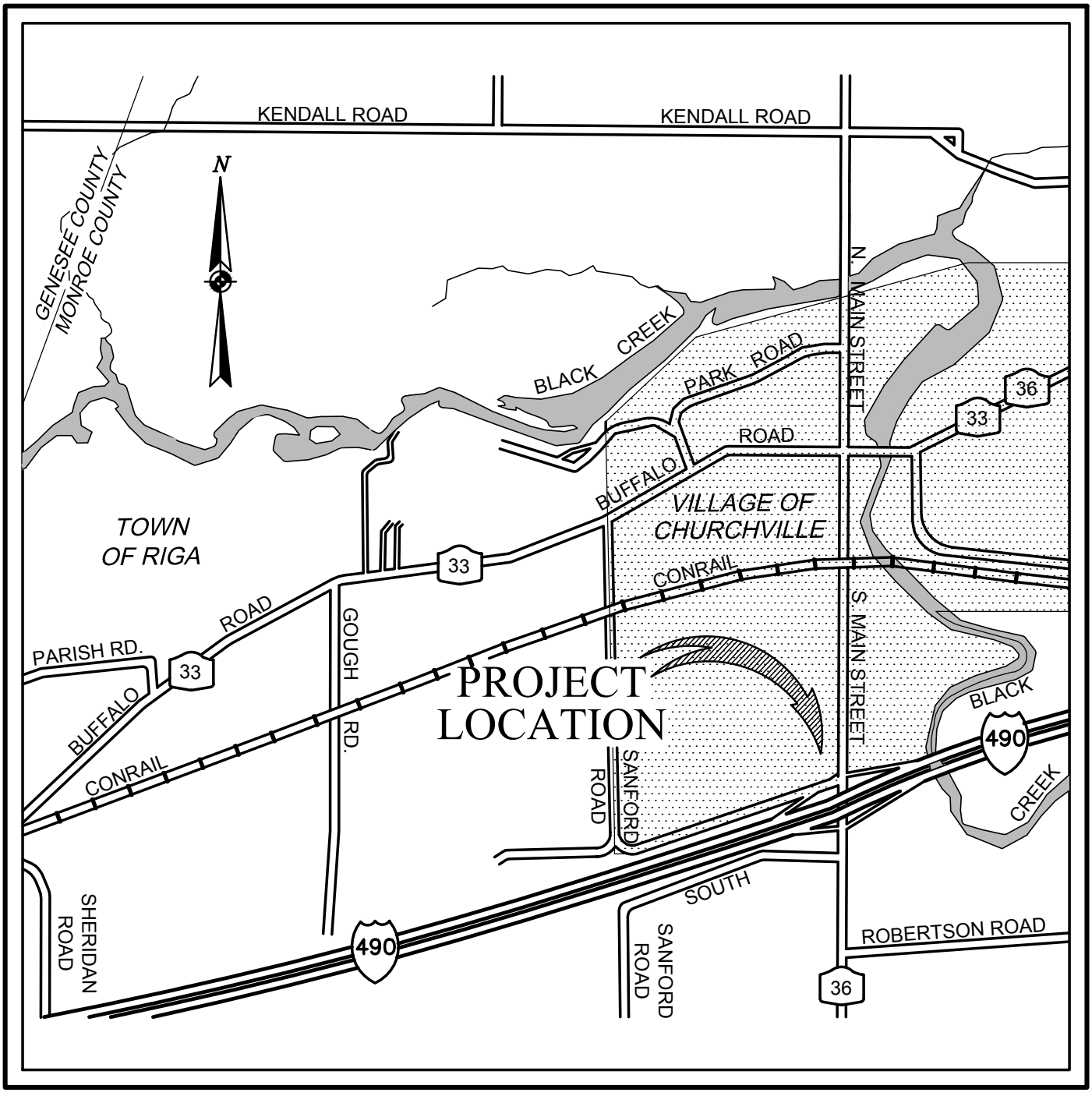
IMPLEMENTATION OF RESPONSIBILITY

Each contractor(s) and subcontractor(s) shall be responsible for implementing the SWPPP temporary practices, structures and controls. The property owner shall be responsible for implementing all permanent operation and maintenance practices and procedures. All contractor(s) and subcontractor(s) and owner shall sign the certification statement at the end of this document. Any new contractor(s) or subcontractor(s) must likewise be added to the certification.

CONCLUSION

Stormwater runoff from the site will be captured and conveyed to the Stormwater Management Facility. The stormwater management facility will provide 1 through 100-year storm event peak flow attenuation for the site as well as water quality and stream channel protection volumes. The Bio-retention Basins will provide Runoff Reduction volume for the site. Design and construction criteria conform with the "New York State Department of Environmental Conservation's Phase II Stormwater Rules" and the "New York State Stormwater Management Design Manual", dated August 2010 in association with "SPDES General Permit for Stormwater Discharges from Construction Activity", dated January, 2015 (GP-0-15-002).

APPENDIX I



LOCATION SKETCH

NOT TO SCALE

Hydrologic Soil Group—Monroe County, New York
(Wilkins R.V.)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: 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: Monroe County, New York
Survey Area Data: Version 12, Sep 15, 2014

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—Jun 30, 2011

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 — Monroe County, New York (NY055)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
HlB	Hilton loam, 3 to 8 percent slopes	B/D	7.7	42.4%
OdA	Odessa silt loam, 0 to 2 percent slopes	C/D	1.0	5.3%
OnB	Ontario loam, 3 to 8 percent slopes	C	9.5	52.3%
Totals for Area of Interest			**18.1**	**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

Depth to Water Table—Monroe County, New York
(Wilkins R.V.)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Water Features
- Streams and Canals

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

Background
- Aerial Photography

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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: Monroe County, New York
Survey Area Data: Version 12, Sep 15, 2014

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—Jun 30, 2011

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.

Depth to Water Table

Depth to Water Table— Summary by Map Unit — Monroe County, New York (NY055)				
Map unit symbol	**Map unit name**	**Rating (centimeters)**	**Acres in AOI**	**Percent of AOI**
HlB	Hilton loam, 3 to 8 percent slopes	54	7.7	42.4%
OdA	Odessa silt loam, 0 to 2 percent slopes	31	1.0	5.3%
OnB	Ontario loam, 3 to 8 percent slopes	101	9.5	52.3%
Totals for Area of Interest			**18.1**	**100.0%**

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

Interpret Nulls as Zero: No

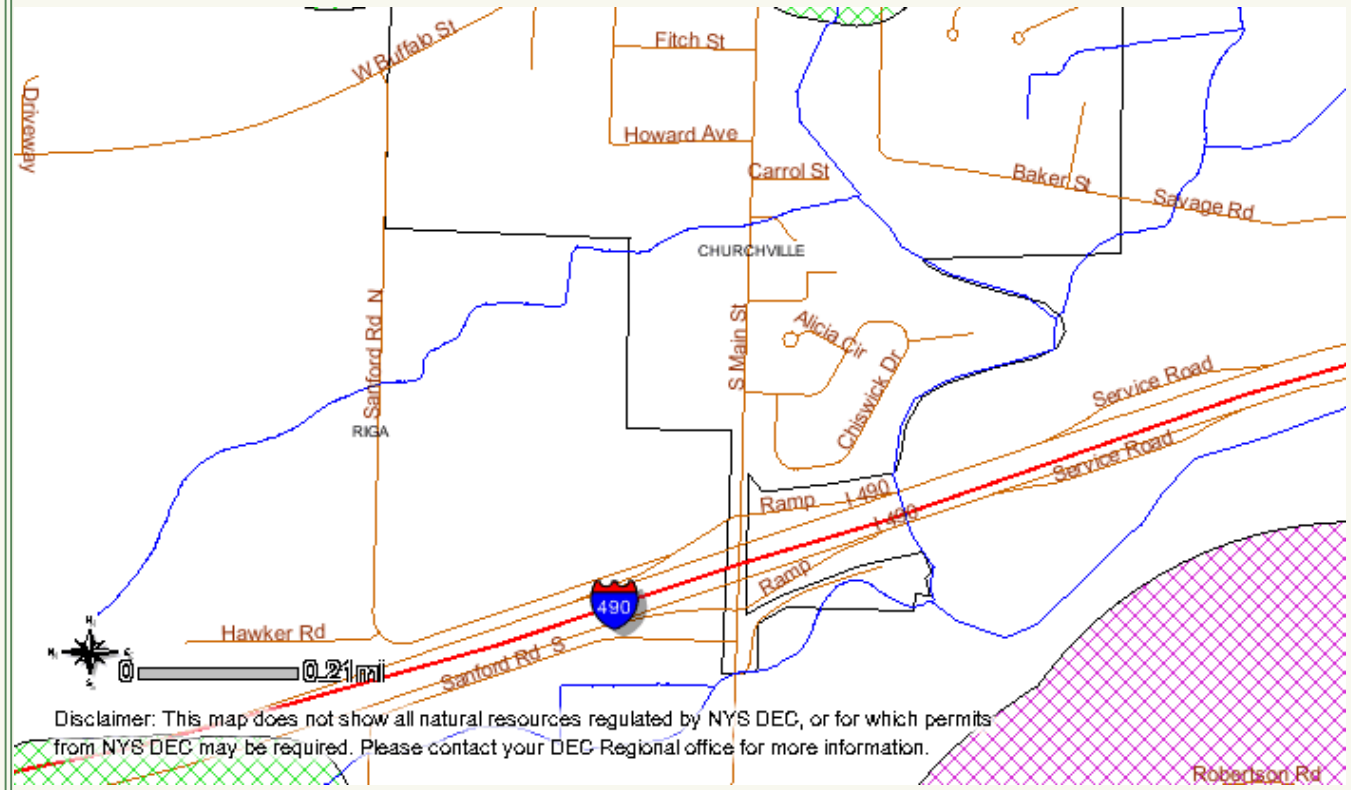
Beginning Month: January

Ending Month: December

[print page] [close window]

Please set your printer orientation to "Landscape".

Wilkins R.V.



MinX: 263974, MaxX: 266227, MinY: 4776384, MaxY: 4774751

Visible Layers

- Classified Streams
- Classified Ponds
- State-Regulated Freshwater Wetlands
- Wetland Checkzone
- State-Regulated Freshwater Wetlands
- Rare Plants and Rare Animals
- Significant Natural Communities Buffered
- Natural Communities Nearby
- Significant Natural Communities
- Interstate Highways
- Towns
- Counties

U.S. Fish and Wildlife Service

National Wetlands Inventory

Wilkins R.V.

Mar 11, 2015

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

- Herbaceous
- Forested/Shrub

Riparian Status

- Digital Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:


Survey Archaeology Areas (View)
Consultation Projects (View)
Archeologically Sensitive Areas
Churchville
Churchville Cemetery
Park Rd
W Buffalo St
Fitch St
Howard Ave
Savage Rd
Shelter Cv
Tower Ln
Chiswick Dr
Black Creek
S Main St
Baker St
Creekside Dr
Redfern Dr
Parnell Dr
Parnell Dr E
Royce Dr
RT-33
RT-36
Sanford Rd N
Sanford Rd S
Churchville-Riga Rd
Riga
Gough Rd
Hawker Rd
Robertson Rd
I-490 W
I-490 E
490
36
33

NEW YORK
STATE OF
OPPORTUNITY

Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

June 03, 2015

Mr. Christopher Centola
Senior Landscape Architect
Costich Engineering
217 Lake Avenue
Rochester, NY 14608

Re: DEC
Wilkins RV, 97 South Main Street
Village of Churchville, Monroe County, NY
15PR00983

Dear Mr. Centola:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6NYCRR Part 617).

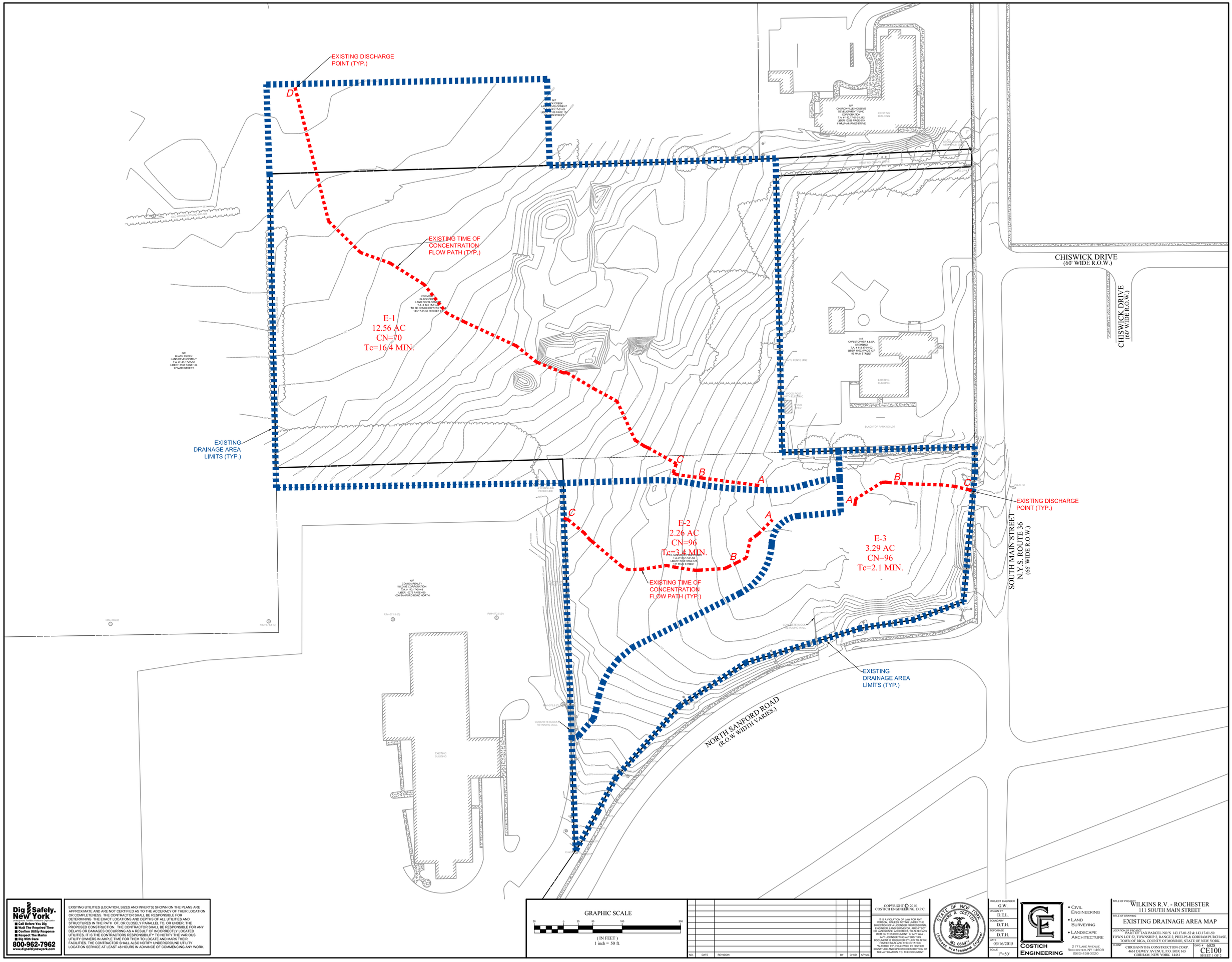
The Wilkins RV building is not eligible for listing on the State and National Registers of Histroic Places. Adjacent to the project site, is Building R (former Boice Residence/Ormrod Farm) which has been determined to be eligible for listing on the State and National Registers of Historic Places. We understand that the existing Wilkins RV building will be demolished and a new 44,000 SF RV sales and service building is proposed to be built with additional parking. We have reviewed the Site and Pavement Marking Plan dated 3/16/2015. We recommend that proposed lighting and fuel/propane operations are located as to not impact the park-like landscape at the adjacent eligible property. Based upon this review, it is the OPRHP's opinion that your project will have No Adverse Impact upon cultural resources in or eligible for inclusion in the State and National Register of Historic Places.

If further correspondence is required regarding this project, I can be reached at (518) 268-2164 or at eric.kuchar@parks.ny.gov. Please be sure to refer to the Project Review (PR) number.

Sincerely,

Eric N. Kuchar
Historic Preservation Technical Specialist

via e-mail only



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EXISTING UTILITIES (LOCATION, SIZES AND INVERTS) SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER, THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS OR DAMAGES OCCURRING AS A RESULT OF INCORRECTLY LOCATED UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY UNDERGROUND UTILITY LOCATION SERVICE AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK.

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

NO.	DATE	REVISION	BY	CHKD.	APVLS.

STATE OF NEW YORK
MARK R. COSTICH
NO. 065971
Licensed Professional Engineer

PROJECT ENGINEER	G.W.
DRAWN BY	D.E.L.
BOUNDARY	D.T.H.
TOPO/BASE	D.T.H.
DATE	03/16/2015
SCALE	1"=50'

COSTICH ENGINEERING
- Civil Engineering
- Land Surveying
- Landscape Architecture

217 Lake Avenue
Rochester, NY 14608
(585) 458-3020

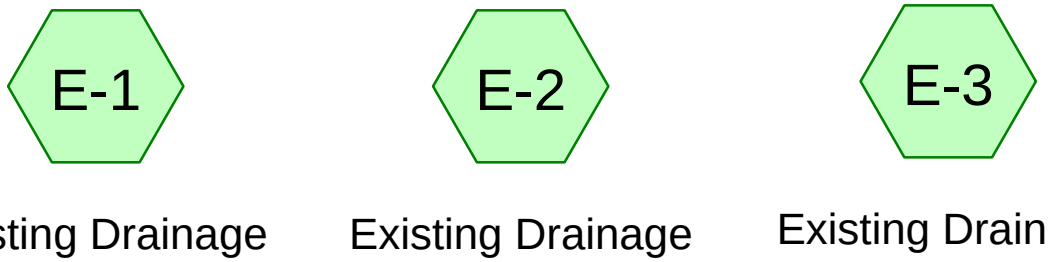
TITLE OF PROJECT: WILKINS R.V. - ROCHESTER
111 SOUTH MAIN STREET

TITLE OF DRAWING: EXISTING DRAINAGE AREA MAP

LOCATION OF PROJECT: PART OF TAX PARCEL NO.'S 143.17-01-52 & 143.17-01-50
TOWN LOT 52, TOWNSHIP 2, RANGE 2, PHELPS & GORHAM PURCHASE,
TOWN OF RIGA, COUNTY OF MONROE, STATE OF NEW YORK.

CLIENT: CHRISANNTHA CONSTRUCTION CORP.
4661 DEWEY AVENUE, P.O. BOX 165
GORHAM, NEW YORK 14461

DWG # 6028
CE100
SHEET 1 OF 2



Subcat Reach Pond Link

Routing Diagram for EXISTING DRAINAGE
Prepared by Costich Engineering, P.C., Printed 3/11/2015

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.260	84	50-75% Grass cover, Fair, HSG D (E-2)
0.191	74	>75% Grass cover, Good, HSG C (E-3)
0.296	80	>75% Grass cover, Good, HSG D (E-3)
6.021	65	Brush, Good, HSG C (E-1)
5.045	73	Brush, Good, HSG D (E-1)
2.990	98	Paved parking, HSG C (E-1, E-2, E-3)
2.164	98	Paved parking, HSG D (E-2, E-3)
0.495	73	Woods, Fair, HSG C (E-1)
0.648	79	Woods, Fair, HSG D (E-1)
18.110	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
9.697	HSG C	E-1, E-2, E-3
8.413	HSG D	E-1, E-2, E-3
0.000	Other	
18.110		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.260	0.000	0.260	50-75% Grass cover, Fair	E-2
0.000	0.000	0.191	0.296	0.000	0.487	>75% Grass cover, Good	E-3
0.000	0.000	6.021	5.045	0.000	11.066	Brush, Good	E-1
0.000	0.000	2.990	2.164	0.000	5.154	Paved parking	E-1, E-2, E-3
0.000	0.000	0.495	0.648	0.000	1.143	Woods, Fair	E-1
0.000	**0.000**	**9.697**	**8.413**	**0.000**	**18.110**	**TOTAL AREA**	

Summary for Subcatchment E-1: Existing Drainage

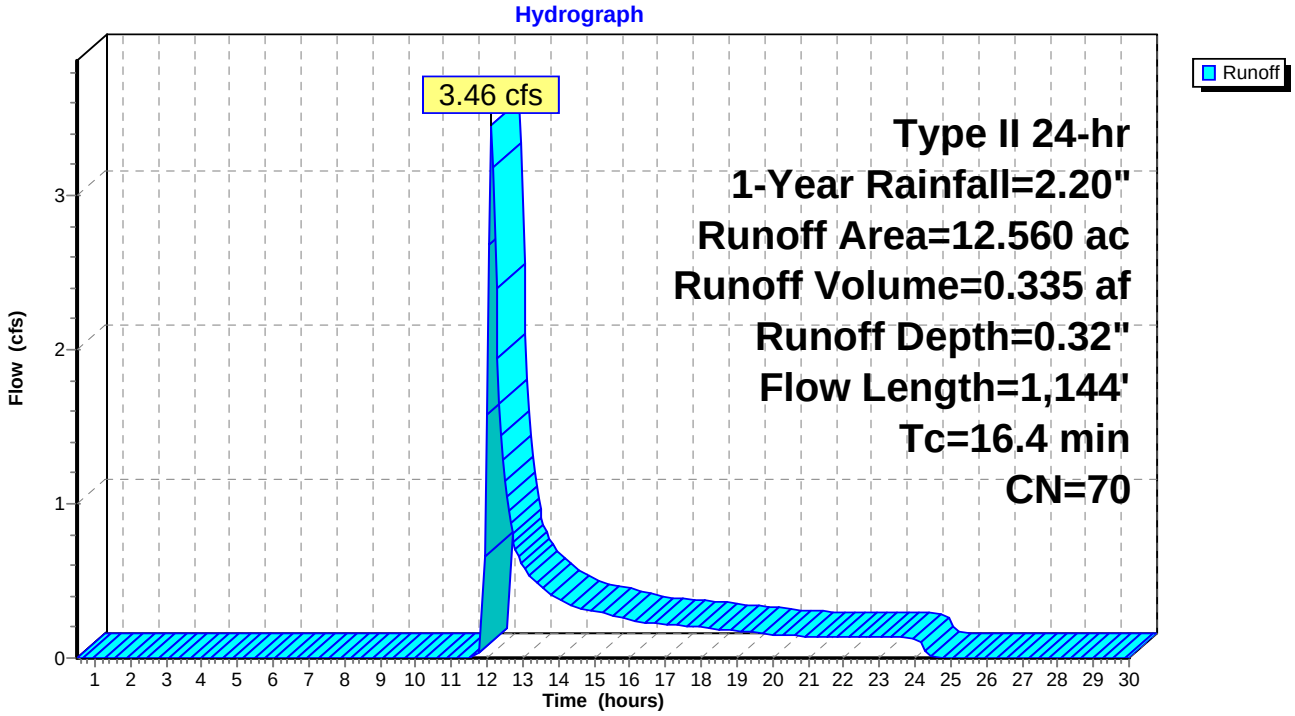
Runoff = 3.46 cfs @ 12.13 hrs, Volume= 0.335 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
0.351	98	Paved parking, HSG C
0.495	73	Woods, Fair, HSG C
0.648	79	Woods, Fair, HSG D
5.045	73	Brush, Good, HSG D
6.021	65	Brush, Good, HSG C
12.560	70	Weighted Average
12.209		97.21% Pervious Area
0.351		2.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0360	1.54		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.3	65	0.0260	3.27		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
15.0	979	0.0240	1.08		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
16.4	1,144	Total			

Subcatchment E-1: Existing Drainage



Summary for Subcatchment E-2: Existing Drainage

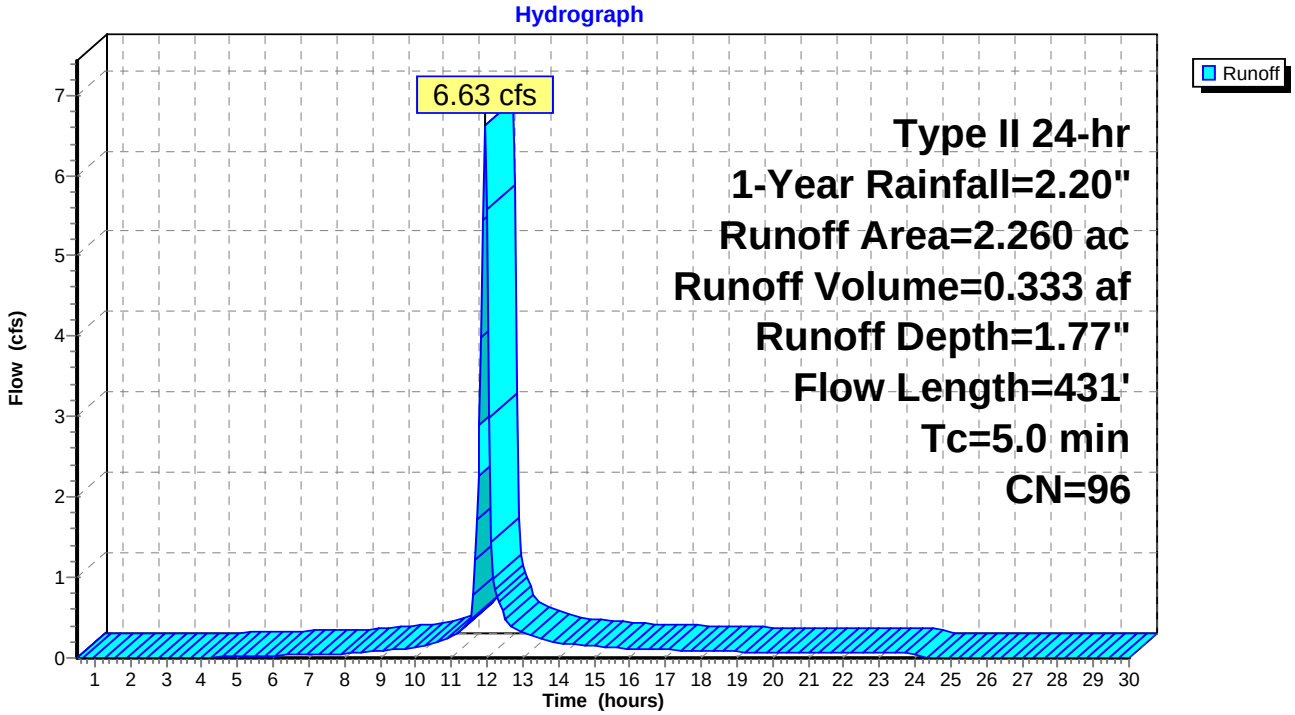
Runoff = 6.63 cfs @ 11.95 hrs, Volume= 0.333 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
0.268	98	Paved parking, HSG D
1.732	98	Paved parking, HSG C
0.260	84	50-75% Grass cover, Fair, HSG D
2.260	96	Weighted Average
0.260		11.50% Pervious Area
2.000		88.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
1.6	331	0.0290	3.46		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
3.4	431	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E-2: Existing Drainage



Summary for Subcatchment E-3: Existing Drainage

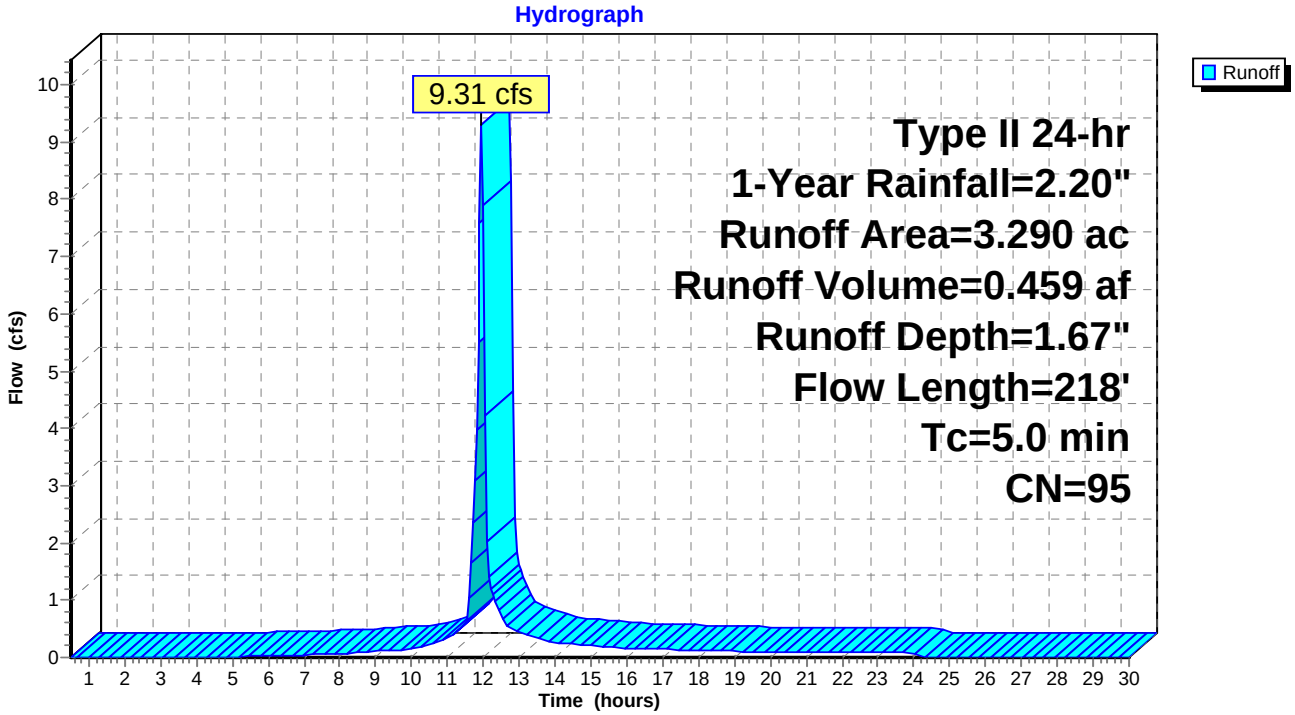
Runoff = 9.31 cfs @ 11.95 hrs, Volume= 0.459 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
1.896	98	Paved parking, HSG D
0.296	80	>75% Grass cover, Good, HSG D
0.191	74	>75% Grass cover, Good, HSG C
0.907	98	Paved parking, HSG C
3.290	95	Weighted Average
0.487		14.80% Pervious Area
2.803		85.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0130	1.02		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.5	118	0.0380	3.96		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
2.1	218	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E-3: Existing Drainage



Summary for Subcatchment E-1: Existing Drainage

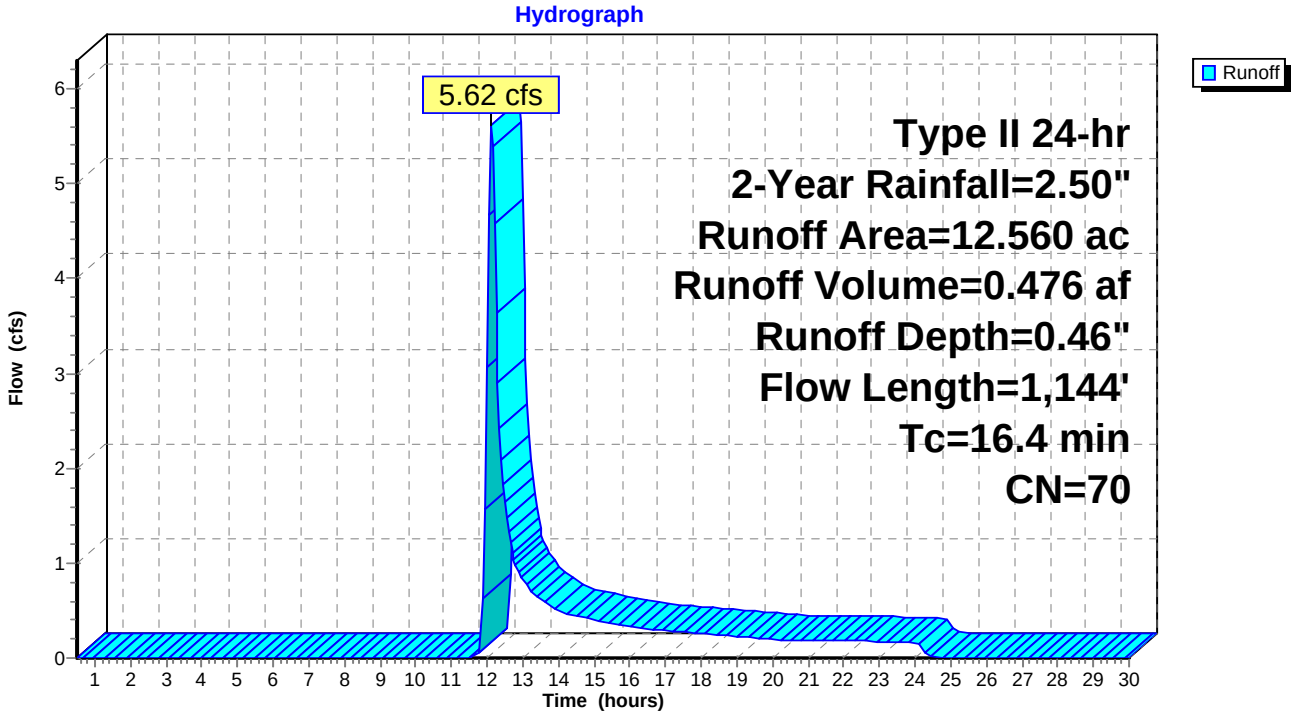
Runoff = 5.62 cfs @ 12.12 hrs, Volume= 0.476 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.50"

Area (ac)	CN	Description
0.351	98	Paved parking, HSG C
0.495	73	Woods, Fair, HSG C
0.648	79	Woods, Fair, HSG D
5.045	73	Brush, Good, HSG D
6.021	65	Brush, Good, HSG C
12.560	70	Weighted Average
12.209		97.21% Pervious Area
0.351		2.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0360	1.54		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.3	65	0.0260	3.27		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
15.0	979	0.0240	1.08		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
16.4	1,144	Total			

Subcatchment E-1: Existing Drainage



Summary for Subcatchment E-2: Existing Drainage

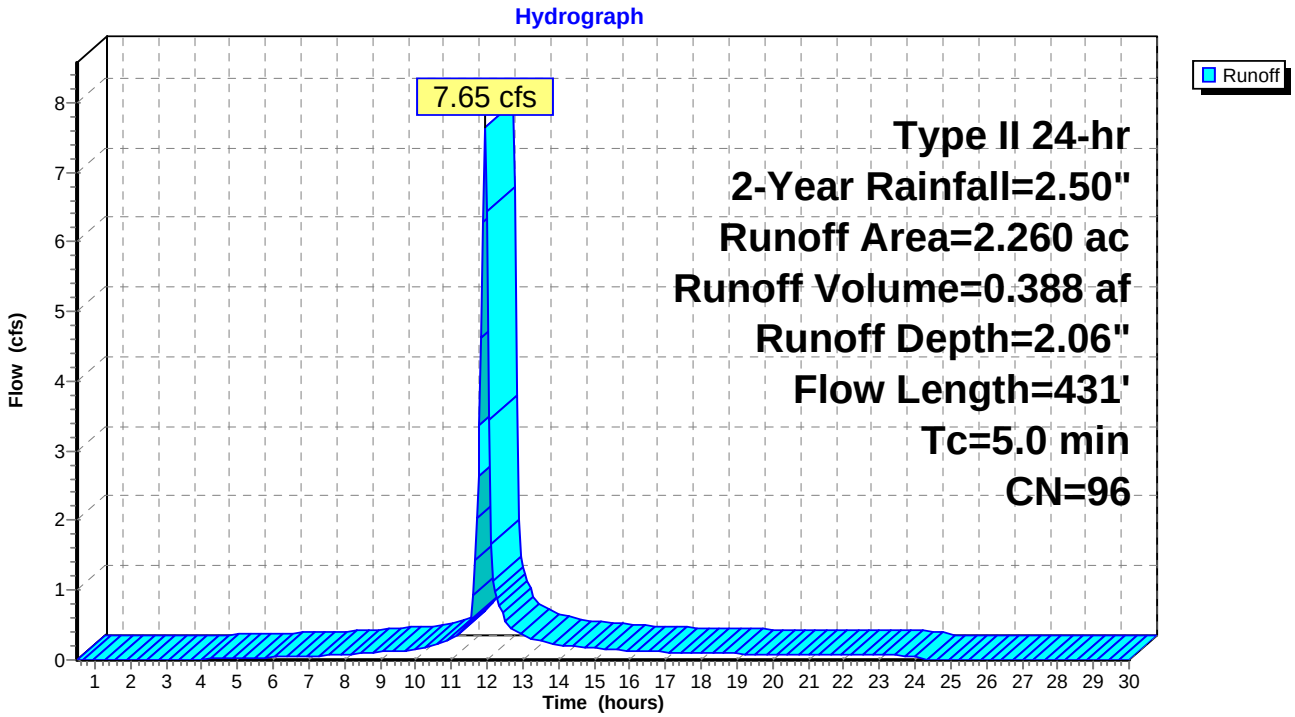
Runoff = 7.65 cfs @ 11.95 hrs, Volume= 0.388 af, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.50"

Area (ac)	CN	Description
0.268	98	Paved parking, HSG D
1.732	98	Paved parking, HSG C
0.260	84	50-75% Grass cover, Fair, HSG D
2.260	96	Weighted Average
0.260		11.50% Pervious Area
2.000		88.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
1.6	331	0.0290	3.46		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
3.4	431	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E-2: Existing Drainage



Summary for Subcatchment E-3: Existing Drainage

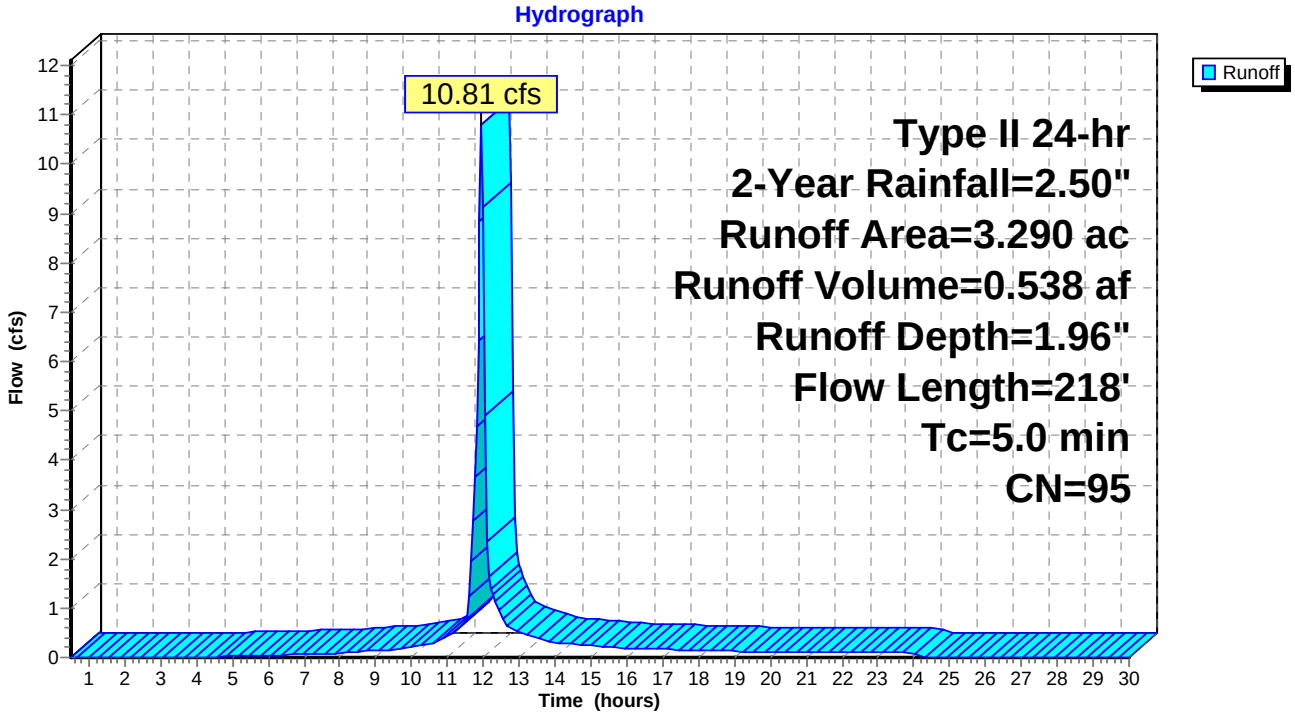
Runoff = 10.81 cfs @ 11.95 hrs, Volume= 0.538 af, Depth= 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.50"

Area (ac)	CN	Description
1.896	98	Paved parking, HSG D
0.296	80	>75% Grass cover, Good, HSG D
0.191	74	>75% Grass cover, Good, HSG C
0.907	98	Paved parking, HSG C
3.290	95	Weighted Average
0.487		14.80% Pervious Area
2.803		85.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0130	1.02		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.5	118	0.0380	3.96		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
2.1	218	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E-3: Existing Drainage



Summary for Subcatchment E-1: Existing Drainage

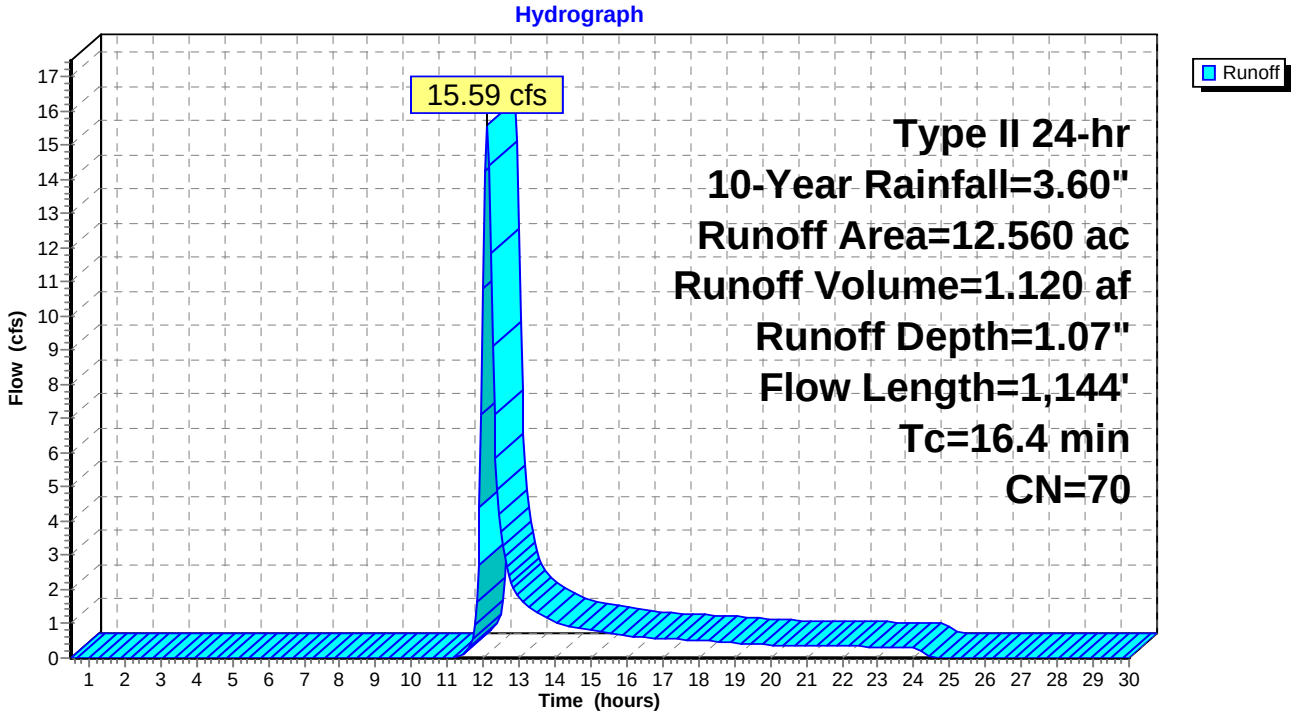
Runoff = 15.59 cfs @ 12.10 hrs, Volume= 1.120 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.60"

Area (ac)	CN	Description
0.351	98	Paved parking, HSG C
0.495	73	Woods, Fair, HSG C
0.648	79	Woods, Fair, HSG D
5.045	73	Brush, Good, HSG D
6.021	65	Brush, Good, HSG C
12.560	70	Weighted Average
12.209		97.21% Pervious Area
0.351		2.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0360	1.54		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.3	65	0.0260	3.27		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
15.0	979	0.0240	1.08		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
16.4	1,144	Total			

Subcatchment E-1: Existing Drainage



Summary for Subcatchment E-2: Existing Drainage

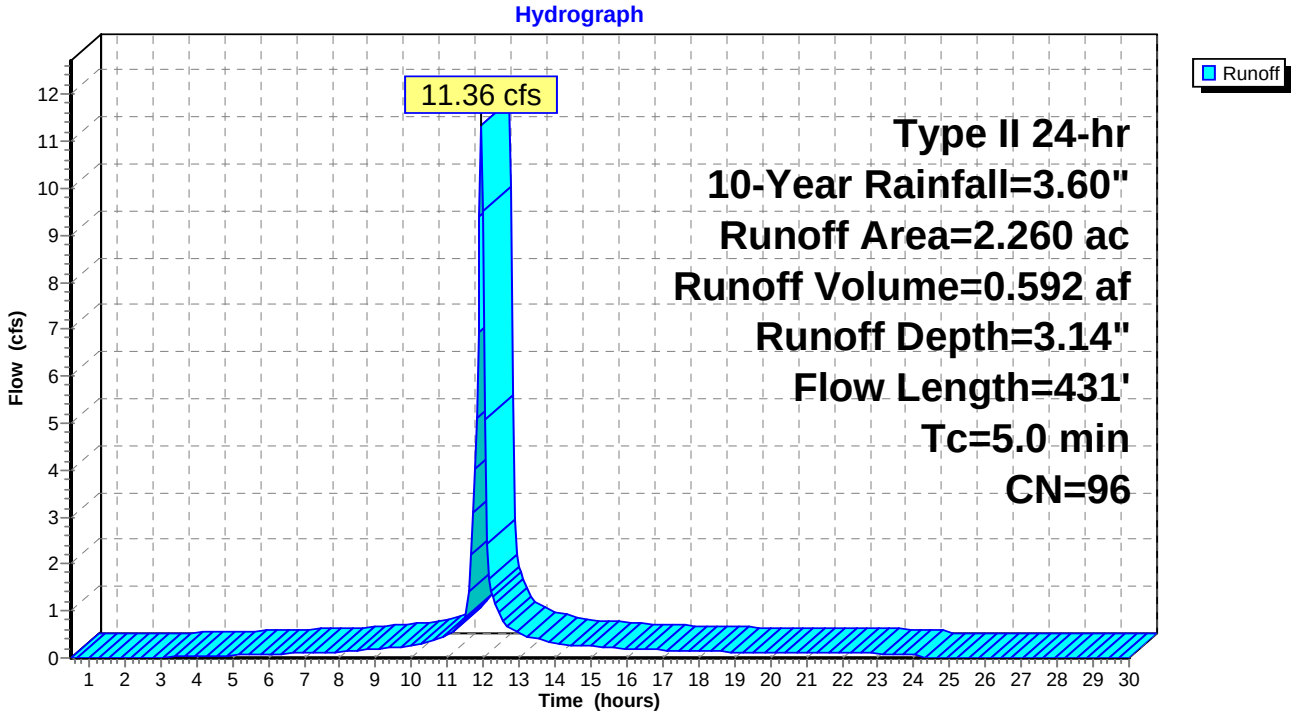
Runoff = 11.36 cfs @ 11.95 hrs, Volume= 0.592 af, Depth= 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.60"

Area (ac)	CN	Description
0.268	98	Paved parking, HSG D
1.732	98	Paved parking, HSG C
0.260	84	50-75% Grass cover, Fair, HSG D
2.260	96	Weighted Average
0.260		11.50% Pervious Area
2.000		88.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
1.6	331	0.0290	3.46		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
3.4	431	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E-2: Existing Drainage



Summary for Subcatchment E-3: Existing Drainage

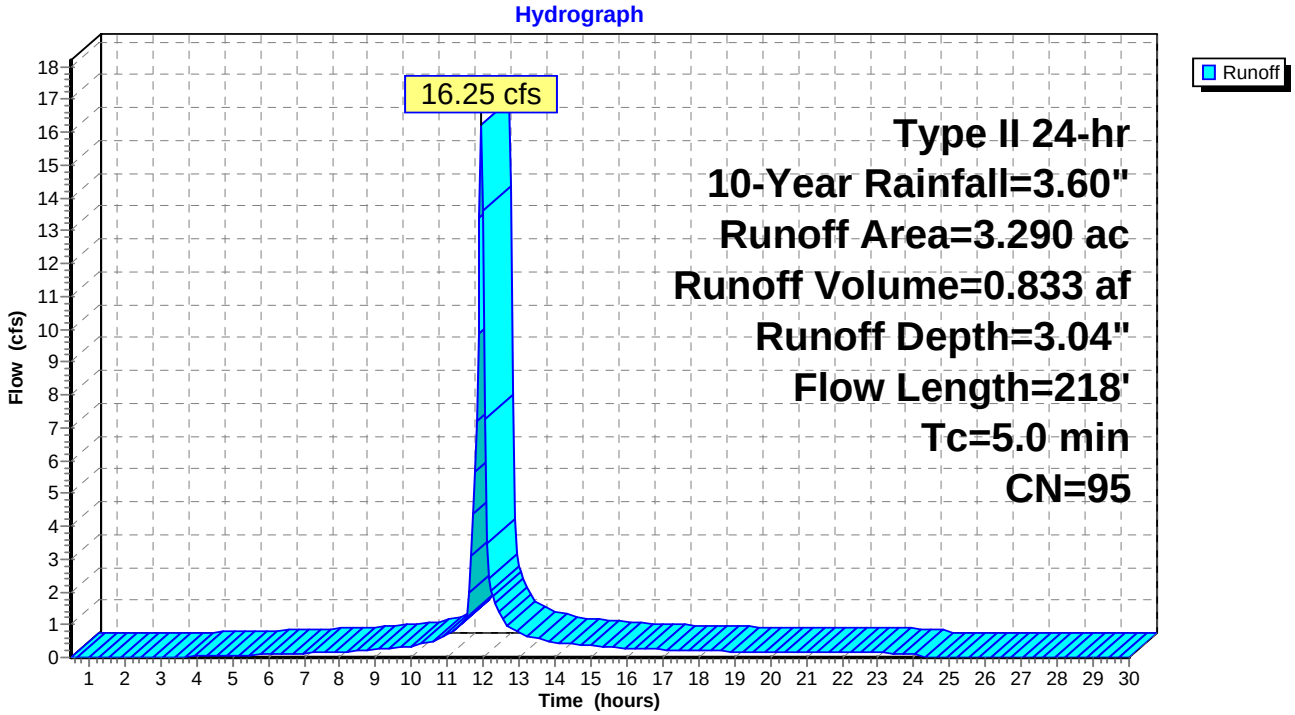
Runoff = 16.25 cfs @ 11.95 hrs, Volume= 0.833 af, Depth= 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.60"

Area (ac)	CN	Description
1.896	98	Paved parking, HSG D
0.296	80	>75% Grass cover, Good, HSG D
0.191	74	>75% Grass cover, Good, HSG C
0.907	98	Paved parking, HSG C
3.290	95	Weighted Average
0.487		14.80% Pervious Area
2.803		85.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0130	1.02		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.5	118	0.0380	3.96		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
2.1	218	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E-3: Existing Drainage



Summary for Subcatchment E-1: Existing Drainage

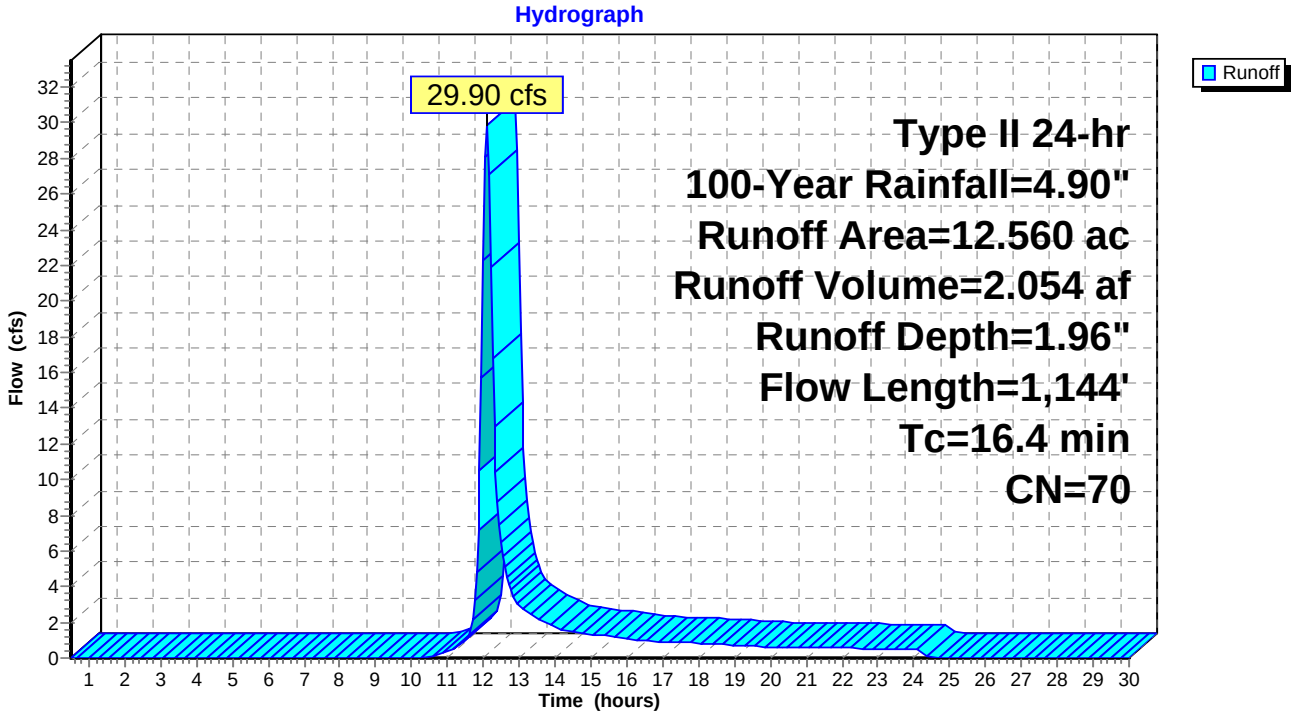
Runoff = 29.90 cfs @ 12.09 hrs, Volume= 2.054 af, Depth= 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=4.90"

Area (ac)	CN	Description
0.351	98	Paved parking, HSG C
0.495	73	Woods, Fair, HSG C
0.648	79	Woods, Fair, HSG D
5.045	73	Brush, Good, HSG D
6.021	65	Brush, Good, HSG C
12.560	70	Weighted Average
12.209		97.21% Pervious Area
0.351		2.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0360	1.54		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.3	65	0.0260	3.27		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
15.0	979	0.0240	1.08		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
16.4	1,144	Total			

Subcatchment E-1: Existing Drainage



Summary for Subcatchment E-2: Existing Drainage

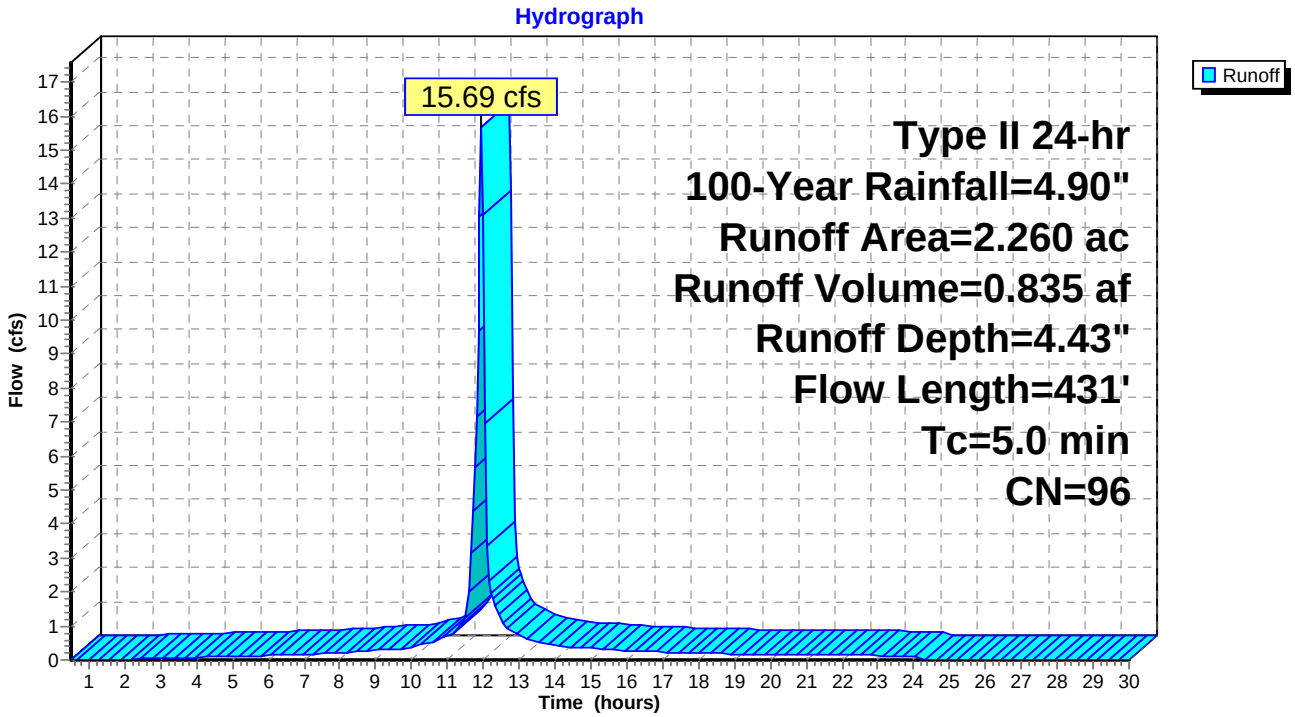
Runoff = 15.69 cfs @ 11.95 hrs, Volume= 0.835 af, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=4.90"

Area (ac)	CN	Description
0.268	98	Paved parking, HSG D
1.732	98	Paved parking, HSG C
0.260	84	50-75% Grass cover, Fair, HSG D
2.260	96	Weighted Average
0.260		11.50% Pervious Area
2.000		88.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
1.6	331	0.0290	3.46		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
3.4	431	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E-2: Existing Drainage



Summary for Subcatchment E-3: Existing Drainage

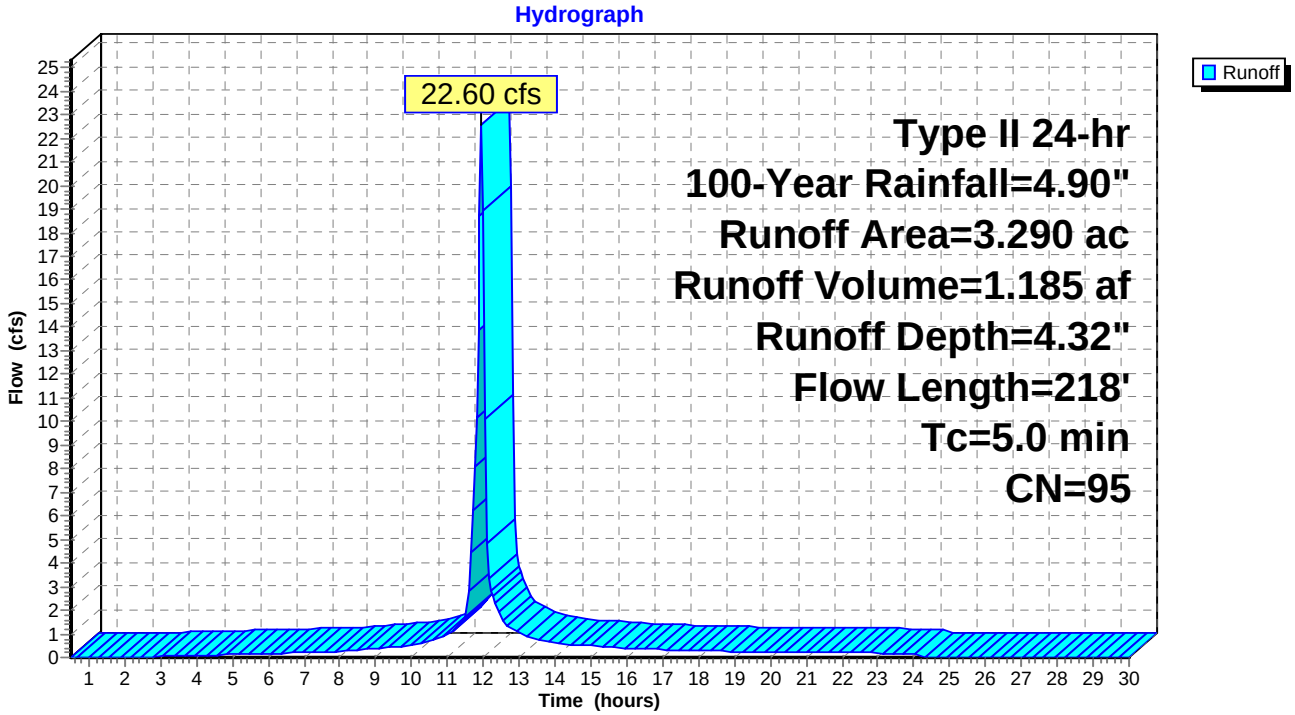
Runoff = 22.60 cfs @ 11.95 hrs, Volume= 1.185 af, Depth= 4.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=4.90"

Area (ac)	CN	Description
1.896	98	Paved parking, HSG D
0.296	80	>75% Grass cover, Good, HSG D
0.191	74	>75% Grass cover, Good, HSG C
0.907	98	Paved parking, HSG C
3.290	95	Weighted Average
0.487		14.80% Pervious Area
2.803		85.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0130	1.02		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.5	118	0.0380	3.96		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
2.1	218	Total, Increased to minimum Tc = 5.0 min			

Subcatchment E-3: Existing Drainage



APPENDIX II

Dig Safely. New York
Underground Facility Protection Organization
- Call Before You Dig
- Wait The Required Time
- Confirm Utility Response
- Respect The Marks
- Dig With Care

800-962-7962
www.digsafelynewyork.com

EXISTING UTILITIES (LOCATION, SIZES AND INVERTS) SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER, THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS OR DAMAGES OCCURRING AS A RESULT OF INCORRECTLY LOCATED UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY UNDERGROUND UTILITY LOCATION SERVICE AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK.

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

NO.	DATE	REVISION	BY	CHKD.	APVLS.

STATE OF NEW YORK
MARK R. COSTICH
No. 065971
Licensed Professional Engineer

PROJECT ENGINEER	G.W.
DRAWN BY	D.E.L.
BOUNDARY	D.T.H.
TOPO/BASE	D.T.H.
DATE	03/16/2015
SCALE	1"=50'

COSTICH ENGINEERING
217 Lake Avenue
Rochester, NY 14608
(585) 458-3020

- Civil Engineering
- Land Surveying
- Landscape Architecture

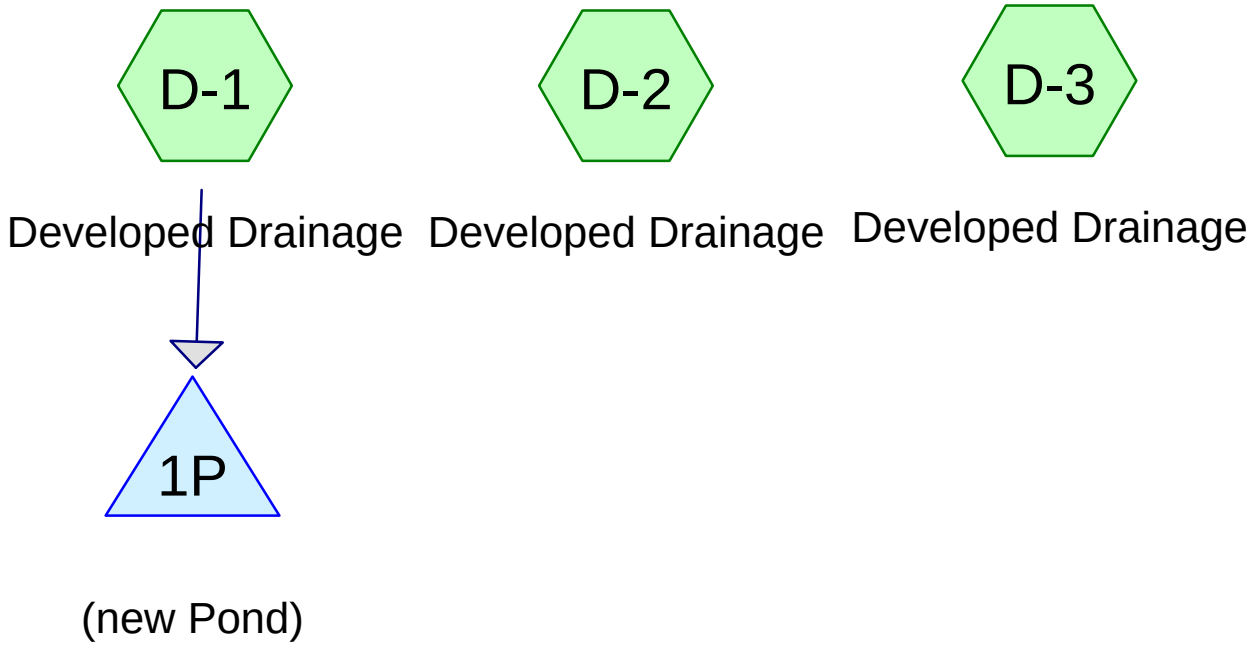
TITLE OF PROJECT
WILKINS R.V. - ROCHESTER
111 SOUTH MAIN STREET

TITLE OF DRAWING
DEVELOPED DRAINAGE AREA MAP

LOCATION OF AND/OR DESCRIPTION OF PROJECT
PART OF TAX PARCEL NO'S 143.17-01-52 & 143.17-01-50
TOWN LOT 52, TOWNSHIP 2, RANGE 2, PHELPS & GORHAM PURCHASE,
TOWN OF RIGA, COUNTY OF MONROE, STATE OF NEW YORK

CLIENT
CHRISANTHA CONSTRUCTION CORP.
4661 DEWEY AVENUE, P.O. BOX 165
GORHAM, NEW YORK 14461

DWG # 6028
CE101
SHEET 2 OF 2



REVISED: 7/9/2015

Subcat Reach Pond Link

Routing Diagram for 20150709 DEVELOPED DRAINAGE
Prepared by Costich Engineering, P.C., Printed 7/10/2015

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.260	84	50-75% Grass cover, Fair, HSG D (D-2)
1.539	74	>75% Grass cover, Good, HSG C (D-1, D-3)
1.161	80	>75% Grass cover, Good, HSG D (D-1, D-3)
13.202	98	Paved parking, HSG C (D-1, D-2, D-3)
1.388	98	Paved parking, HSG D (D-2, D-3)
0.240	73	Woods, Fair, HSG C (D-1)
0.320	79	Woods, Fair, HSG D (D-1)
18.110	**94**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
14.981	HSG C	D-1, D-2, D-3
3.129	HSG D	D-1, D-2, D-3
0.000	Other	
18.110		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.260	0.000	0.260	50-75% Grass cover, Fair	D-2
0.000	0.000	1.539	1.161	0.000	2.700	>75% Grass cover, Good	D-1, D-3
0.000	0.000	13.202	1.388	0.000	14.590	Paved parking	D-1, D-2, D-3
0.000	0.000	0.240	0.320	0.000	0.560	Woods, Fair	D-1
0.000	**0.000**	**14.981**	**3.129**	**0.000**	**18.110**	**TOTAL AREA**	

Time span=0.50-30.00 hrs, dt=0.05 hrs, 591 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment D-1: Developed Drainage Runoff Area=14.430 ac 80.25% Impervious Runoff Depth=1.58"
Flow Length=477' Slope=0.0220 '/' Tc=5.0 min CN=94 Runoff=39.25 cfs 1.905 af

Subcatchment D-2: Developed Drainage Runoff Area=2.110 ac 87.68% Impervious Runoff Depth=1.77"
Flow Length=355' Tc=5.0 min CN=96 Runoff=6.19 cfs 0.311 af

Subcatchment D-3: Developed Drainage Runoff Area=1.570 ac 73.89% Impervious Runoff Depth=1.50"
Flow Length=214' Tc=5.0 min CN=93 Runoff=4.09 cfs 0.196 af

Pond 1P: (new Pond) Peak Elev=564.17' Storage=53,417 cf Inflow=39.25 cfs 1.905 af
Outflow=1.17 cfs 1.487 af

Total Runoff Area = 18.110 ac Runoff Volume = 2.412 af Average Runoff Depth = 1.60"
19.44% Pervious = 3.520 ac 80.56% Impervious = 14.590 ac

Summary for Subcatchment D-1: Developed Drainage

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

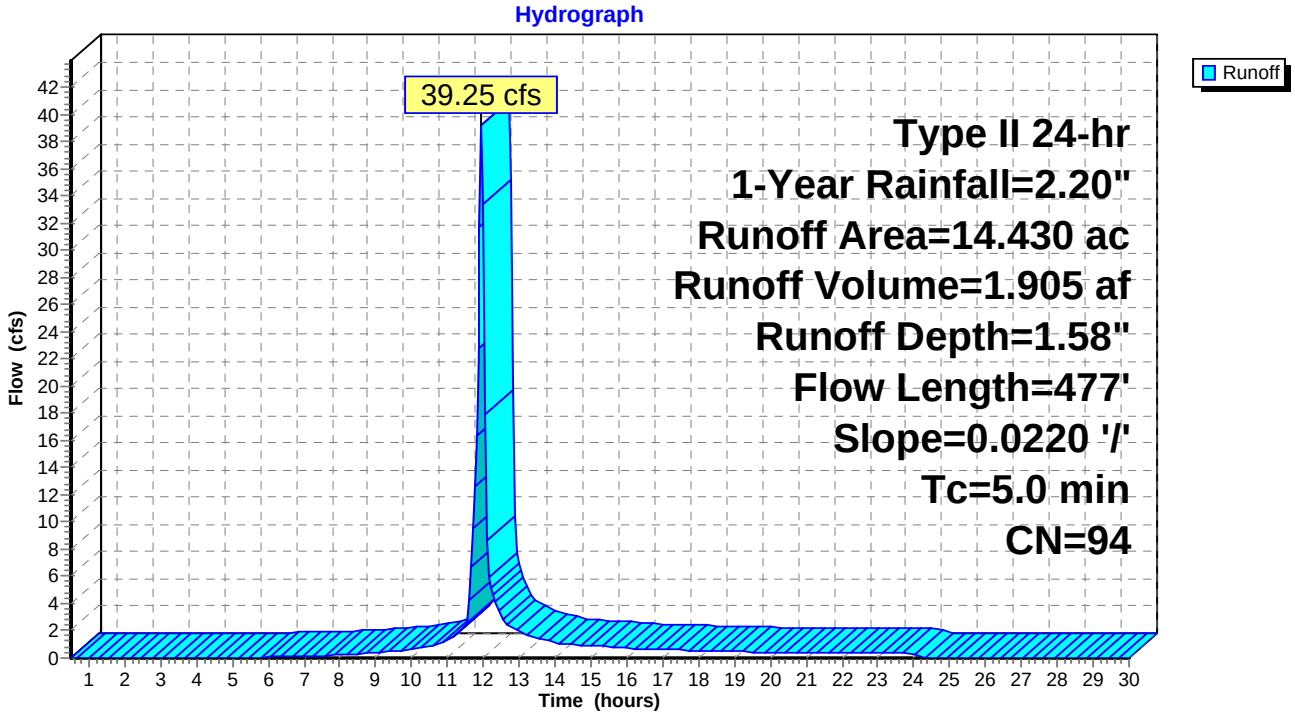
Runoff = 39.25 cfs @ 11.95 hrs, Volume= 1.905 af, Depth= 1.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
11.580	98	Paved parking, HSG C
0.240	73	Woods, Fair, HSG C
0.320	79	Woods, Fair, HSG D
1.400	74	>75% Grass cover, Good, HSG C
0.890	80	>75% Grass cover, Good, HSG D
14.430	94	Weighted Average
2.850		19.75% Pervious Area
11.580		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0220	1.26		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
2.1	377	0.0220	3.01		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
3.4	477	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-1: Developed Drainage



Summary for Subcatchment D-2: Developed Drainage

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

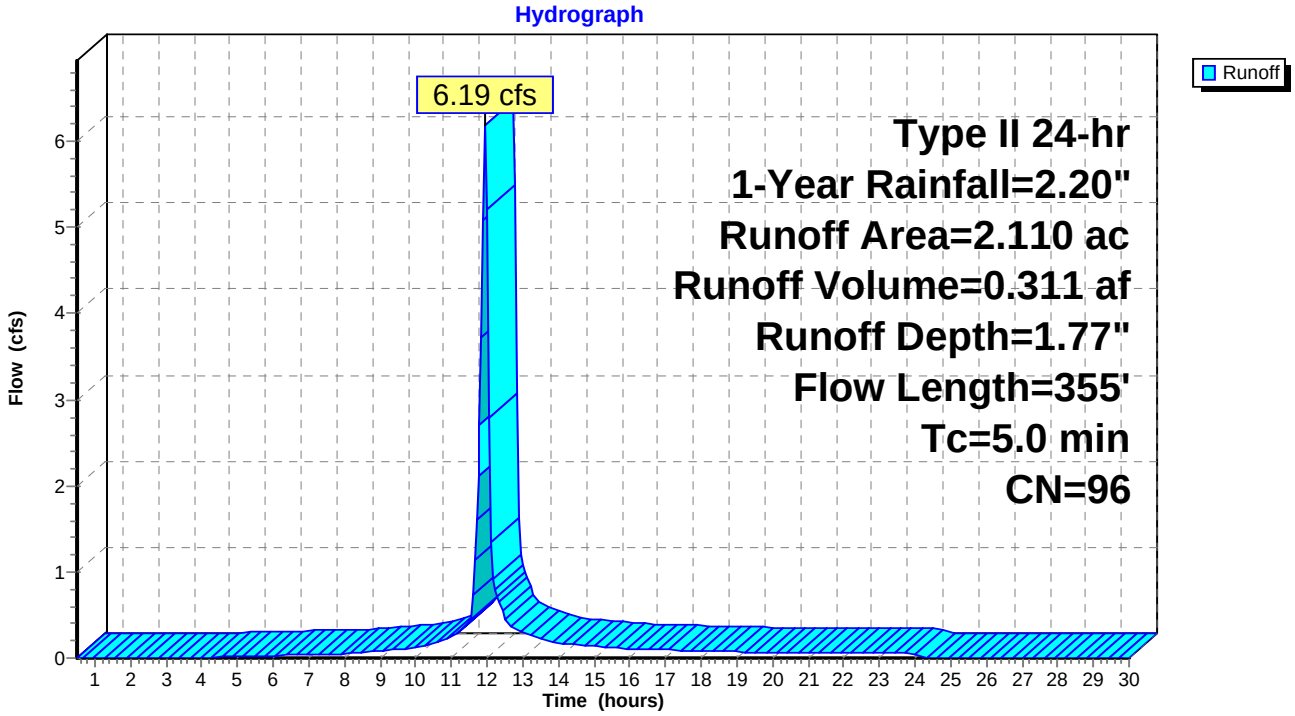
Runoff = 6.19 cfs @ 11.95 hrs, Volume= 0.311 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
0.528	98	Paved parking, HSG D
1.322	98	Paved parking, HSG C
0.260	84	50-75% Grass cover, Fair, HSG D
2.110	96	Weighted Average
0.260		12.32% Pervious Area
1.850		87.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0250	1.33		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.4	73	0.0250	3.21		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.7	182	0.0660	4.14		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
2.4	355	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-2: Developed Drainage



Summary for Subcatchment D-3: Developed Drainage

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

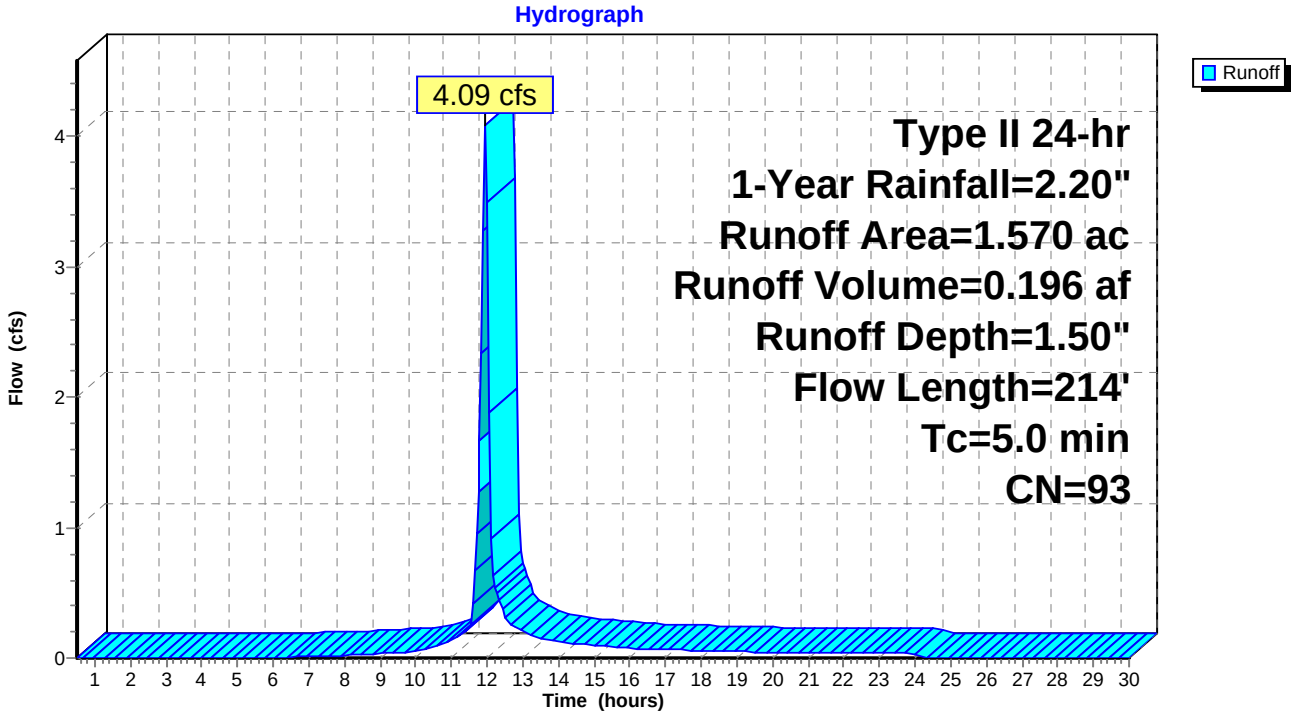
Runoff = 4.09 cfs @ 11.95 hrs, Volume= 0.196 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
0.860	98	Paved parking, HSG D
0.271	80	>75% Grass cover, Good, HSG D
0.139	74	>75% Grass cover, Good, HSG C
0.300	98	Paved parking, HSG C
1.570	93	Weighted Average
0.410		26.11% Pervious Area
1.160		73.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	20	0.1500	0.17		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.50"
1.0	80	0.0250	1.27		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 2.50"
0.4	73	0.0250	3.21		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.3	41	0.0250	2.55		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
3.7	214	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-3: Developed Drainage



Summary for Pond 1P: (new Pond)

Inflow Area = 14.430 ac, 80.25% Impervious, Inflow Depth = 1.58" for 1-Year event
Inflow = 39.25 cfs @ 11.95 hrs, Volume= 1.905 af
Outflow = 1.17 cfs @ 13.95 hrs, Volume= 1.487 af, Atten= 97%, Lag= 120.0 min
Primary = 1.17 cfs @ 13.95 hrs, Volume= 1.487 af

Routing by Stor-Ind method, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Peak Elev= 564.17' @ 13.95 hrs Surf.Area= 33,614 sf Storage= 53,417 cf

Plug-Flow detention time= 482.9 min calculated for 1.484 af (78% of inflow)
Center-of-Mass det. time= 399.0 min (1,195.1 - 796.1)

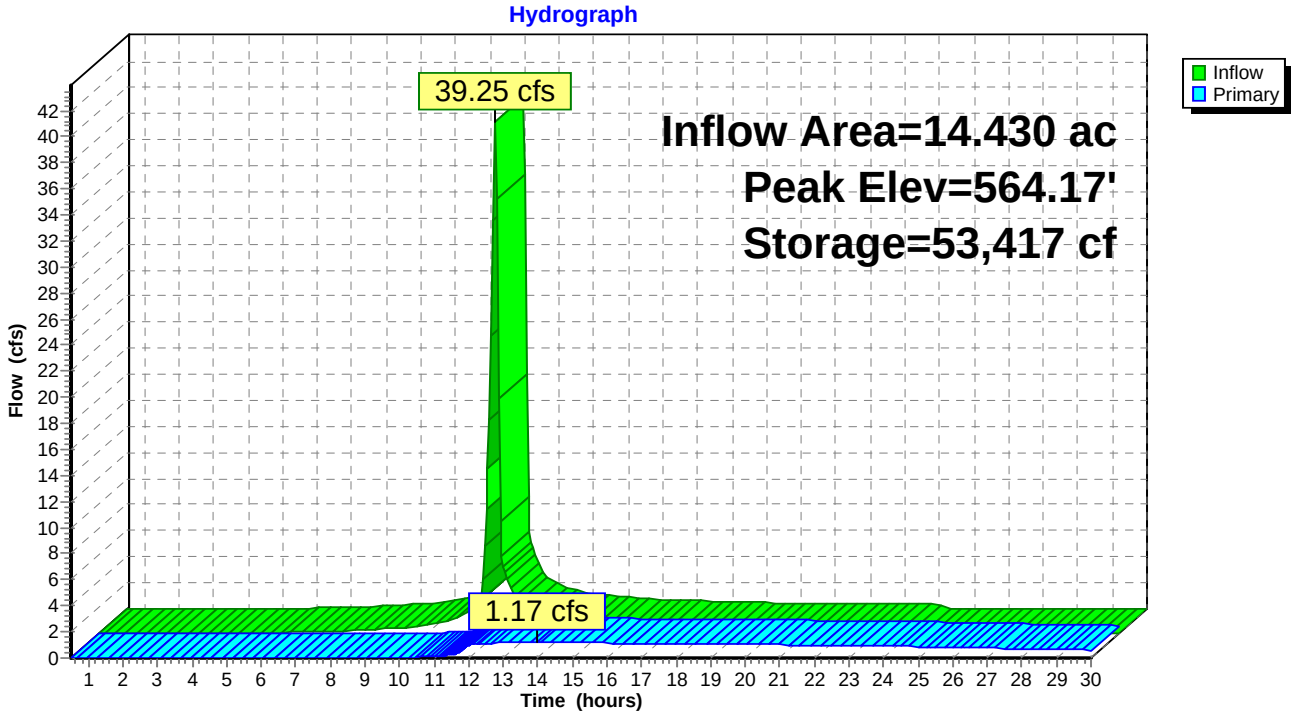
Volume	Invert	Avail.Storage	Storage Description
#1	562.40'	164,163 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
562.40	26,630	0	0
567.00	44,745	164,163	164,163

Device	Routing	Invert	Outlet Devices
#1	Primary	562.40'	**15.0" Round Culvert** L= 30.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 562.40' / 562.40' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	564.50'	**24.0" x 24.0" Horiz. Top of Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	562.40'	**6.0" Vert. low flow orifice** C= 0.600
#4	Primary	566.20'	**20.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.17 cfs @ 13.95 hrs HW=564.17' (Free Discharge)
- **1=Culvert** (Passes 1.17 cfs of 4.80 cfs potential flow)
  - **2=Top of Grate** (Controls 0.00 cfs)
  - **3=low flow orifice** (Orifice Controls 1.17 cfs @ 5.94 fps)
- **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: (new Pond)



Time span=0.50-30.00 hrs, dt=0.05 hrs, 591 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment D-1: Developed Drainage Runoff Area=14.430 ac 80.25% Impervious Runoff Depth=1.87"
Flow Length=477' Slope=0.0220 '/' Tc=5.0 min CN=94 Runoff=45.85 cfs 2.248 af

Subcatchment D-2: Developed Drainage Runoff Area=2.110 ac 87.68% Impervious Runoff Depth=2.06"
Flow Length=355' Tc=5.0 min CN=96 Runoff=7.14 cfs 0.362 af

Subcatchment D-3: Developed Drainage Runoff Area=1.570 ac 73.89% Impervious Runoff Depth=1.78"
Flow Length=214' Tc=5.0 min CN=93 Runoff=4.81 cfs 0.233 af

Pond 1P: (new Pond) Peak Elev=564.48' Storage=63,863 cf Inflow=45.85 cfs 2.248 af
Outflow=1.28 cfs 1.688 af

Total Runoff Area = 18.110 ac Runoff Volume = 2.843 af Average Runoff Depth = 1.88"
19.44% Pervious = 3.520 ac 80.56% Impervious = 14.590 ac

Summary for Subcatchment D-1: Developed Drainage

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

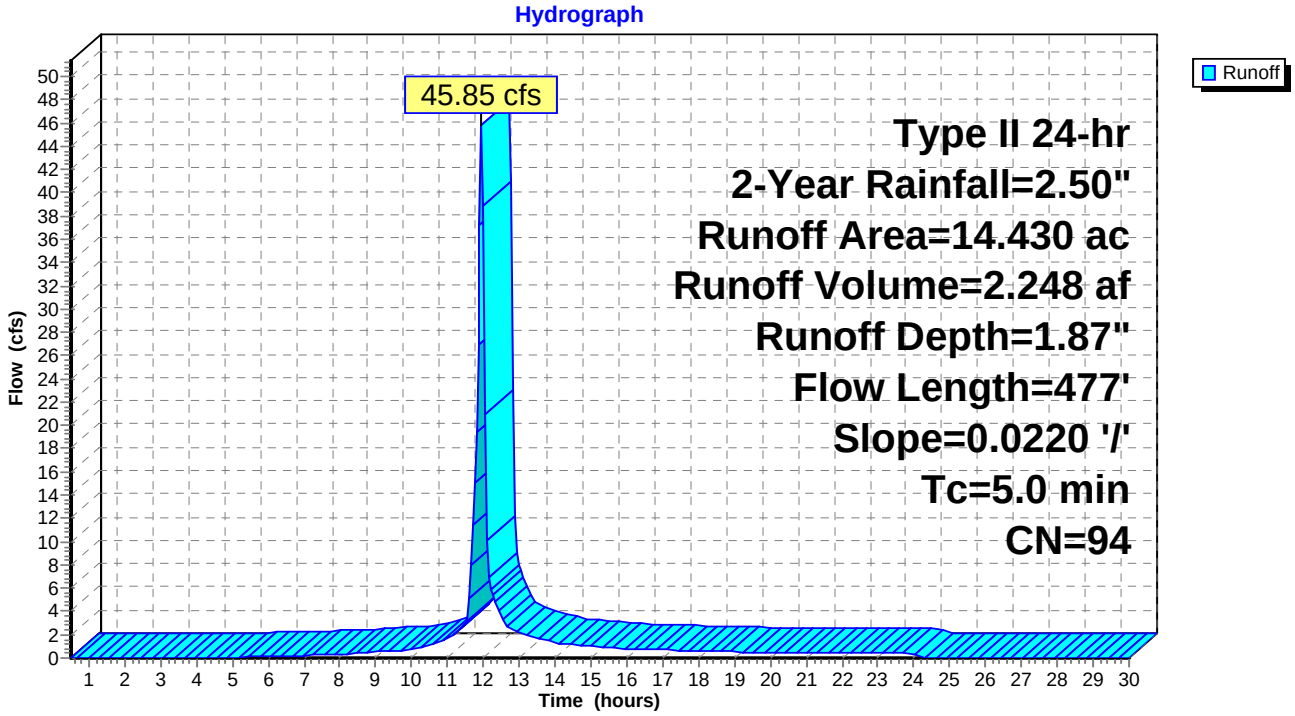
Runoff = 45.85 cfs @ 11.95 hrs, Volume= 2.248 af, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.50"

Area (ac)	CN	Description
11.580	98	Paved parking, HSG C
0.240	73	Woods, Fair, HSG C
0.320	79	Woods, Fair, HSG D
1.400	74	>75% Grass cover, Good, HSG C
0.890	80	>75% Grass cover, Good, HSG D
14.430	94	Weighted Average
2.850		19.75% Pervious Area
11.580		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0220	1.26		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
2.1	377	0.0220	3.01		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
3.4	477	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-1: Developed Drainage



Summary for Subcatchment D-2: Developed Drainage

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

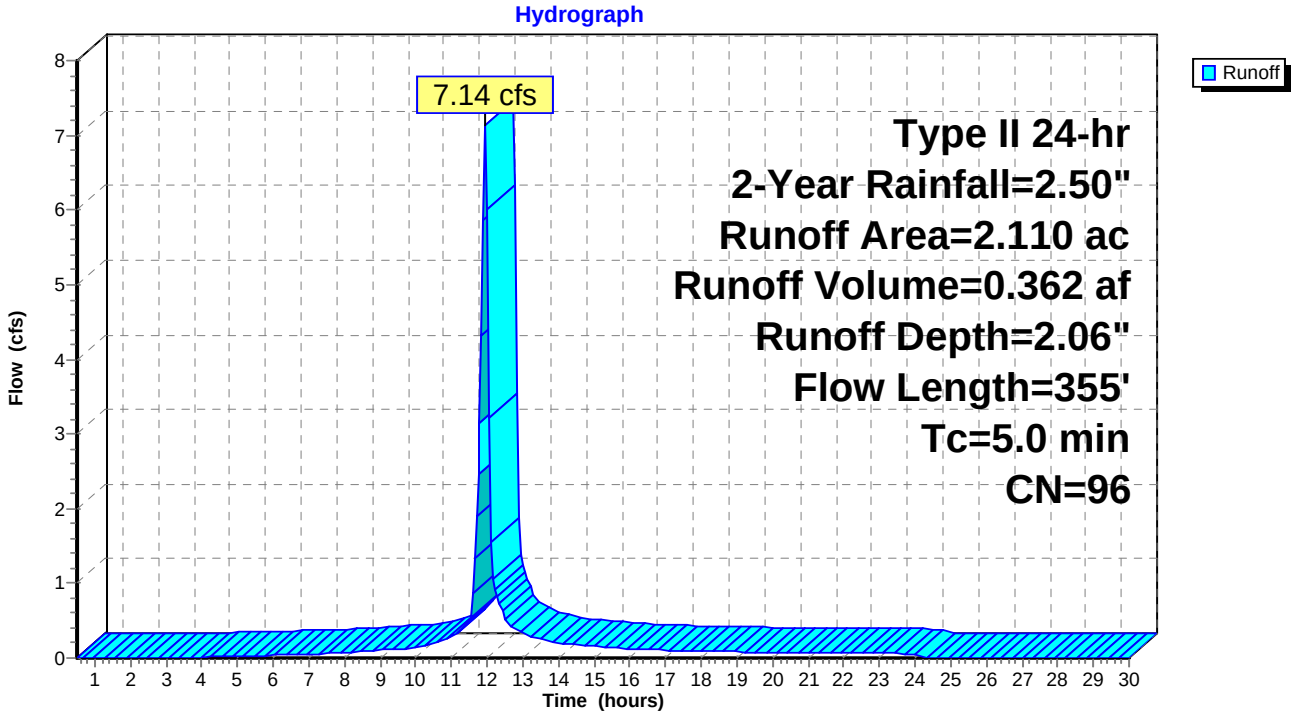
Runoff = 7.14 cfs @ 11.95 hrs, Volume= 0.362 af, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.50"

Area (ac)	CN	Description
0.528	98	Paved parking, HSG D
1.322	98	Paved parking, HSG C
0.260	84	50-75% Grass cover, Fair, HSG D
2.110	96	Weighted Average
0.260		12.32% Pervious Area
1.850		87.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0250	1.33		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.4	73	0.0250	3.21		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.7	182	0.0660	4.14		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
2.4	355	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-2: Developed Drainage



Summary for Subcatchment D-3: Developed Drainage

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

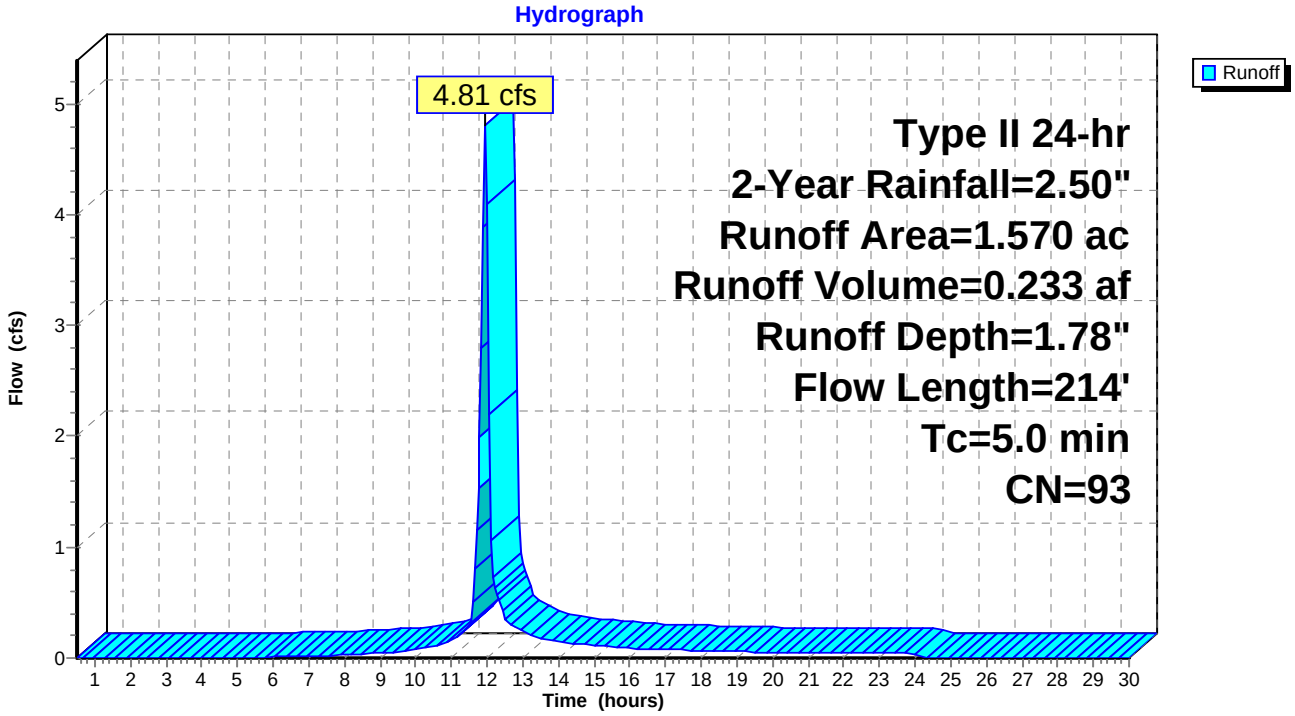
Runoff = 4.81 cfs @ 11.95 hrs, Volume= 0.233 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.50"

Area (ac)	CN	Description
0.860	98	Paved parking, HSG D
0.271	80	>75% Grass cover, Good, HSG D
0.139	74	>75% Grass cover, Good, HSG C
0.300	98	Paved parking, HSG C
1.570	93	Weighted Average
0.410		26.11% Pervious Area
1.160		73.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	20	0.1500	0.17		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.50"
1.0	80	0.0250	1.27		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 2.50"
0.4	73	0.0250	3.21		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.3	41	0.0250	2.55		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
3.7	214	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-3: Developed Drainage



Summary for Pond 1P: (new Pond)

Inflow Area = 14.430 ac, 80.25% Impervious, Inflow Depth = 1.87" for 2-Year event
Inflow = 45.85 cfs @ 11.95 hrs, Volume= 2.248 af
Outflow = 1.28 cfs @ 14.06 hrs, Volume= 1.688 af, Atten= 97%, Lag= 126.6 min
Primary = 1.28 cfs @ 14.06 hrs, Volume= 1.688 af

Routing by Stor-Ind method, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Peak Elev= 564.48' @ 14.06 hrs Surf.Area= 34,816 sf Storage= 63,863 cf

Plug-Flow detention time= 497.3 min calculated for 1.688 af (75% of inflow)
Center-of-Mass det. time= 407.9 min (1,199.4 - 791.4)

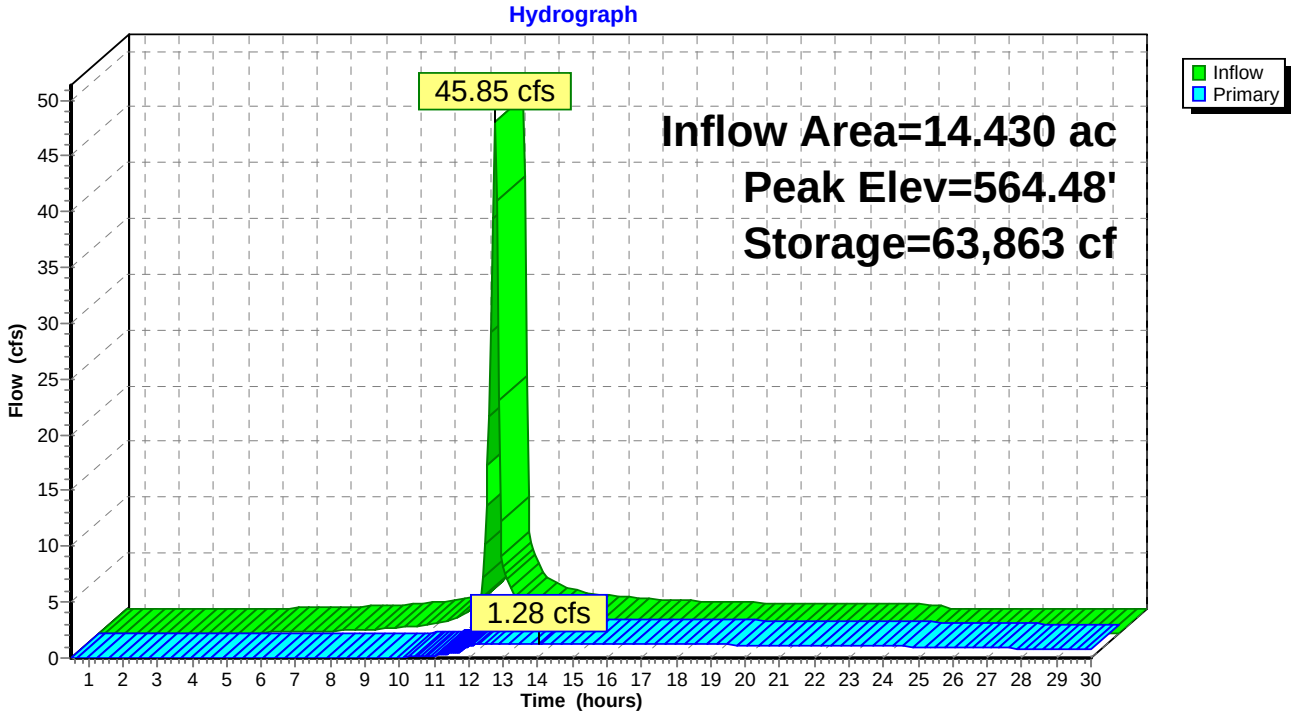
Volume	Invert	Avail.Storage	Storage Description
#1	562.40'	164,163 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
562.40	26,630	0	0
567.00	44,745	164,163	164,163

Device	Routing	Invert	Outlet Devices
#1	Primary	562.40'	**15.0" Round Culvert** L= 30.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 562.40' / 562.40' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	564.50'	**24.0" x 24.0" Horiz. Top of Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	562.40'	**6.0" Vert. low flow orifice** C= 0.600
#4	Primary	566.20'	**20.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.28 cfs @ 14.06 hrs HW=564.48' (Free Discharge)
- **1=Culvert** (Passes 1.28 cfs of 6.04 cfs potential flow)
  - **2=Top of Grate** (Controls 0.00 cfs)
  - **3=low flow orifice** (Orifice Controls 1.28 cfs @ 6.51 fps)
- **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: (new Pond)



Time span=0.50-30.00 hrs, dt=0.05 hrs, 591 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment D-1: Developed Drainage Runoff Area=14.430 ac 80.25% Impervious Runoff Depth=2.93"
Flow Length=477' Slope=0.0220 '/' Tc=5.0 min CN=94 Runoff=69.87 cfs 3.527 af

Subcatchment D-2: Developed Drainage Runoff Area=2.110 ac 87.68% Impervious Runoff Depth=3.14"
Flow Length=355' Tc=5.0 min CN=96 Runoff=10.60 cfs 0.553 af

Subcatchment D-3: Developed Drainage Runoff Area=1.570 ac 73.89% Impervious Runoff Depth=2.83"
Flow Length=214' Tc=5.0 min CN=93 Runoff=7.44 cfs 0.370 af

Pond 1P: (new Pond) Peak Elev=565.07' Storage=85,137 cf Inflow=69.87 cfs 3.527 af
Outflow=7.91 cfs 2.826 af

Total Runoff Area = 18.110 ac Runoff Volume = 4.450 af Average Runoff Depth = 2.95"
19.44% Pervious = 3.520 ac 80.56% Impervious = 14.590 ac

Summary for Subcatchment D-1: Developed Drainage

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

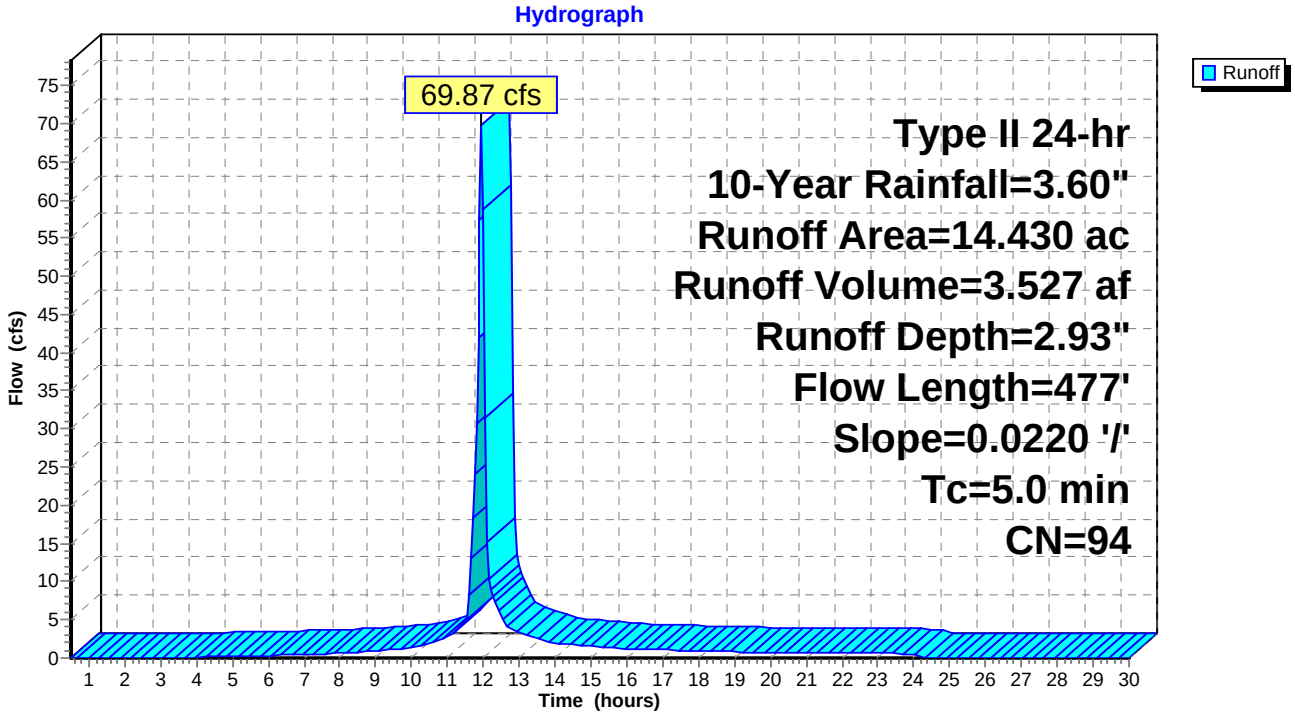
Runoff = 69.87 cfs @ 11.95 hrs, Volume= 3.527 af, Depth= 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.60"

Area (ac)	CN	Description
11.580	98	Paved parking, HSG C
0.240	73	Woods, Fair, HSG C
0.320	79	Woods, Fair, HSG D
1.400	74	>75% Grass cover, Good, HSG C
0.890	80	>75% Grass cover, Good, HSG D
14.430	94	Weighted Average
2.850		19.75% Pervious Area
11.580		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0220	1.26		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
2.1	377	0.0220	3.01		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
3.4	477	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-1: Developed Drainage



Summary for Subcatchment D-2: Developed Drainage

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

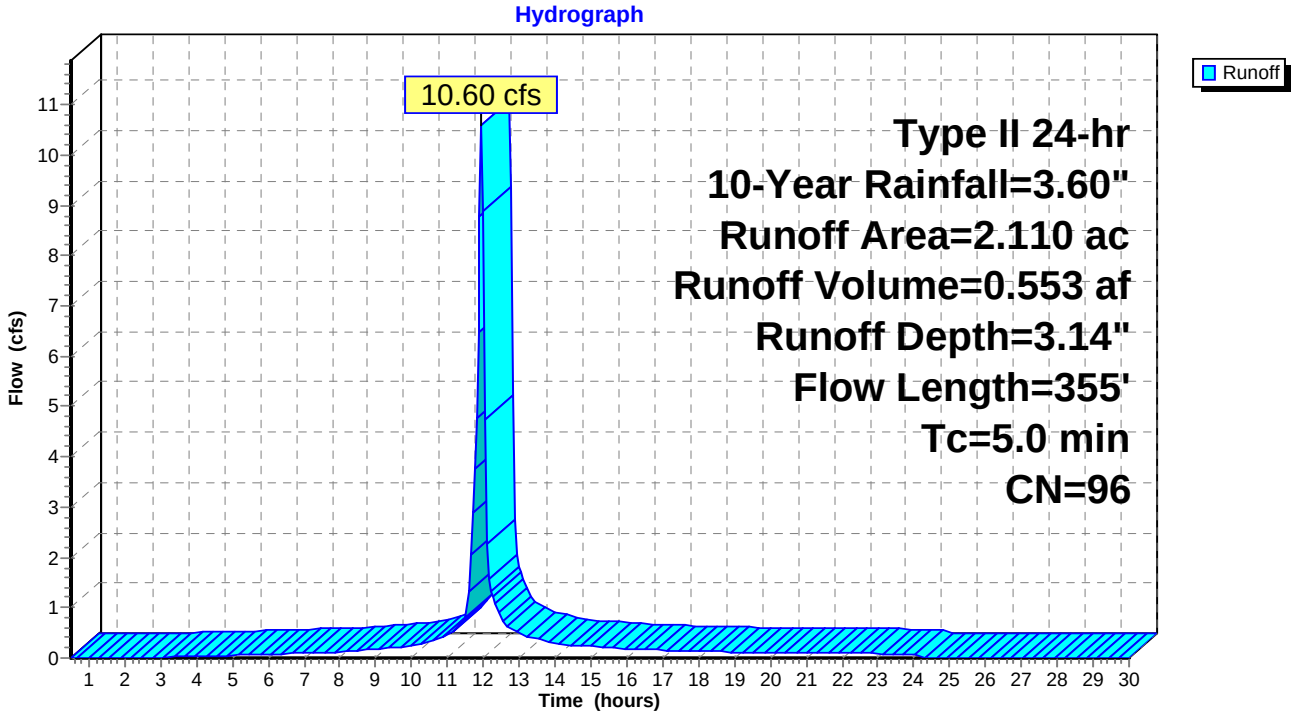
Runoff = 10.60 cfs @ 11.95 hrs, Volume= 0.553 af, Depth= 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.60"

Area (ac)	CN	Description
0.528	98	Paved parking, HSG D
1.322	98	Paved parking, HSG C
0.260	84	50-75% Grass cover, Fair, HSG D
2.110	96	Weighted Average
0.260		12.32% Pervious Area
1.850		87.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0250	1.33		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.4	73	0.0250	3.21		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.7	182	0.0660	4.14		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
2.4	355	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-2: Developed Drainage



Summary for Subcatchment D-3: Developed Drainage

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

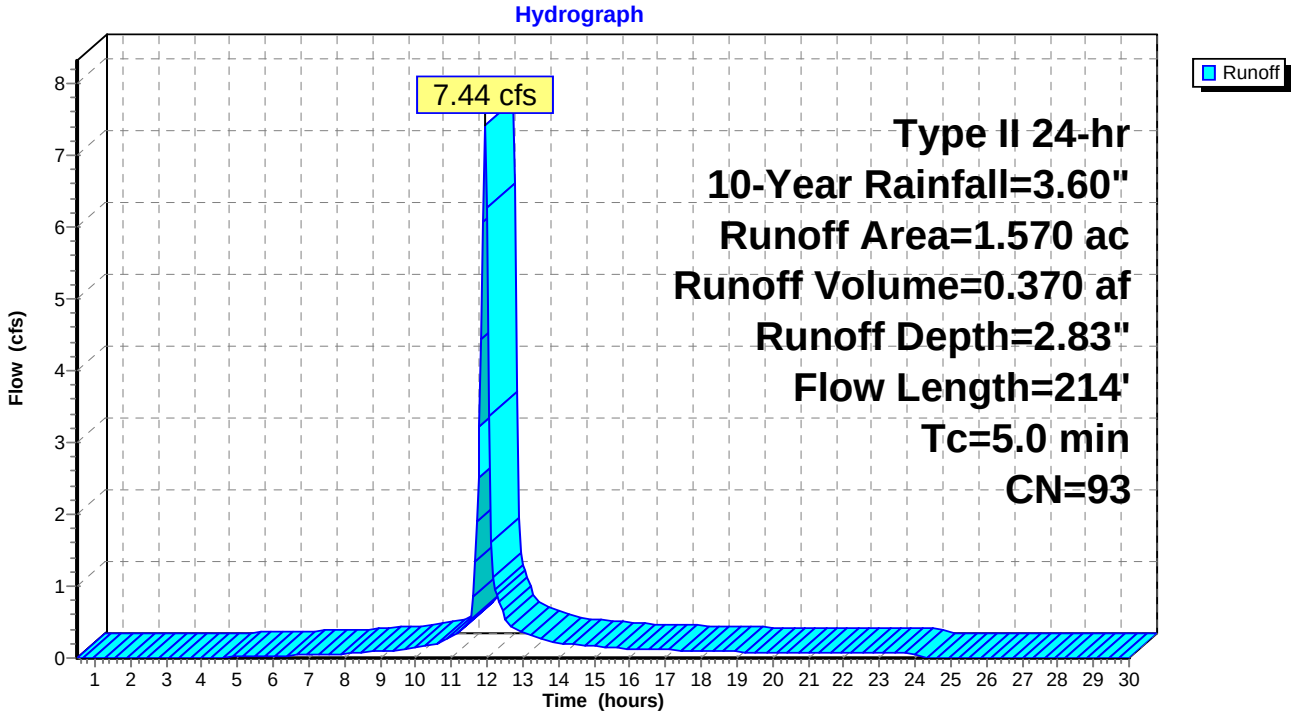
Runoff = 7.44 cfs @ 11.95 hrs, Volume= 0.370 af, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.60"

Area (ac)	CN	Description
0.860	98	Paved parking, HSG D
0.271	80	>75% Grass cover, Good, HSG D
0.139	74	>75% Grass cover, Good, HSG C
0.300	98	Paved parking, HSG C
1.570	93	Weighted Average
0.410		26.11% Pervious Area
1.160		73.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	20	0.1500	0.17		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.50"
1.0	80	0.0250	1.27		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 2.50"
0.4	73	0.0250	3.21		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.3	41	0.0250	2.55		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
3.7	214	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-3: Developed Drainage



Summary for Pond 1P: (new Pond)

Inflow Area = 14.430 ac, 80.25% Impervious, Inflow Depth = 2.93" for 10-Year event
Inflow = 69.87 cfs @ 11.95 hrs, Volume= 3.527 af
Outflow = 7.91 cfs @ 12.27 hrs, Volume= 2.826 af, Atten= 89%, Lag= 19.0 min
Primary = 7.91 cfs @ 12.27 hrs, Volume= 2.826 af

Routing by Stor-Ind method, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Peak Elev= 565.07' @ 12.27 hrs Surf.Area= 37,144 sf Storage= 85,137 cf

Plug-Flow detention time= 353.4 min calculated for 2.826 af (80% of inflow)
Center-of-Mass det. time= 273.9 min (1,052.9 - 779.1)

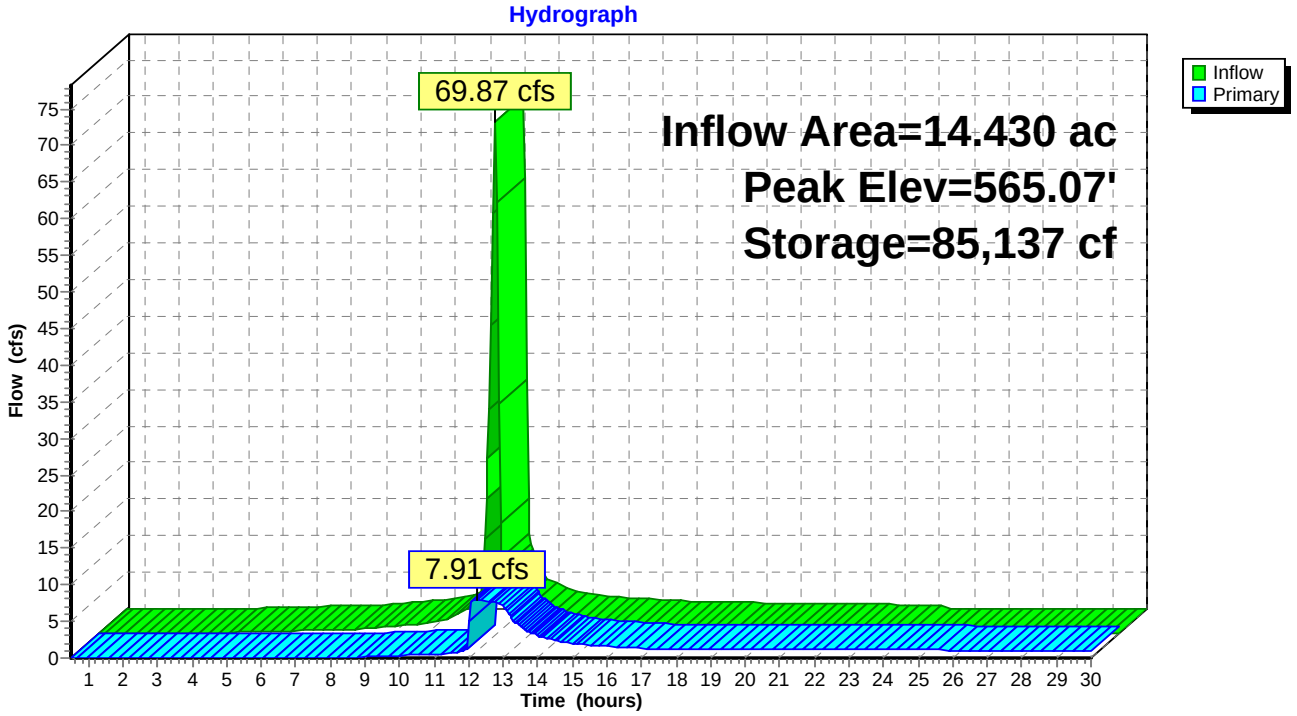
Volume	Invert	Avail.Storage	Storage Description
#1	562.40'	164,163 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
562.40	26,630	0	0
567.00	44,745	164,163	164,163

Device	Routing	Invert	Outlet Devices
#1	Primary	562.40'	**15.0" Round Culvert** L= 30.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 562.40' / 562.40' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	564.50'	**24.0" x 24.0" Horiz. Top of Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	562.40'	**6.0" Vert. low flow orifice** C= 0.600
#4	Primary	566.20'	**20.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=7.91 cfs @ 12.27 hrs HW=565.07' (Free Discharge)
- **1=Culvert** (Barrel Controls 7.91 cfs @ 6.45 fps)
  - **2=Top of Grate** (Passes < 11.25 cfs potential flow)
  - **3=low flow orifice** (Passes < 1.47 cfs potential flow)
- **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: (new Pond)



Time span=0.50-30.00 hrs, dt=0.05 hrs, 591 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment D-1: Developed Drainage Runoff Area=14.430 ac 80.25% Impervious Runoff Depth=4.21"
Flow Length=477' Slope=0.0220 '/' Tc=5.0 min CN=94 Runoff=97.92 cfs 5.062 af

Subcatchment D-2: Developed Drainage Runoff Area=2.110 ac 87.68% Impervious Runoff Depth=4.43"
Flow Length=355' Tc=5.0 min CN=96 Runoff=14.65 cfs 0.779 af

Subcatchment D-3: Developed Drainage Runoff Area=1.570 ac 73.89% Impervious Runoff Depth=4.10"
Flow Length=214' Tc=5.0 min CN=93 Runoff=10.51 cfs 0.536 af

Pond 1P: (new Pond) Peak Elev=566.01' Storage=121,988 cf Inflow=97.92 cfs 5.062 af
Outflow=10.21 cfs 4.256 af

Total Runoff Area = 18.110 ac Runoff Volume = 6.378 af Average Runoff Depth = 4.23"
19.44% Pervious = 3.520 ac 80.56% Impervious = 14.590 ac

Summary for Subcatchment D-1: Developed Drainage

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

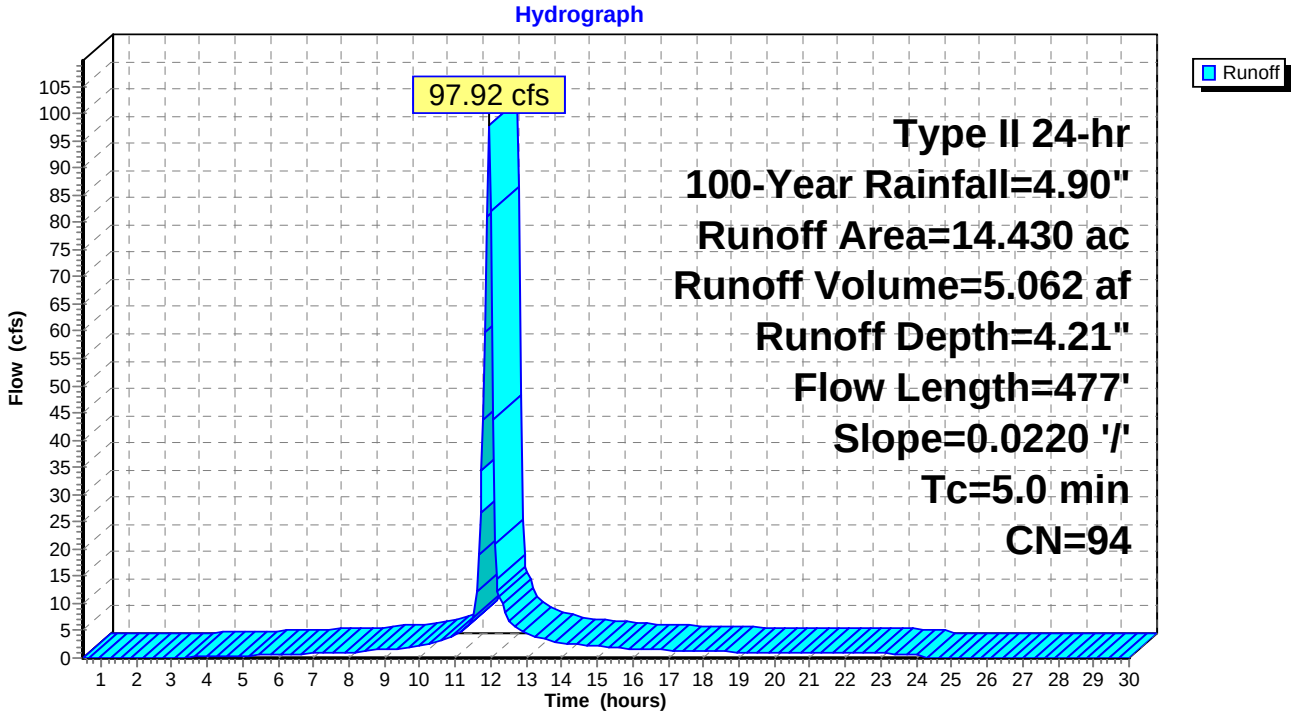
Runoff = 97.92 cfs @ 11.95 hrs, Volume= 5.062 af, Depth= 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=4.90"

Area (ac)	CN	Description
11.580	98	Paved parking, HSG C
0.240	73	Woods, Fair, HSG C
0.320	79	Woods, Fair, HSG D
1.400	74	>75% Grass cover, Good, HSG C
0.890	80	>75% Grass cover, Good, HSG D
14.430	94	Weighted Average
2.850		19.75% Pervious Area
11.580		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0220	1.26		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
2.1	377	0.0220	3.01		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
3.4	477	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-1: Developed Drainage



Summary for Subcatchment D-2: Developed Drainage

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

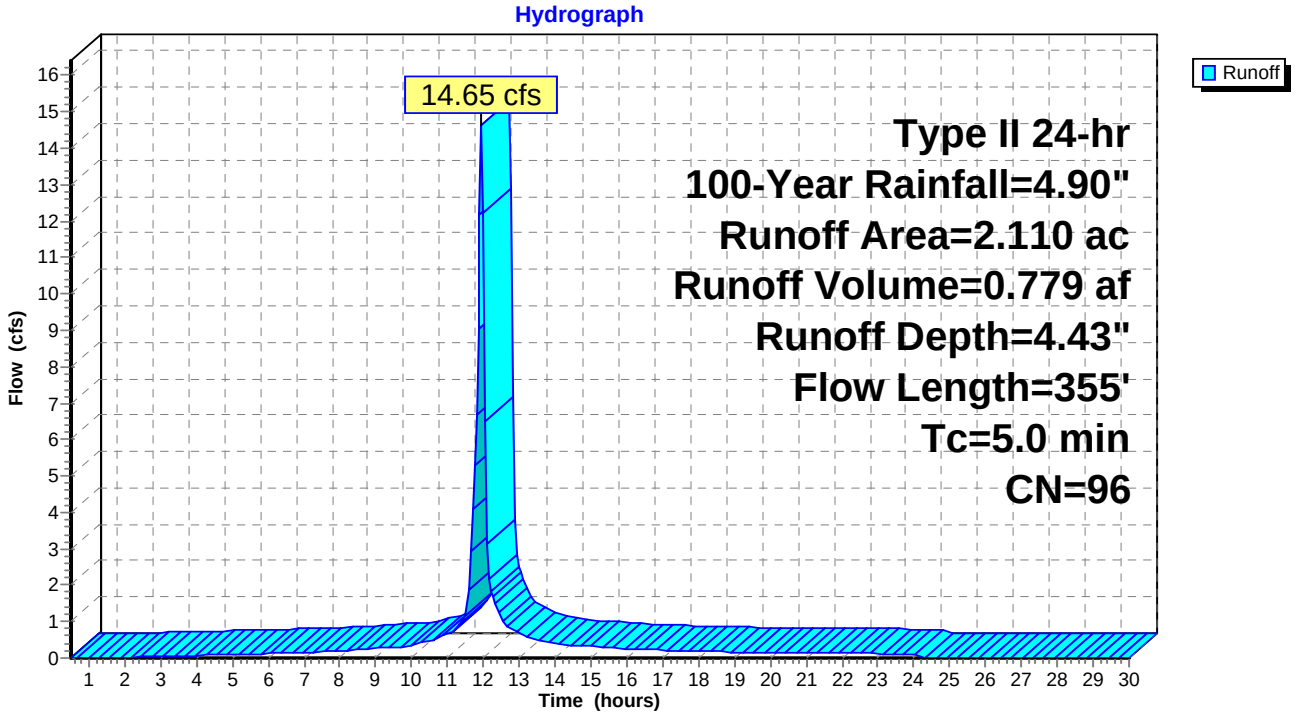
Runoff = 14.65 cfs @ 11.95 hrs, Volume= 0.779 af, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=4.90"

Area (ac)	CN	Description
0.528	98	Paved parking, HSG D
1.322	98	Paved parking, HSG C
0.260	84	50-75% Grass cover, Fair, HSG D
2.110	96	Weighted Average
0.260		12.32% Pervious Area
1.850		87.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0250	1.33		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 2.50"
0.4	73	0.0250	3.21		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.7	182	0.0660	4.14		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
2.4	355	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-2: Developed Drainage



Summary for Subcatchment D-3: Developed Drainage

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

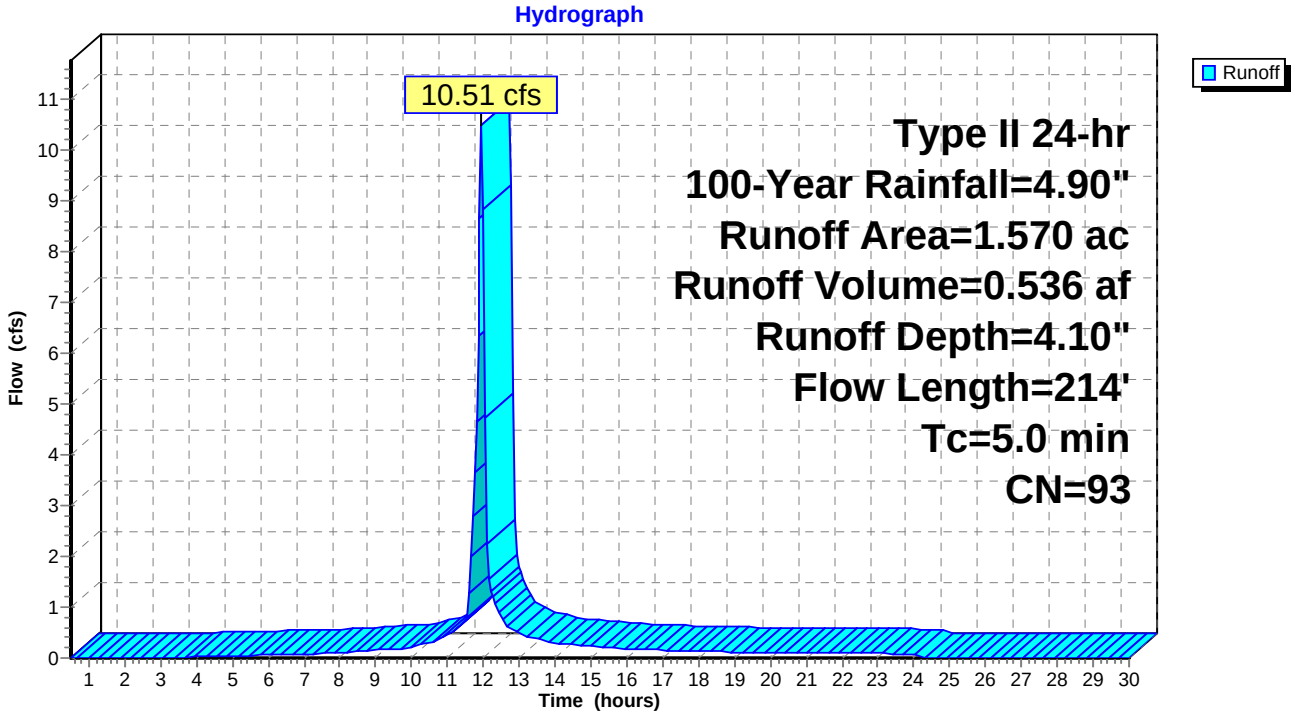
Runoff = 10.51 cfs @ 11.95 hrs, Volume= 0.536 af, Depth= 4.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=4.90"

Area (ac)	CN	Description
0.860	98	Paved parking, HSG D
0.271	80	>75% Grass cover, Good, HSG D
0.139	74	>75% Grass cover, Good, HSG C
0.300	98	Paved parking, HSG C
1.570	93	Weighted Average
0.410		26.11% Pervious Area
1.160		73.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	20	0.1500	0.17		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.50"
1.0	80	0.0250	1.27		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 2.50"
0.4	73	0.0250	3.21		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.3	41	0.0250	2.55		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
3.7	214	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D-3: Developed Drainage



Summary for Pond 1P: (new Pond)

Inflow Area = 14.430 ac, 80.25% Impervious, Inflow Depth = 4.21" for 100-Year event
Inflow = 97.92 cfs @ 11.95 hrs, Volume= 5.062 af
Outflow = 10.21 cfs @ 12.31 hrs, Volume= 4.256 af, Atten= 90%, Lag= 21.8 min
Primary = 10.21 cfs @ 12.31 hrs, Volume= 4.256 af

Routing by Stor-Ind method, Time Span= 0.50-30.00 hrs, dt= 0.05 hrs
Peak Elev= 566.01' @ 12.31 hrs Surf.Area= 40,865 sf Storage= 121,988 cf

Plug-Flow detention time= 284.9 min calculated for 4.249 af (84% of inflow)
Center-of-Mass det. time= 215.7 min (985.3 - 769.6)

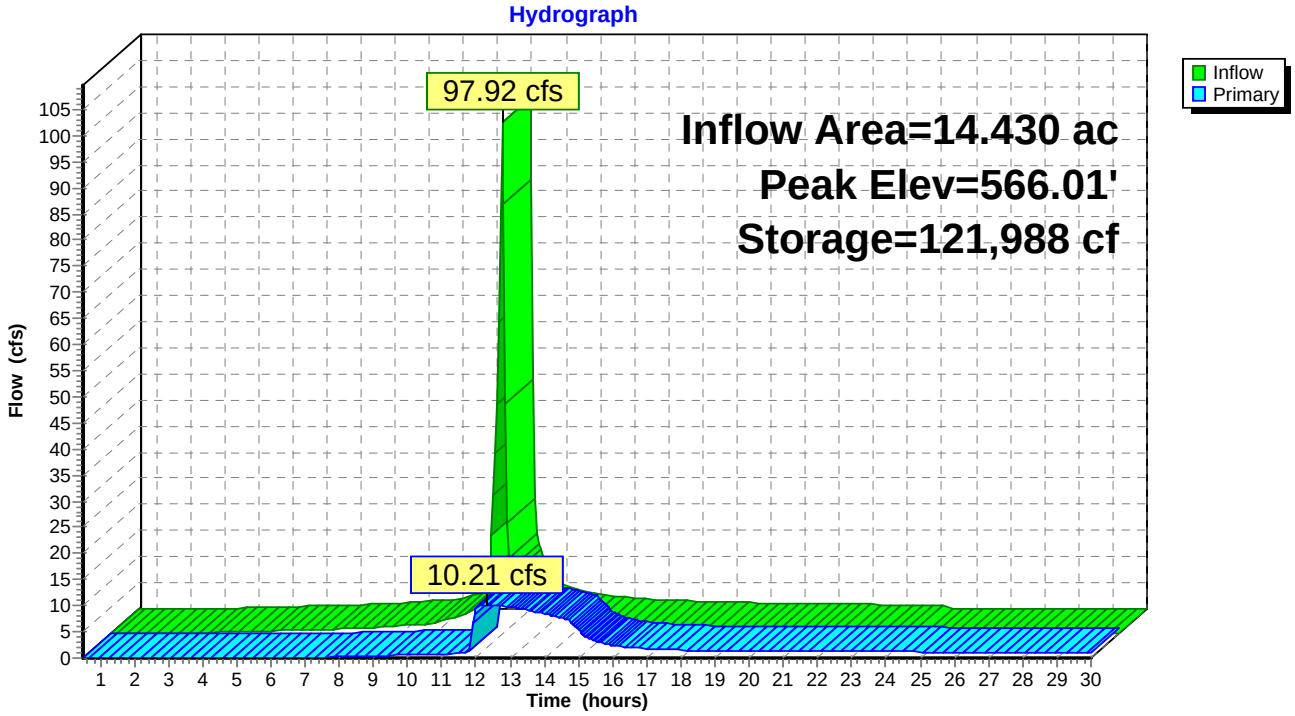
Volume	Invert	Avail.Storage	Storage Description
#1	562.40'	164,163 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
562.40	26,630	0	0
567.00	44,745	164,163	164,163

Device	Routing	Invert	Outlet Devices
#1	Primary	562.40'	**15.0" Round Culvert** L= 30.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 562.40' / 562.40' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	564.50'	**24.0" x 24.0" Horiz. Top of Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	562.40'	**6.0" Vert. low flow orifice** C= 0.600
#4	Primary	566.20'	**20.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=10.21 cfs @ 12.31 hrs HW=566.01' (Free Discharge)
- **1=Culvert** (Barrel Controls 10.21 cfs @ 8.32 fps)
  - **2=Top of Grate** (Passes < 23.70 cfs potential flow)
  - **3=low flow orifice** (Passes < 1.73 cfs potential flow)
- **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: (new Pond)



PROJECT NAME: *Wilkins R.V.* **PROJECT NUMBER:** *6028*

CALCULATED BY: *MOR* **CHK'D BY:** *GW* **DATE:** 3/12/2015

REVISED: 7/9/2015

Notes: Developed Conditions (14.43 acres)

Soil Types: Ontario Series (Type C)

Hilton Series (Type D)

Water Quality Volume:

$WQ_v: \frac{[(P)(R_v)(A)]}{12}$

$WQ_v: \frac{9.334}{12}$

A= 14.43 acres

P= 0.85

I = 79 percent of impervious surface (expressed as a percentage)

R_v^* = 0.761

* R_v = 0.05 + 0.009(I)

WQ_v req'd: 0.778 ac-ft

33882.59 ft^3

Elevation	Area (ft^2)	Depth (ft)	Volume (ft^3)	Σ Volume
558	5249	0	0	0
560.5	12306	2.5	21943.75	21943.75
562.4	26630	1.9	36989.2	58932.95

WQ_v provided: 58932.95 ft^3

1.353 ac-ft

Channel Protection Volume:

$CP_v: \frac{(V_r)(V_s/V_r)(A)]}{12}$

$CP_v: \frac{14.935}{12}$

I_a= 0.128 (I_a=200/CN-2) CN= 94

P= 0.85

V_r= 1.580 (1-yr cumulative runoff in inches)

I_a/P= 0.150

q_u= 980 (Exhibit 4-II in TR-55 manual)

q_o/q_i= 0.02 (Fig. B-1 from NYSSMDM)

V_s/V_r= $0.683-1.43(qo/qi)+1.64(qo/qi)^2-0.804(qo/qi)^3$

V_s/V_r= 0.655

CP_v req'd: 1.245 ac-ft

54213.10 ft^3

Elevation	Area (ft^2)	Depth (ft)	Volume (ft^3)	Σ Volume
562.4	26630	0	0	0
564.5	34707	2.1	64403.9	64403.9

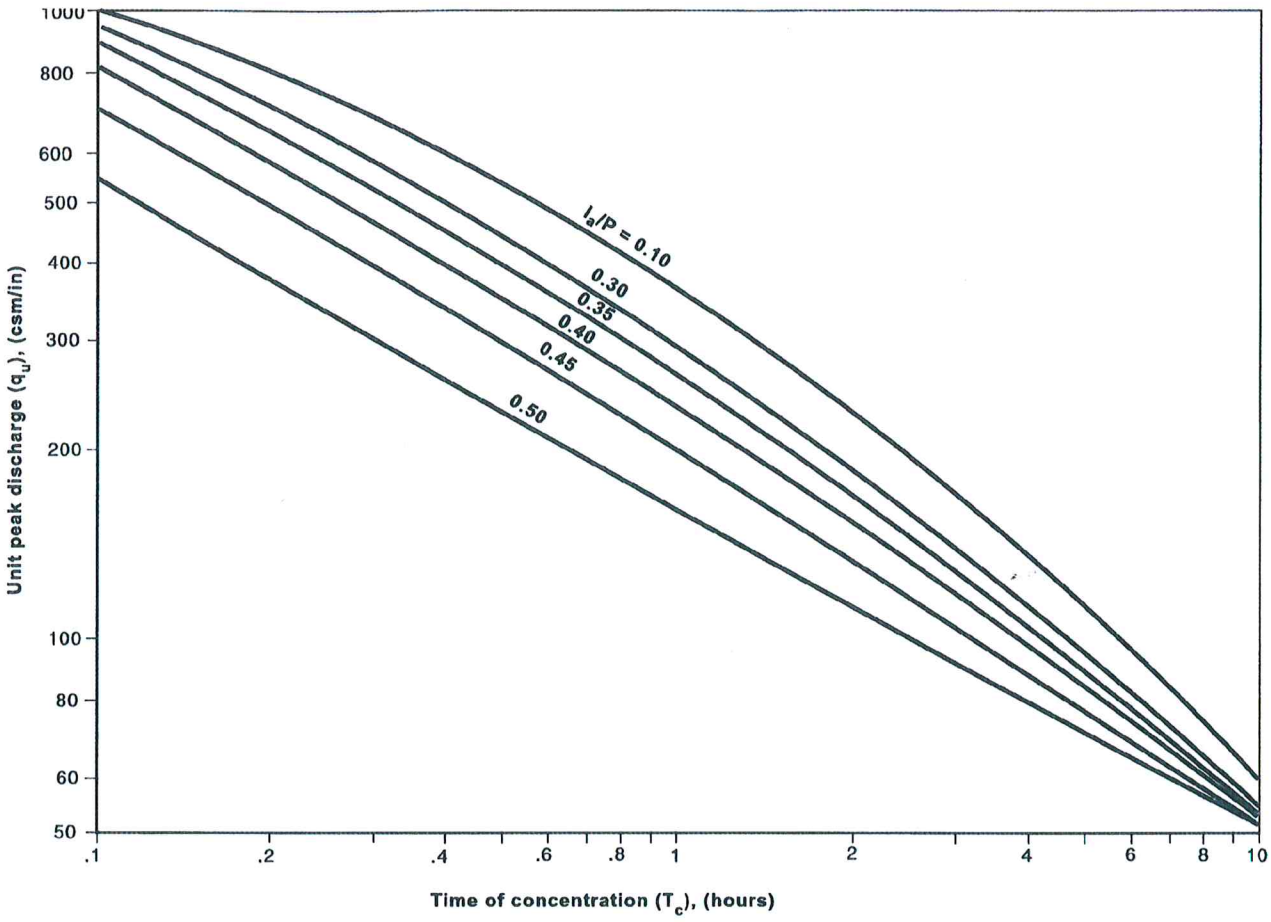
CP_v provided: 64403.9 ft^3

1.479 ac-ft

WILKINS R.V.

GE#6028

Exhibit 4-II Unit peal discharge (q_u) for NRCS (SCS) type II rainfall distribution



$T_c = 3.4$ MINUTES

$Ia/P = 0.15$

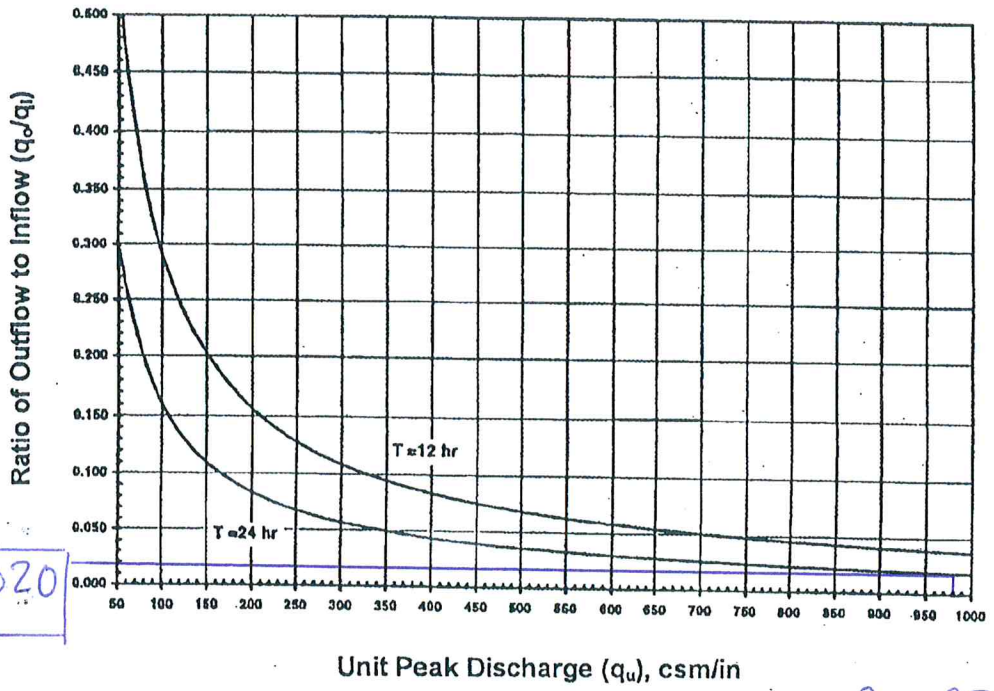
$qu = 980$ csm/in

WILKINS R.V.

E#6028

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

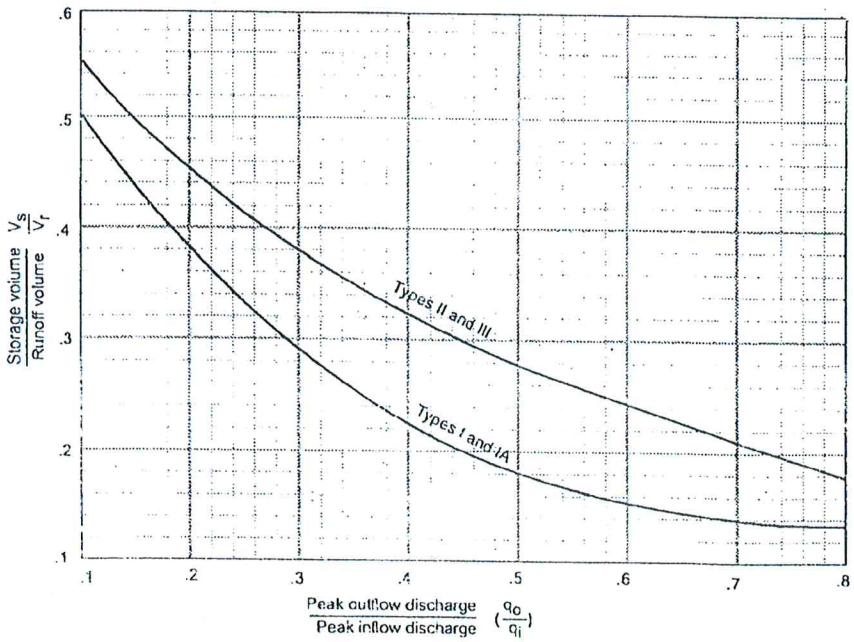
Figure B.1 Detention Time vs. Discharge Ratios (Source: MDE, 2000)



$q_o/q_i = 0.020$

$q_u = 980$ csm/in
$T = 24$ hours

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



STORMWATER MANAGEMENT
PLANNING AND PRACTICE SELECTION WORKSHEET

PROJECT: Wilkins R.V. **DATE:** 3/11/2015

Watershed Drainage Area		Impervious Area (Acres)		
DA:	14.43	**AI:**	11.44	**90% Rain: (P)=** 0.85

PLANNING

1. Plan to preserve, avoid and minimize (underline all concepts utilized):

***** Preserve undisturbed, natural buffer, and critical environment areas

***** Employ open space, conservation, and clustering site design techniques

***** Avoid developing in environmentally sensitive areas: floodplain, steep slopes, habitat, ecosystems, bedrock, wetlands, shorelines, shallow groundwater, impervious soils, unstable soils

WATER QUALITY VOLUME (before runoff reduction)

2. Calculate water quality volume (WQv): WQv = (P * A * Rv)/12

Watershed DA (acres)=	14.43
Impervious area (AI) =	11.44
Rv=	0.764

Original WQv (Ac-Ft)= 0.78

3. Minimum RRv requirements (when 100% WQv reduction cannot be achieved)

RRv = (P) * (.95) * (S) * (AI) / 12

With S = **0.55** for A soils; **0.40** for B soils; **0.30** for C soils; **0.20** for D soils OR Weighted HSG average in DA

S = 0.25

Minimum required RRv (Ac-Ft) = 0.19

AREA REDUCTION PRACTICES

4. **Incorporate area reduction practices (*complete for all applicable practices):***

* Conservation of natural areas (min. 10,000 sq. ft.):	Contributing AI (acres) =		Area (Ac.) =	
* Riparian buffers/filter strips (max length: 150ft):	Contributing AI (acres) =		Area (Ac.) =	
* Tree Planting/tree preservation (Max 100 s.f./tree):	Contributing AI (acres) =		Area (Ac.) =	

Total Area Reduction	0
Total Impervious Area Reduction	0

5. Subtract total area reduction from DA:

Remaining drainage area: (#2 area - #4 area)	14.43
Remaining impervious area: (#2 AI - #4 AI)	11.44

6. Incorporate impervious area disconnection:

Total disconnected impervious area (now considered pervious for RV calcs.) Area (Ac.) = 0

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STORMWATER MANAGEMENT
PLANNING AND PRACTICE SELECTION WORKSHEET

7. Recalculate WQv for site area remaining after area reductions and impervious disconnections:

Remaining DA (acres) =	14.43	Remaining AI (acres)=	11.44	Rv=	0.764

Reduced WQv (Ac-ft)……	0.78
Runoff Reduction Volume (Ac-ft)……	0.00

SOURCE CONTROL WQv TREATMENT PRACTICES

(From attached worksheet)

8a. Subtotal DA tributary to Source Control treatment practices (Acres)……	7.8
8b. Subtotal AI tributary to Source Control treatment practices (Acres)……	7.8
8c. Subtotal Source Control WQv Treatment Volume (Ac-Ft)……	0.524
8d. Subtotal Runoff Reduction Volume (RRv) (Ac-Ft)……	0.209

TOTAL RUNOFF REDUCTION VOLUME (RRv)

9. Total RRv provided (Ac-Ft)……	0.21

10. Is RRv ≥ original WQv ? **Yes:**_____ **No:**__X__ If Yes, skip to #12

11. Is RRv ≥ minimum RRv? **Yes:**__X__ **No:**_____

12. Total drainage area treated with runoff reduction/source control practices (Acres)	7.80

(Area reduction (from #4) + total DA tributary to source control (#8a.)

STANDARD WQv TREATMENT

13. Provide treatment for any remaining untreated watershed DA with standard practices:

Remaining untreated DA = (Watershed DA(#2)) - (Treated DA(#12))(Acres)……	6.63
Remaining impervious area = Total AI (#2)) - Treated AI (#4 + #6 + #8)……	3.64
Rv for Standard Practice……	0.544
WQv required in a Standard Practice (Ac-Ft)	0.26

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WILKINS R.V. AREA 1 (NORTH)

11. **SOURCE CONTROL WQv TREATMENT PRACTICES WORKSHEET** - (*complete for all applicable practices and soil types*).

Standard Practices (used as source control)	**Allowable Runoff Reduction Volume (RRv)**
• Infiltration (A soils only) (maximum 1-20 acre DA) DA tributary to practice:_____ acre(s) AI = _____ acre(s) RV = _____ WQv = _____ (ac-ft)	90% of WQv = _____ac-ft (A soils only)
• Bioretention DA tributary to practice: 5.00 acre(s) AI = 5.00 acre(s) RV = 0.95 WQv = 0.336 (ac-ft)	80% of WQv = _____ac-ft (A/B soils only) **OR** 40% of WQv = 0.134 ac-ft (C/D soils)
• Dry Swale (maximum 5-acre DA) DA tributary to practice:_____ acre(s) AI = _____ acre(s) RV = _____ WQv = _____ (ac-ft)	40% of WQv = _____ac-ft (A/B soils only) **OR** 20% of WQv = _____ac-ft (C/D soils)

Green Infrastructure Practices

• Vegetated open swale (maximum 5-acre DA) DA tributary to practice:_____ acre(s) AI = _____ acre(s) RV = _____ WQv = _____ (ac-ft)	20% of WQv = _____ac-ft (A/B soils only) **OR** 10% of WQv = _____ac-ft (C/D soils)
• Green roof Roof area = _____ acre(s) Rv = .95 WQv = _____ (ac-ft)	100% of WQv = _____ac-ft
• Rain Garden (maximum 1,000 square foot roof) Roof area = _____ acre(s) Rv = .95 WQv = _____ (ac-ft)	100% of WQv = _____ ac-ft
• Stormwater planters (maximum 15,000-s.f. DA) DA tributary to practice:_____ acre(s) AI = _____ acre(s) RV = _____ WQv = _____ (ac-ft)	100% of WQv = _____ ac-ft
• Cisterns/rain barrels Roof area = _____ acre(s) Rv = .95 WQv = _____ (ac-ft)	100% of WQv = _____ ac-ft
• Porous pavement (A/B soils only) DA tributary to practice:_____ acre(s) AI = _____ acre(s) RV = _____ WQv = _____ (ac-ft)	100% of WQv = _____ ac-ft (A/B soils only)
11a. Subtotal DA tributary to Source Control WQv Treatment practices = _____(acres) **11b. Subtotal Source Control WQv Treatment Volume** = _____(ac-ft) **11c. Subtotal Runoff Reduction Volume (RRv):**	**Sub total (Rv) RRv** = 0.134 (ac-ft)

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(585) 458-3020
Fax (585) 458-2731

JOB WILKINS R.V. CE# 6028
SHEET NO. 1 OF 1
CALCULATED BY M.O.R. DATE 3/12/2015
REV. BY ~~CHECKED BY~~ m.o.r. DATE 7/10/2015
SCALE NO SCALE

DETERMINE SIZE OF BIORETENTION FILTER AREA (NORTH AREA)

- PER NYS SWDM: $A_f = (WQ_v)(d_f) \div [(K)(h_f + d_f)(t_f)]$

WHERE:

A_f = REQUIRED SURFACE AREA OF FILTER BED (FT^2)

WQ_v = REQUIRED WATER QUALITY TREATMENT VOLUME PER SOURCE CONTROL WQ_v TREATMENT PRACTICES WORKSHEET

= 0.336 AC-FT = 14,636 FT^3

d_f = FILTER BED DEPTH (FT.) = 3 FT.

K = COEFF. OF PERMEABILITY OF FILTER MEDIA = 0.5 FT/DAY

h_f = AVG. HEIGHT OF WATER ABOVE FILTER BED = 0.5 FT.

t_f = FILTER BED DRAIN TIME = 2 DAYS

$A_f = (14{,}636\ FT^3)(3\ FT.) \div [(0.5\ FT/DAY)(0.5\ FT + 3\ FT)(2\ DAYS)]$

= 12,545 ft^2 ← REQUIRED AREA

AREA OF PROPOSED BIORETENTION FILTER = 12,606 FT^2

PROVIDED > REQUIRED ∴ OK

WILKINS R.V. AREA - 1 (SOUTH)

11. **SOURCE CONTROL WQv TREATMENT PRACTICES WORKSHEET** - (*complete for all applicable practices and soil types*).

Standard Practices (used as source control)	**Allowable Runoff Reduction Volume (RRv)**
• Infiltration (A soils only) (maximum 1-20 acre DA) DA tributary to practice:_____ acre(s) AI = _____ acre(s) RV = _____ WQv = _____ (ac-ft)	90% of WQv = _____ac-ft (A soils only)
• Bioretention DA tributary to practice: 2.80 acre(s) AI = 2.80 acre(s) RV = 0.95 WQv = 0.188 (ac-ft)	80% of WQv = _____ac-ft (A/B soils only) **OR** 40% of WQv = 0.075 ac-ft (C/D soils)
• Dry Swale (maximum 5-acre DA) DA tributary to practice:_____ acre(s) AI = _____ acre(s) RV = _____ WQv = _____ (ac-ft)	40% of WQv = _____ac-ft (A/B soils only) **OR** 20% of WQv = _____ac-ft (C/D soils)

Green Infrastructure Practices

• Vegetated open swale (maximum 5-acre DA) DA tributary to practice:_____ acre(s) AI = _____ acre(s) RV = _____ WQv = _____ (ac-ft)	20% of WQv = _____ac-ft (A/B soils only) **OR** 10% of WQv = _____ac-ft (C/D soils)
• Green roof Roof area = _____ acre(s) Rv = .95 WQv = _____ (ac-ft)	100% of WQv = _____ac-ft
• Rain Garden (maximum 1,000 square foot roof) Roof area = _____ acre(s) Rv = .95 WQv = _____ (ac-ft)	100% of WQv = _____ ac-ft
• Stormwater planters (maximum 15,000-s.f. DA) DA tributary to practice:_____ acre(s) AI = _____ acre(s) RV = _____ WQv = _____ (ac-ft)	100% of WQv = _____ ac-ft
• Cisterns/rain barrels Roof area = _____ acre(s) Rv = .95 WQv = _____ (ac-ft)	100% of WQv = _____ ac-ft
• Porous pavement (A/B soils only) DA tributary to practice:_____ acre(s) AI = _____ acre(s) RV = _____ WQv = _____ (ac-ft)	100% of WQv = _____ ac-ft (A/B soils only)
11a. Subtotal DA tributary to Source Control WQv Treatment practices = _____(acres) **11b. Subtotal Source Control WQv Treatment Volume** = _____(ac-ft) **11c. Subtotal Runoff Reduction Volume (RRv):**	**Sub total (Rv) RRv** = 0.075 (ac-ft)

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(585) 458-3020
Fax (585) 458-2731

JOB WILKINS R.V. CE# 6028
SHEET NO. 1 OF 1
CALCULATED BY M.O.R. DATE 3/12/2015
~~CHECKED BY~~ REV. BY M.O.R. DATE 7/10/2015
SCALE NO SCALE

DETERMINE SIZE OF BIORETENTION FILTER AREA (SOUTH AREA)

- PER NYS SWDM: $A_f = (WQ_v)(d_f) \div [(K)(h_f + d_f)(t_f)]$

WHERE:

A_f = REQUIRED SURFACE AREA OF FILTER BED (FT^2)

WQ_v = REQUIRED WATER QUALITY TREATMENT VOLUME PER SOURCE CONTROL WQ_v TREATMENT PRACTICES WORKSHEET

= 0.188 AC-FT = 8,189 FT^3

d_f = FILTER BED DEPTH (FT.) = 3 FT.

K = COEFF. OF PERMEABILITY OF FILTER MEDIA = 0.5FT/DAY

h_f = AVG. HEIGHT OF WATER ABOVE FILTER BED = 0.5 FT.

t_f = FILTER BED DRAIN TIME = 2DAYS

$A_f = (8{,}189\ FT^3)(3\ FT.) \div [(0.5\ FT/DAY)(0.5\ FT + 3\ FT)(2\ DAYS)]$

= 7,019 FT^2 ← REQUIRED AREA

AREA OF PROPOSED BIORETENTION FILTER = 7,329 FT^2

PROVIDED > REQUIRED ∴ OK

APPENDIX III

0644089821

NOTICE OF INTENT

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

NYR _____
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002

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

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
BLW PROPERTIES OF CHURCHVILLE, LLC

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

Owner/Operator Contact Person First Name
BRIAN

Owner/Operator Mailing Address
111 AND 97 SOUTH MAIN STREET

City
CHURCHVILLE

State
NY

Zip
14428 -

Phone (Owner/Operator)
6077725728

Fax (Owner/Operator)
- -

Email (Owner/Operator)
BWILKINS@WILKINSRV.COM

FED TAX ID
- (not required for individuals)

Project Site Information

Project/Site Name
WILKINS R.V.

Street Address (NOT P.O. BOX)
111 AND 97 SOUTH MAIN STREET

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

City/Town/Village (THAT ISSUES BUILDING PERMIT)
VILLAGE OF CHURCHVILLE

State: NY
Zip: 14428-
County: MONROE
DEC Region: 8

Name of Nearest Cross Street
SANFORD ROAD NORTH

Distance to Nearest Cross Street (Feet)
0

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

Tax Map Numbers
Section-Block-Parcel
143.17-01-50

Tax Map Numbers
143.17-01-50

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

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

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

X Coordinates (Easting): 265155

Y Coordinates (Northing): 4777551199

2. What is the nature of this construction project?

● **New Construction**

○ **Redevelopment with increase in impervious area**

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

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

Pre-Development Existing Land Use

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

Post-Development Future Land Use

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

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

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

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
16.136.3	17.167.6	5.1 5.1	14.164.6

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

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

A	B	C	D
0 %	0 %	50 %	50 %

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

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

Start Date 05/01/2015 - **End Date** 10/31/2015

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

Name

UNNAMED TRIBUTARY TO BLACK CREEK

9a. Type of waterbody identified in Question 9?

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

9b. How was the wetland identified?

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

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

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

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

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

.

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

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

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

VILLAGE OF CHURCHVILLE

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

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

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

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

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

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

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

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

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

SWPPP Preparer
COSTICH ENGINEERING, D.P.C.

Contact Name (Last, Space, First)
WINTERKORN, GARTH

Mailing Address
217 LAKE AVENUE

City
ROCHESTER

State NY Zip 14608-

Phone 585-458-3020

Fax 585-458-2731

Email
GWINTERKORN@COSTICH.COM

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-15-002. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name
GARTH

MI

Last Name
WINTERKORN

Signature
Garth Winterkorn

Date
03/12/2015

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

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

Temporary Structural

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

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

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

Permanent Structural

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

Other

Post-construction Stormwater Management Practice (SMP) Requirements

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

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

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

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

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

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

Total WQv Required

0.707878 **acre-feet**

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

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

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

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

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)		and/or	
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or	
○ Tree Planting/Tree Pit (RR-3)		and/or	
○ Disconnection of Rooftop Runoff (RR-4)		and/or	
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			
○ Rain Garden (RR-6)			
○ Stormwater Planter (RR-7)			
○ Rain Barrel/Cistern (RR-8)			
○ Porous Pavement (RR-9)			
○ Green Roof (RR-10)			
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			
○ Infiltration Basin (I-2)			
○ Dry Well (I-3)			
○ Underground Infiltration System (I-4)			
● Bioretention (F-5)	7.87		7.87
○ Dry Swale (O-1)			
Standard SMPs			
○ Micropool Extended Detention (P-1)			
● Wet Pond (P-2)	14.44		14.44
○ Wet Extended Detention (P-3)			
○ Multiple Pond System (P-4)			
○ Pocket Pond (P-5)			
○ Surface Sand Filter (F-1)			
○ Underground Sand Filter (F-2)			
○ Perimeter Sand Filter (F-3)			
○ Organic Filter (F-4)			
○ Shallow Wetland (W-1)			
○ Extended Detention Wetland (W-2)			
○ Pond/Wetland System (W-3)			
○ Pocket Wetland (W-4)			
○ Wet Swale (O-2)			

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

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

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

Name

Manufacturer

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

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

Total RRv provided

0.201210 **acre-feet**

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

○ **Yes** ● **No**

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

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

Minimum RRv Required

0.109190 **acre-feet**

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

● **Yes** ○ **No**

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

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

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

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

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

WQv Provided

1.315353 **acre-feet**

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

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

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

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

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

CPv Required

1.214545 **acre-feet**

CPv Provided

1.417979 **acre-feet**

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

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

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

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

<u>Total Overbank Flood Control Criteria (Qp)</u>

Pre-Development

43.2200 **CFS**

Post-development

25.9500 **CFS**

<u>Total Extreme Flood Control Criteria (Qf)</u>

Pre-Development

67.4900 **CFS**

Post-development

35.3700 **CFS**

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

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

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

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

BLW PROPERTIES OF CHURCHVILLE, LLC

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

100% of the required WQv has been provided for the site using both Runoff Reduction techniques (Bio-retention) and Standard Management Practices (Wet Pond). The Minimum Runoff Reduction volume has been provided for the site. 100% of the WQv could not be provided using Runoff Reduction techniques because the site soils are listed as 'C' and 'D' soils, and the Stormwater Design Manual does not allow infiltration on 'C' and 'D' soils.

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

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

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

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

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

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

Owner/Operator Certification

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

Print First Name: BRIAN

MI:

Print Last Name: WILKINS

Owner/Operator Signature:

Date: / /

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

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

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

I. Project Owner/Operator Information
1. Owner/Operator Name: BLW PROPERTIES OF CHURCHVILLE, LLC
2. Contact Person: BRIAN WILKINS
3. Street Address: 111 AND 97 SOUTH MAIN STREET
4. City/State/Zip: CHURCHVILLE/NY/14428
II. Project Site Information
5. Project/Site Name: WILKINS R.V.
6. Street Address: 111 AND 97 SOUTH MAIN STREET
7. City/State/Zip: CJURCHVILLE/NY/14428
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by:
9. Title/Position:
10. Date Final SWPPP Reviewed and Accepted:
IV. Regulated MS4 Information
11. Name of MS4:
12. MS4 SPDES Permit Identification Number: NYR20A _____
13. Contact Person:
14. Street Address:
15. City/State/Zip:
16. Telephone Number:

MS4 SWPPP Acceptance Form - continued

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

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

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

Stormwater Construction Site Inspection Report

General Information			
Project Name	**Wilkins R.V.**		
SPDES Tracking No.		**Location**	**111 South Main Street**
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Describe present phase of construction			
Type of Inspection: ❑Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? ❑Yes ❑ No If yes, provide: Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):			
Weather at time of this inspection? ❑ Clear ❑ Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds ❑ Other: Temperature:			
Have any discharges occurred since the last inspection? ❑ Yes ❑ No **If yes, describe:**			
Are there any discharges at the time of inspection? ❑Yes ❑ No **If yes, describe:**			

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1	Silt Fence	❑ Yes ❑No	❑ Yes ❑No	
2	Stabilized Construction Entrance	❑ Yes ❑No	❑ Yes ❑ No	
3	Inlet protection	❑Yes ❑ No	❑Yes ❑ No	
4	Stabilization	❑ Yes ❑No	❑Yes ❑ No	
5	Stormwater Management Facility	❑ Yes ❑No	❑ Yes ❑ No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑ No	❑ Yes ❑ No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑ Yes ❑ No	❑ Yes ❑ No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑ No	❑ Yes ❑No	
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑ No	❑ Yes ❑No	
5	Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
6	Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑ No	❑ Yes ❑No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑ No	❑ Yes ❑No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑ No	❑ Yes ❑No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑ No	❑ Yes ❑No	
10	Are materials that are potential stormwater contaminants stored inside or under cover	❑Yes ❑ No	❑ Yes ❑No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No	❑Yes ❑No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
12	Temporary basin	❑Yes ❑No	❑Yes ❑ No	❑ Yes ❑No

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"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 there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title:

Signature:_____ Date:_____

5.1.6 Soil Restoration

Description

Soil Restoration is a required practice applied across areas of a development site where soils have been disturbed and will be vegetated in order to recover the original properties and porosity of the soil. Healthy soil is vital to a sustainable environment and landscape. A deep, well drained soil, rich in organic matter, absorbs rainwater, helps prevent flooding and soil erosion, filters out water pollutants, and promotes vigorous plant growth that requires less irrigation, pesticides, and fertilizer.

Soil Restoration is applied in the cleanup, restoration, and landscaping phase of construction followed by the permanent establishment of an appropriate, deep-rooted groundcover to help maintain the restored soil structure. Soil restoration includes mechanical decompaction, compost amendment, or both.

Many runoff reduction practices need Soil Restoration measures applied over and adjacent to the practice to achieve runoff reduction performance. (See typical compacted soil in Figure 5.15). Consult individual profile sheets for specific design criteria.

Figure 5.14 Shows typical compacted soils that nearly reach the bulk density of concrete (Schueler et al 2000)

Key Benefits

- More marketable buildings and landscapes
- Less stormwater runoff, better water quality
- Healthier, aesthetically pleasing landscapes
- Increased porosity on redevelopment sites where impervious cover is converted to pervious
- Achieves performance standards on runoff reduction practices
- Decreases runoff volume generated and lowers the demand on runoff control structures
- Enhances direct groundwater recharge
- Promotes successful long-term revegetation by restoring soil organic matter, permeability, drainage and water holding capacity for healthy root system development of trees, shrubs and deep-rooted ground covers, minimizing lawn chemical requirements, plant drowning during wet periods, and burnout during dry periods

Typical Perceived Obstacles and Realities

- Higher cost due to soil restoration- *application of soil de-compaction and enhancement may have additional initial cost; however, they provide benefit in reducing the need for conveyance structures.*

- Space constraints and obstruction for use of equipment - *post construction space may limit the ability of some of the de-compaction equipment, however, alternative equipment and sensible planning help overcome this obstacle.*

Discussion

Tilling exposes compacted soil devoid of oxygen to air and recreates temporary air space. In addition, research has shown that the incorporation of organic compost, can greatly improve temporary water storage in the soil and subsequent runoff reduction through infiltration and evapotranspiration.

Soils that have a permanent high water table close to the surface (0-12 inches), either influenced by a clay or other highly impervious layer of material, may have bulk densities so naturally high that compaction has little added impact on infiltration (Lacey 2008). However, these soils will still benefit from the addition of compost. The water holding capacity, penetration, structural stability, and fertility of clay soils were improved with compost mixing (Avnimelech and Cohen 1988).

Table 5.3 describes various soil disturbance activities related to land development, soil types and the requirements for soil restoration for each activity. Soil Restoration or modification of curve numbers is a required practice. Restoration is applied across areas of a development site where soils have been compacted and will be vegetated according to the criteria defined in Table 5.3. If Soil Restoration is not applied according to these criteria, designers are required to:

a) Increase the calculated WQv by factoring in the compacted areas that have not been kept as impervious cover (including areas of cut or fill, heavy traffic areas on site, or Impervious Cover reduction in redevelopment projects unless aeration or full soil restoration is applied, per Table 5.3).

b) Change by one level the post-construction hydrologic soil group (HSG) to a less permeable group than the original condition. This is applied to all volumetric and discharge rate control computations.

Table 5.3 Soil Restoration Requirements			
Type of Soil Disturbance	**Soil Restoration Requirement**		**Comments/Examples**
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only - no change in grade	HSG A &B	HSG C&D	Protect area from any ongoing construction activities.
	apply 6 inches of topsoil	Aerate* and apply 6 inches of topsoil	
Areas of cut or fill	HSG A &B	HSG C & D	
	Aerate and apply 6 inches of topsoil	Apply full Soil Restoration **	
Heavy traffic areas on site (especially in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)	Apply full Soil Restoration (de-compaction and compost enhancement)		
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.		

*Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.

** Per “Deep Ripping and De-compaction, DEC 2008”.

Using this Practice

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following Soil Restoration steps applied:

1) Apply 3 inches of compost over subsoil

2) Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing, and circulating air and compost into subsoils

3) Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site

4) Apply topsoil to a depth of 6 inches

5) Vegetate as required by approved plan.

Figure 5.15 Soil aerator implement

At the end of the project an inspector should be able to push a 3/8" metal bar 12 inches into the soil just with body weight. Figures 5.16 and 5.17 show two attachments used for soil decompaction. Tilling (step 2 above) should not be performed within the drip line of any existing trees or over utility installations that are within 24 inches of the surface.

COMPOST SPECIFICATIONS

Compost shall be aged, from plant derived materials, free of viable weed seeds, have no visible free water or dust produced when handling, pass through a half inch screen and have a pH suitable to grow desired plants.

Maintenance

A simple maintenance agreement should identify where Soil Restoration is applied, where newly restored areas are/cannot be cleared, who the responsible parties are to ensure that routine vegetation improvements are made (i.e., thinning, invasive plant removal, etc.). Soil compost amendments within a filter strip or grass channel should be located in public right of way, or within a dedicated stormwater or drainage easement.

Figure 5.16 Soil aerator implement

First year maintenance operations includes:

- Initial inspections for the first six months (once after each storm greater than half- inch)

- Reseeding to repair bare or eroding areas to assure grass stabilization
- Water once every three days for first month, and then provide a half inch of water per week during first year. Irrigation plan may be adjusted according to the rain event.
- Fertilization may be needed in the fall after the first growing season to increase plant vigor
- Ongoing Maintenance:

  Two points help ensure lasting results of decompaction:

  1) Planting the appropriate ground cover with deep roots to maintain the soil structure
  2) Keeping the site free of vehicular and foot traffic or other weight loads. Consider pedestrian footpaths. (Sometimes it may be necessary to de-thatch the turf every few years)

References/Further Resources

Avnimelech, Y. and M. Kochva, Y. Yotal, D. Shkedy. 1988. *THE USE OF COMPOST AS A SOIL AMENDMENT*

Balusek. 2003. Quantifying decreases in stormwater runoff from deep-tilling, chisel-planting and *compost amendments*. Dane County Land Conservation Department. Madison, Wisconsin. http://www.countyofdane.com/lwrd/landconservation/papers/quantifyingdecreasesinswrunoff.pdf

Chollak, T. and P. Rosenfeld. 1998. Guidelines for Landscaping with Compost-Amended Soils City of Redmond Public Works. http://www.ci.redmond.wa.us/insidecityhall/publicworks/environment/pdfs/compostamendedsoils.pdf

City of Portland. 2008. Soil Specification for Vegetated Stormwater Facilities. Portland Stormwater Management Manual. Portland, Oregon

Composting Council (TCC). 1997. Development of a landscape architect specification for *compost utilization*. Alexandria, VA. http://www.cwc.org/organics/org972rpt.pdf

DRAFT VA DCR STORMWATER DESIGN SPECIFICATION No. 4, SOIL COMPOST AMENDMENT, VERSION 1.5 June 22, 2009

http://www.chesapeakestormwater.net/storage/first-draft-baywide-design-specificationsi/BAYWIDE%20No%204%20SOIL%20AMENDMENT%20SPECIFICATION.pdf

Holman-Dodds, L. 2004. Chapter 6. Assessing infiltration-based stormwater practices. PhD Dissertation. Department of Hydroscience and Engineering. University of Iowa. Iowa City, IA.

King County Department of Development & Environmental Services, *Achieving the Post-construction Soil Standard*, January 1, 2005. http://www.metrokc.gov/DDES/forms/ls-inf-SoilPost-ConStd.pdf

Lacey, John. 2008. NYSDEC Deep-Ripping and Decompaction , *Guidelines for Infiltration and Decompaction*, New York State Department of Environmental Conservation.

Lenhart, J. 2007. Compost as a soil amendment for water quality treatment facilities. Proceedings 2007 LID Conference. Wilmington, NC

Low Impact Development Center. *Guideline for Soil Amendments*. http://www.lowimpactdevelopment.org/epa03/soilamend.htm

NYS Dept. of Ag & Markets http://www.agmkt.state.ny.us/AP/agservices/constructG8.html

Roa-Espinosa. 2006. An introduction to soil compaction and the subsoiling practice. technical note. Dane County Land Conservation Department. Madison,Wisconsin.

Schueler, T. 2000. *"The Compaction of Urban Soils"* The Practice of Watershed Protection. P. 210-214. Center for Watershed Protection

SERAIEG, Southern Extension and Research Activity Information Exchange Group, Interpreting Soil Organic Matter Tests, (2005). http://www.clemson.edu/agsrvlb/sera6/SERA6-ORGANIC_doc.pdf

Soils for Salmon. 2003. Soil Restoration and compost amendments. http://www.soilsforsalmon.org/pdf/SoilsforSalmonLIDrev9-16-04.pdf

US Composting Council, www.compostingcouncil.org

STANDARD AND SPECIFICATIONS FOR STORM DRAIN INLET PROTECTION

Definition

A temporary, somewhat permeable barrier, installed around inlets in the form of a fence, berm or excavation around an opening, trapping water and thereby reducing the sediment content of sediment laden water by settling.

Purpose

To prevent heavily sediment laden water from entering a storm drain system through inlets.

Conditions Where Practice Applies

This practice shall be used where the drainage area to an inlet is disturbed, it is not possible to temporarily divert the storm drain outfall into a trapping device, and watertight blocking of inlets is not advisable. **It is not to be used in place of sediment trapping devices.** This may be used in conjunction with storm drain diversion to help prevent siltation of pipes installed with low slope angle.

Types of Storm Drain Inlet Practices

There are four (4) specific types of storm drain inlet protection practices that vary according to their function, location, drainage area, and availability of materials:

I. Excavated Drop Inlet Protection
II. Fabric Drop Inlet Protection
III. Stone & Block Drop Inlet Protection
IV. Curb Drop Inlet Protection

Design Criteria

Drainage Area – The drainage area for storm drain inlets shall not exceed one acre. The crest elevations of these practices shall provide storage and minimize bypass flow.

Type I – Excavated Drop Inlet Protection

See details for Excavated Drop Inlet Protection in Figure 5A.11 on page 5A.29.

Limit the drainage area to the inlet device to 1 acre. Excavated side slopes shall be no steeper than 2:1. The minimum depth shall be 1 foot and the maximum depth 2 feet as measured from the crest of the inlet structure. Shape the excavated basin to fit conditions with the longest dimension oriented toward the longest inflow area to provide maximum trap efficiency. The capacity of the excavated basin should be established to contain 900 cubic feet per acre of disturbed area. Weep holes, protected by fabric and stone, should be provided for draining the temporary pool.

Inspect and clean the excavated basin after every storm. Sediment should be removed when 50 percent of the storage volume is achieved This material should be incorporated into the site in a stabilized manner.

Type II – Fabric Drop Inlet Protection

See Figure 5A.12 for details on Filter Fabric Drop Inlet Protection on page 5A.30.

Limit the drainage area to 1 acre per inlet device. Land area slope immediately surrounding this device should not exceed 1 percent. The maximum height of the fabric above the inlet crest shall not exceed 1.5 feet unless reinforced.

The top of the barrier should be maintained to allow overflow to drop into the drop inlet and not bypass the inlet to unprotected lower areas. Support stakes for fabric shall be a minimum of 3 feet long, spaced a maximum 3 feet apart. They should be driven close to the inlet so any overflow drops into the inlet and not on the unprotected soil. Improved performance and sediment storage volume can be obtained by excavating the area.

Inspect the fabric barrier after each rain event and make repairs as needed. Remove sediment from the pool area as

necessary with care not to undercut or damage the filter fabric. Upon stabilization of the drainage area, remove all materials and unstable sediment and dispose of properly. Bring the adjacent area of the drop inlet to grade, smooth and compact and stabilize in the appropriate manner to the site.

If straw bales are used in lieu of filter fabric, they should be placed tight with the cut edge adhering to the ground at least 3 inches below the elevation of the drop inlet. Two anchor stakes per bale shall be driven flush to bale surface. Straw bales will be replaced every 4 months until the area is stabilized.

Type III – Stone and Block Drop Inlet Protection

See Figure 5A.13 for details on Stone and Block Drop Inlet Protection on page 5A.31.

Limit the drainage area to 1 acre at the drop inlet. The stone barrier should have a minimum height of 1 foot and a maximum height of 2 feet. Do not use mortar. The height should be limited to prevent excess ponding and bypass flow.

Recess the first course of blocks at least 2 inches below the crest opening of the storm drain for lateral support. Subsequent courses can be supported laterally if needed by placing a 2x4 inch wood stud through the block openings perpendicular to the course. The bottom row should have a few blocks oriented so flow can drain through the block to dewater the basin area.

The stone should be placed just below the top of the blocks on slopes of 2:1 or flatter. Place hardware cloth of wire mesh with ½ inch openings over all block openings to hold stone in place.

As an optional design, the concrete blocks may be omitted and the entire structure constructed of stone, ringing the outlet ("doughnut"). The stone should be kept at a 3:1 slope toward the inlet to keep it from being washed into the inlet. A level area 1 foot wide and four inches below the crest will further prevent wash. Stone on the slope toward the inlet should be at least 3 inches in size for stability and 1 inch or smaller away from the inlet to control flow rate. The elevation of the top of the stone crest must be maintained 6 inches lower than the ground elevation down slope from the inlet to ensure that all storm flows pass over the stone into the storm drain and not past the structure. Temporary diking should be used as necessary to prevent bypass flow.

The barrier should be inspected after each rain event and repairs made where needed. Remove sediment as necessary to provide for accurate storage volume for subsequent rains. Upon stabilization of contributing drainage area, remove all materials and any unstable soil and dispose of properly.

Bring the disturbed area to proper grade, smooth, compact and stabilized in a manner appropriate to the site.

Type IV – Curb Drop Inlet Protection

See Figure 5A. 14 for details on Curb Drop Inlet Protection on page 5A.32.

The drainage area should be limited to 1 acre at the drop inlet. The wire mesh must be of sufficient strength to support the filter fabric and stone with the water fully impounded against it. Stone is to be 2 inches in size and clean. The filter fabric must be of a type approved for this purpose with an equivalent opening size (EOS) of 40-85. The protective structure will be constructed to extend beyond the inlet 2 feet in both directions. Assure that storm flow does not bypass the inlet by installing temporary dikes (such as sand bags) directing flow into the inlet. Make sure that the overflow weir is stable. Traffic safety shall be integrated with the use of this practice.

The structure should be inspected after every storm event. Any sediment should be removed and disposed of on the site. Any stone missing should be replaced. Check materials for proper anchorage and secure as necessary.

Figure 5A.11
Excavated Drop Inlet Protection

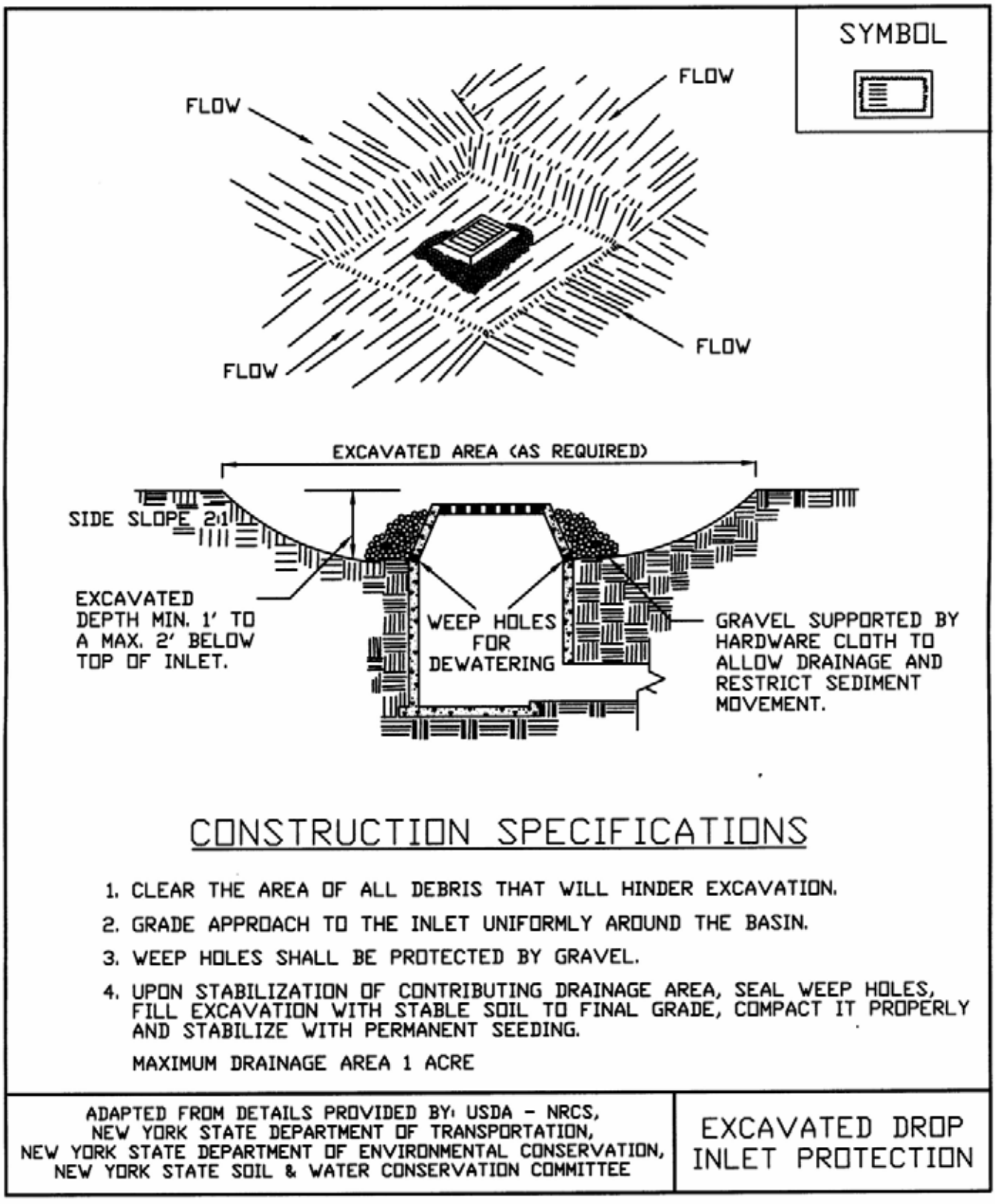
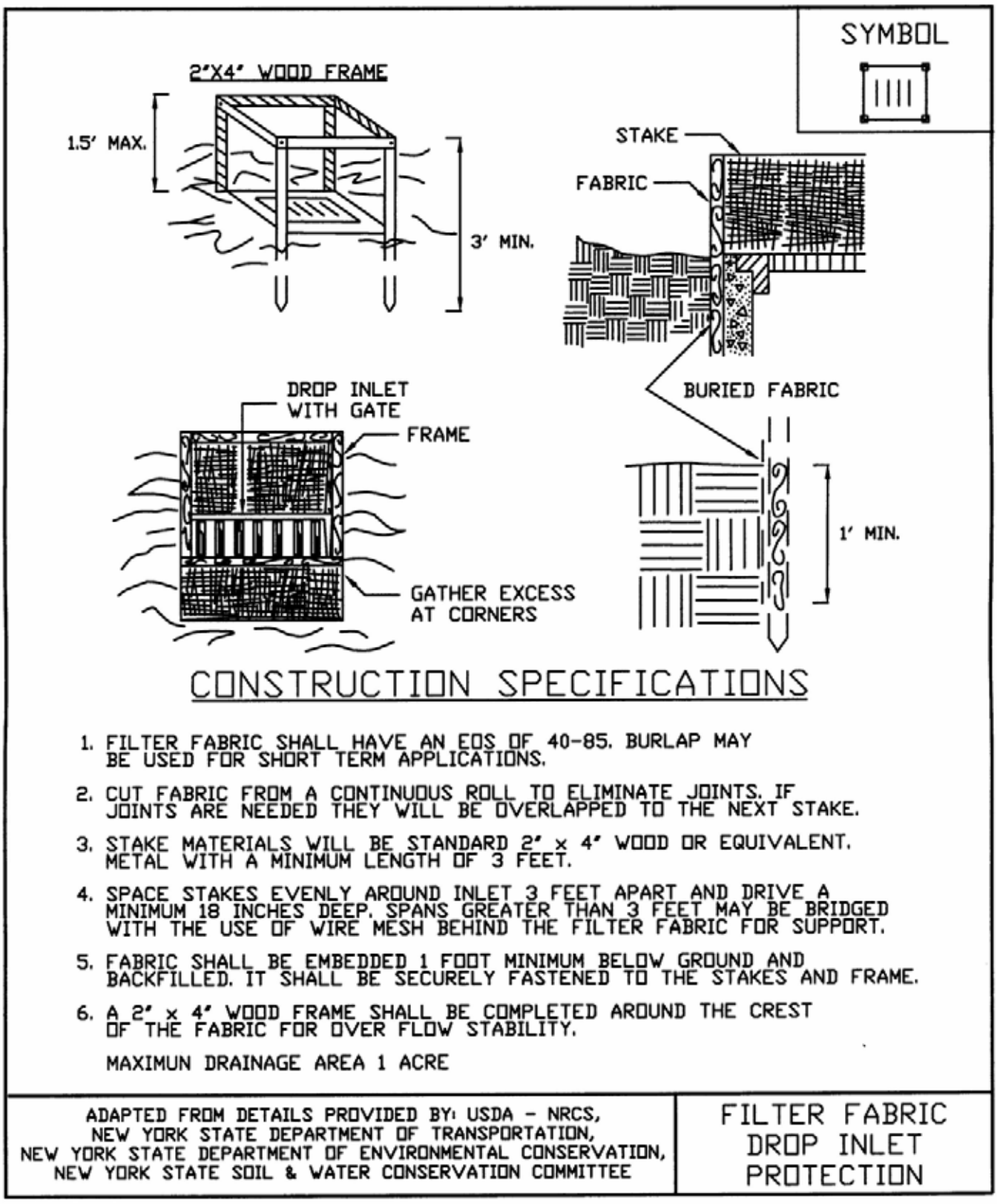


Figure 5A.12
Filter Fabric Drop Inlet Protection



CONSTRUCTION SPECIFICATIONS

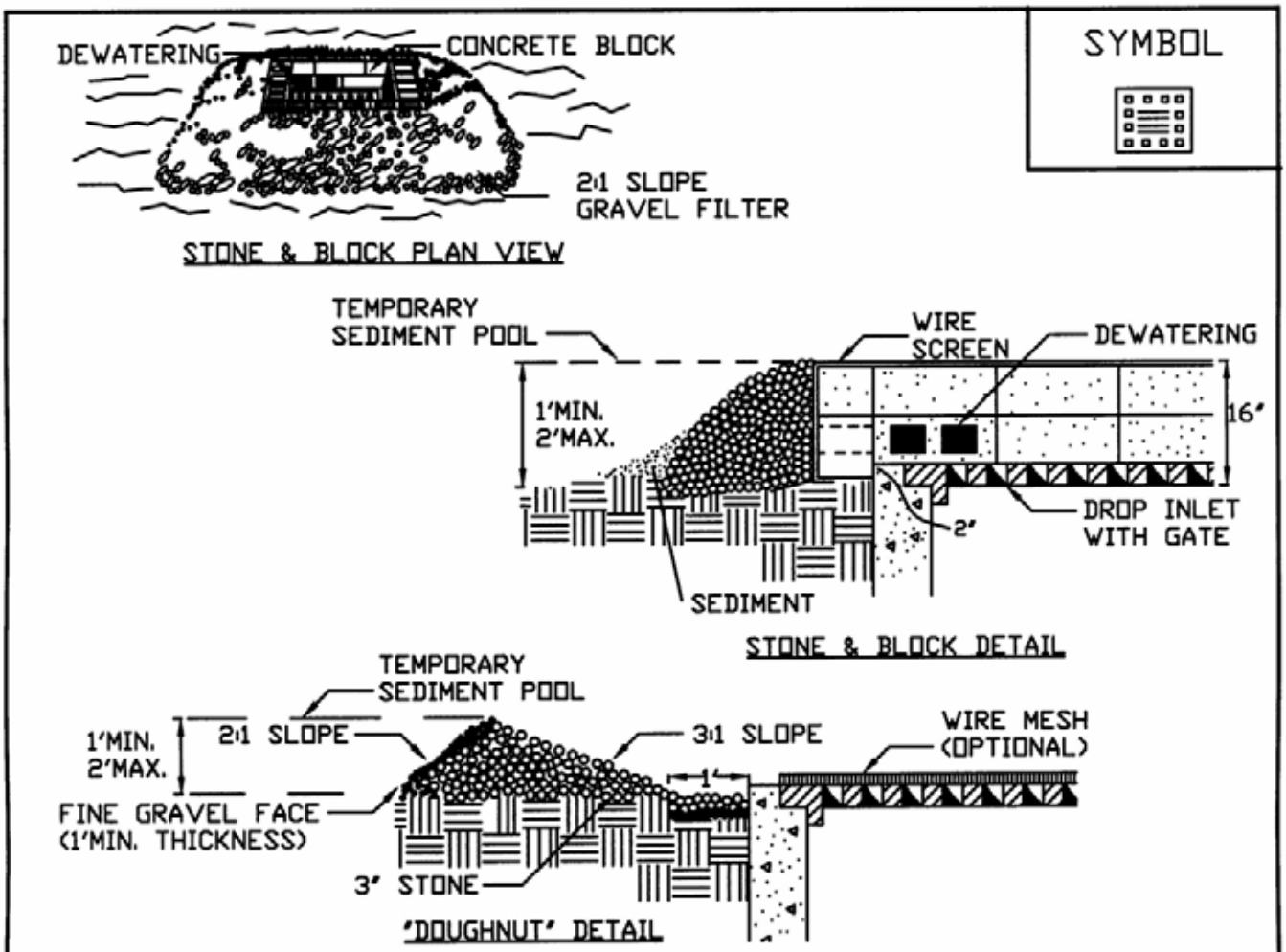
1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

FILTER FABRIC
DROP INLET
PROTECTION

Figure 5A.13
Stone & Block Drop Inlet Protection



CONSTRUCTION SPECIFICATIONS

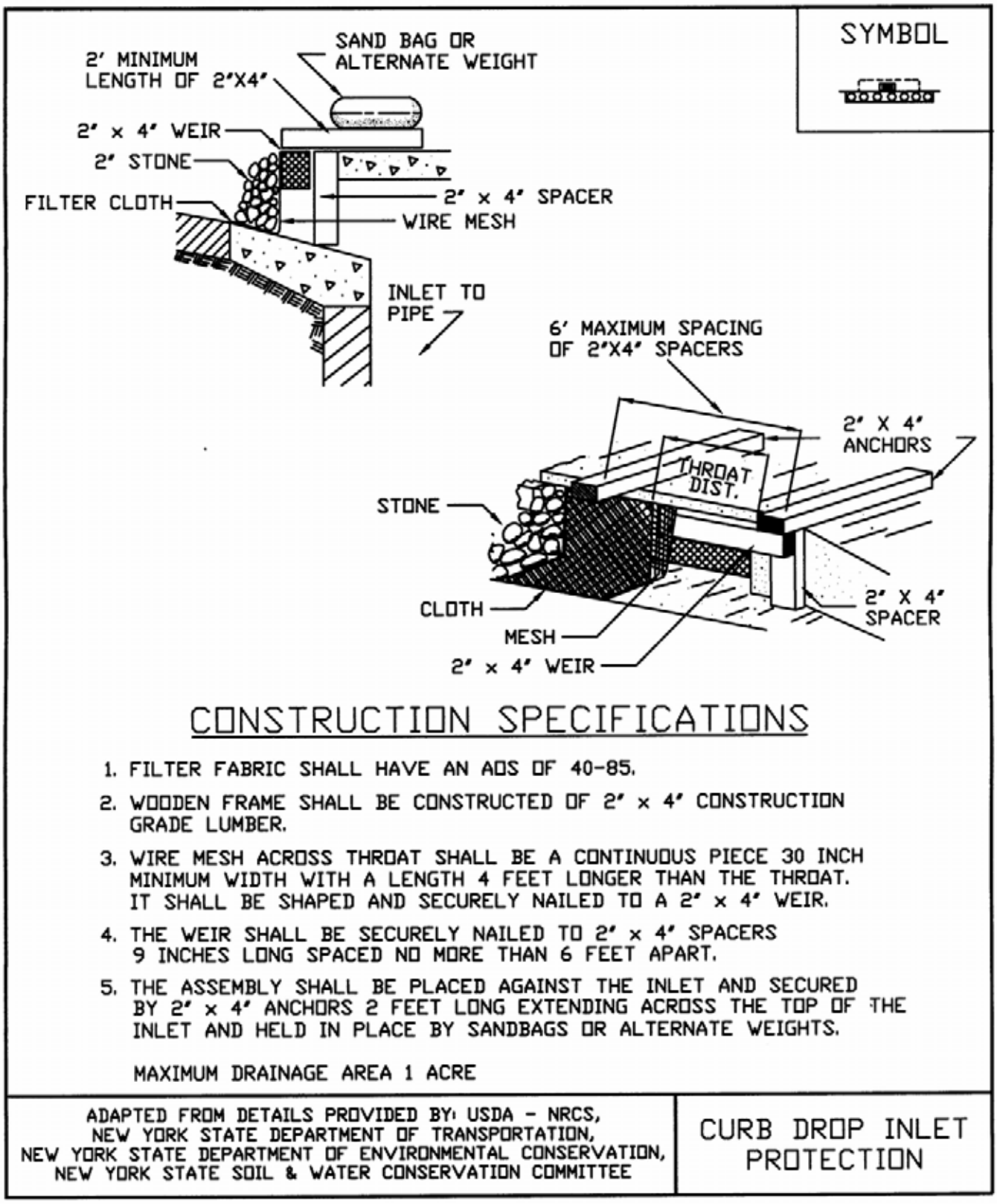
1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL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

MAXIMUM DRAINAGE AREA 1 ACRE

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

STONE & BLOCK
DROP INLET
PROTECTION

Figure 5A.14
Curb Drop Inlet Protection



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN AOS OF 40-85.
2. WOODEN FRAME SHALL BE CONSTRUCTED OF 2" x 4" CONSTRUCTION GRADE LUMBER.
3. WIRE MESH ACROSS THROAT SHALL BE A CONTINUOUS PIECE 30 INCH MINIMUM WIDTH WITH A LENGTH 4 FEET LONGER THAN THE THROAT. IT SHALL BE SHAPED AND SECURELY NAILED TO A 2" x 4" WEIR.
4. THE WEIR SHALL BE SECURELY NAILED TO 2" x 4" SPACERS 9 INCHES LONG SPACED NO MORE THAN 6 FEET APART.
5. THE ASSEMBLY SHALL BE PLACED AGAINST THE INLET AND SECURED BY 2" x 4" ANCHORS 2 FEET LONG EXTENDING ACROSS THE TOP OF THE INLET AND HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHTS.

MAXIMUM DRAINAGE AREA 1 ACRE

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

CURB DROP INLET PROTECTION

STANDARD AND SPECIFICATIONS FOR SILT FENCE

Definition

A temporary barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment load. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used (approximately one year).

Conditions Where Practice Applies

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

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

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

2. Maximum drainage area for overland flow to a silt fence shall not exceed ¼ acre per 100 feet of fence, with maximum ponding depth of 1.5 feet behind the fence; and

3. Erosion would occur in the form of sheet erosion; and

4. There is no concentration of water flowing to the barrier.

Design Criteria

Design computations are not required for installations of 1 month or less. Longer installation periods should be designed for expected runoff. All silt fences shall be placed as close to the areas as possible, but at least 10 feet from the toe of a slope to allow for maintenance and roll down. The area beyond the fence must be undisturbed or stabilized.

Sensitive areas to be protected by silt fence may need to be reinforced by using heavy wire fencing for added support to prevent collapse.

Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. A detail of the silt fence shall be shown on the plan. See Figure 5A.8 on page 5A.21 for details.

Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance.

Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682

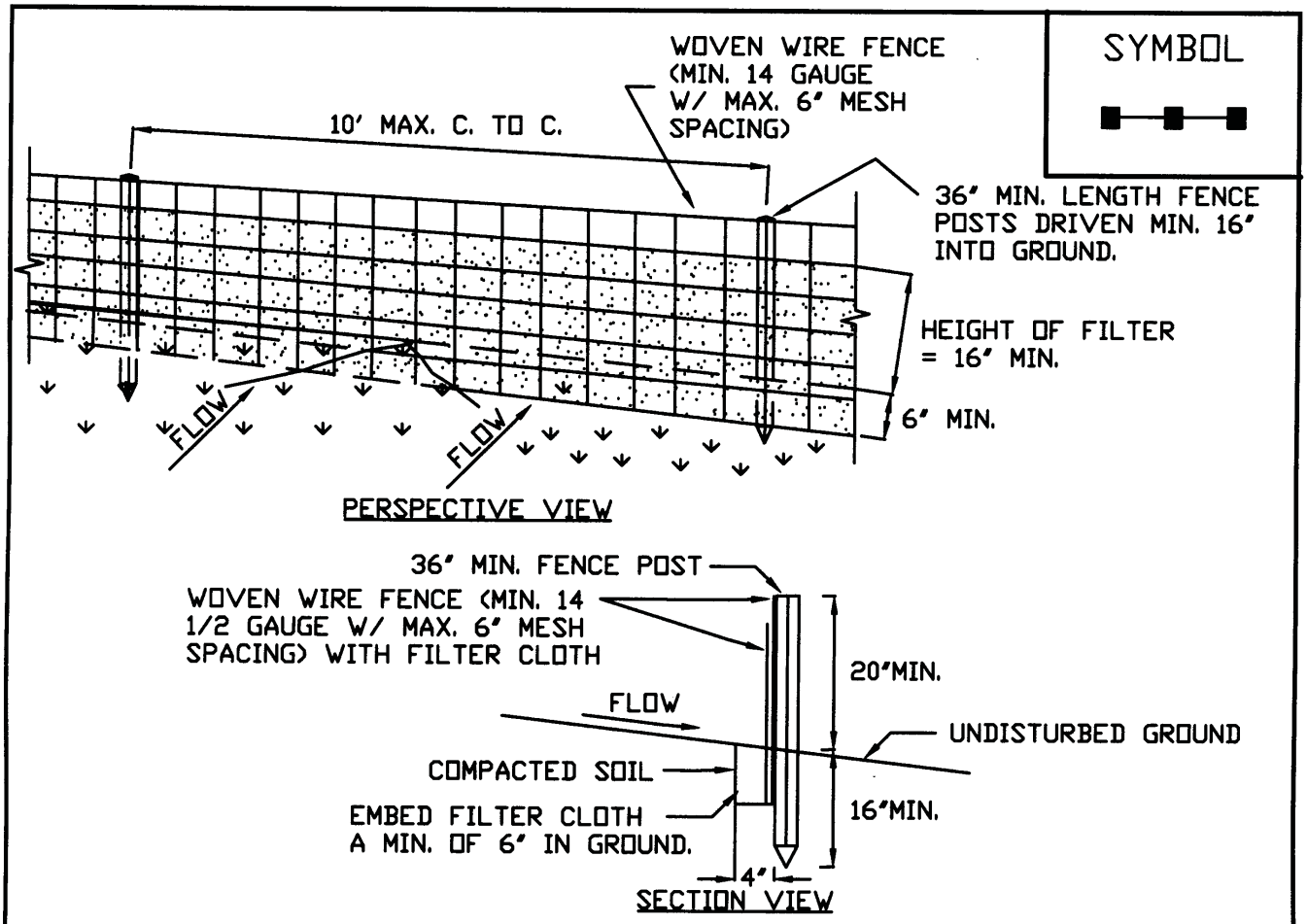
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751 (modified)
Slurry Flow Rate (gal/min/sf)	0.3	
Equivalent Opening Size	40-80	US Std Sieve CW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.0 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot.

3. Wire Fence (for fabricated units): Wire fencing shall be a minimum 14 gage with a maximum 6 in. mesh opening, or as approved.

4. Prefabricated Units: Envirofence, Geofab, or approved equal, may be used in lieu of the above method providing the unit is installed per details shown in Figure 5A.8.

Figure 5A.8
Silt Fence



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	SILT FENCE

STANDARD AND SPECIFICATIONS
FOR
CHECK DAM

Definition

Small barriers or dams constructed of stone, bagged sand or gravel, or other durable material across a drainage way.

Purpose

To reduce erosion in a drainage channel by restricting the velocity of flow in the channel.

Condition Where Practice Applies

This practice is used as a temporary or emergency measure to limit erosion by reducing velocities in small open channels that are degrading or subject to erosion and where permanent stabilization is impractical due to short period of usefulness and time constraints of construction.

Design Criteria

Drainage Area: Maximum drainage area above the check dam shall not exceed two (2) acres.

Height: Not greater than 2 feet. Center shall be maintained 9 inches lower than abutments at natural ground elevation.

Side Slopes: Shall be 2:1 or flatter.

Spacing: The check dams shall be spaced as necessary in the channel so that the crest of the downstream dam is at the elevation of the toe of the upstream dam. This spacing is equal to the height of the check dam divided by the channel slope.

Therefore:

$S = h/s$

Where:

S = spacing interval (ft.)
h = height of check dam (ft.)
s = channel slope (ft./ft.)

Example:

For a channel with a 4% slope and 2 ft. high stone check dams, they are spaced as follows:

$$S = \frac{2 \text{ ft.}}{.04 \text{ ft/ft.}} = 50 \text{ ft.}$$

Stone size: Use a well graded stone matrix 2 to 9 inches in size (NYS – DOT Light Stone Fill meets these requirements).

The overflow of the check dams will be stabilized to resist erosion that might be caused by the check dam. See Figure 5A.9 on page 5A.24 for details.

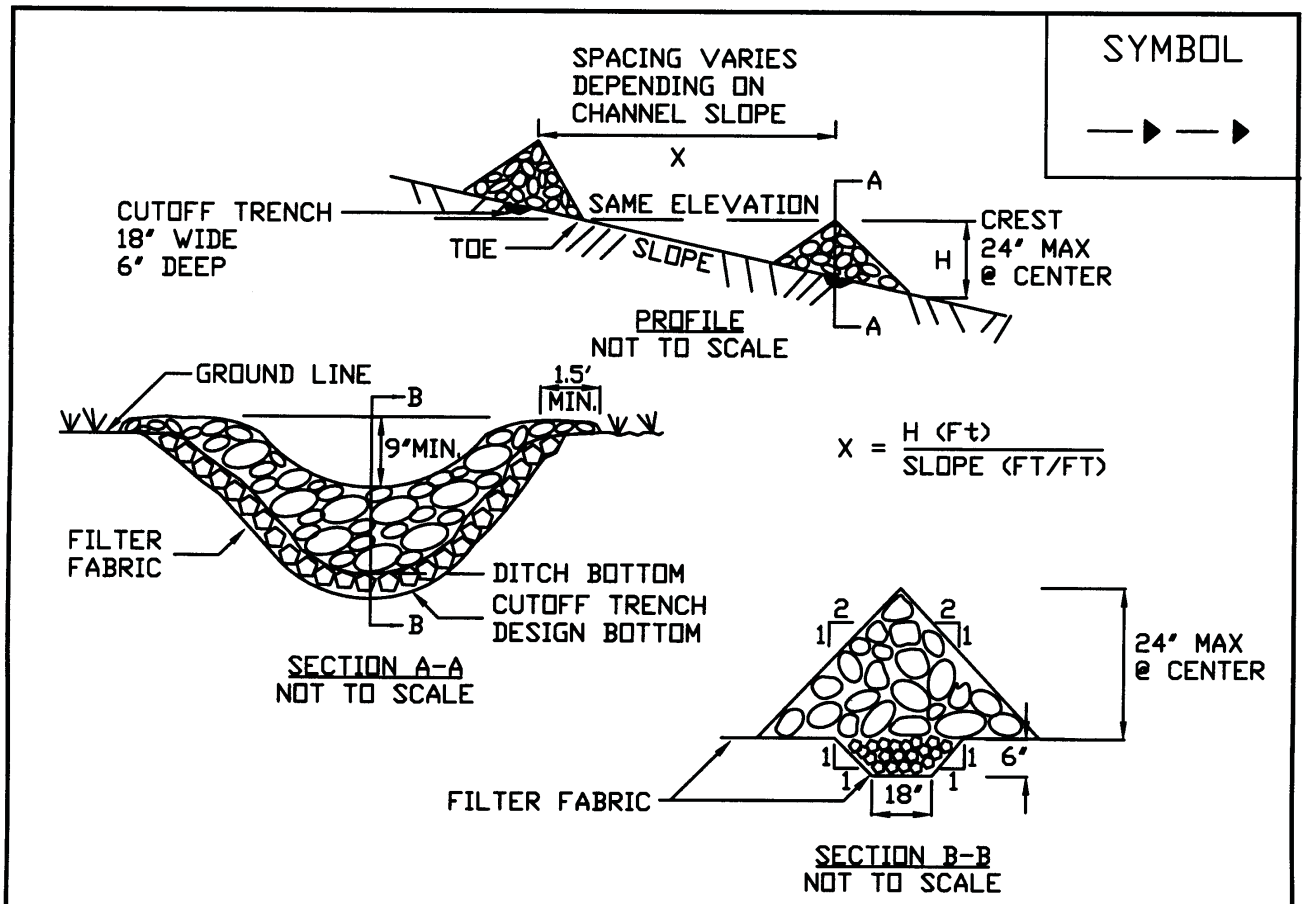
Check dams should be anchored in the channel by a cutoff trench 1.5 ft. wide and 0.5 ft. deep and lined with filter fabric to prevent soil migration.

Maintenance

The check dams should be inspected after each runoff event. Correct all damage immediately. If significant erosion has occurred between structures, a liner of stone or other suitable material should be installed in that portion of the channel.

Remove sediment accumulated behind the dam as needed to allow channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam. Replace stones as needed to maintain the design cross section of the structures.

Figure 5A.9
Check Dam



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	CHECK DAM

STANDARD AND SPECIFICATIONS FOR STABILIZED CONSTRUCTION ENTRANCE

Definition

A stabilized pad of aggregate underlain with geotextile located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk, or parking area.

Purpose

The purpose of stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets.

Conditions Where Practice Applies

A stabilized construction entrance shall be used at all points of construction ingress and egress.

Design Criteria

See Figure 5A.35 on page 5A.76 for details.

Aggregate Size: Use a matrix of 1-4 inch stone, or reclaimed or recycled concrete equivalent.

Thickness: Not less than six (6) inches.

Width: 12-foot minimum but not less than the full width of points where ingress or egress occurs. 24-foot minimum if there is only one access to the site.

Length: As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum would apply).

Geotextile: To be placed over the entire area to be covered with aggregate. Filter cloth will not be required on a single-family residence lot. Piping of surface water under entrance shall be provided as required. If piping is impossible, a mountable berm with 5:1 slopes will be permitted.

Criteria for Geotextile

The geotextile shall be woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydro-carbons, mildew, rot resistant, and conform to the fabric properties as shown:

Fabric Properties[3]	Light Duty[1] Roads Grade Subgrade	Heavy Duty[2] Haul Roads Rough Graded	Test Method
Grab Tensile Strength (lbs)	200	220	ASTM D1682
Elongation at Failure (%)	50	60	ASTM D1682
Mullen Brust Strength (lbs)	190	430	ASTM D3786
Puncture Strength (lbs)	40	125	ASTM D751 modified
Equivalent Opening Size	40-80	40-80	US Std Sieve CW-02215
Aggregate Depth	6	10	--

[1]Light Duty Road: Area sites that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Acceptable materials are Trevira Spunbond 1115, Mirafi 100X, Typar 3401, or equivalent.

[2]Heavy Duty Road: Area sites with only rough grading, and where most travel would be multi-axle vehicles. Acceptable materials are Trevira Spunbond 1135, Mirafi 600X, or equivalent.

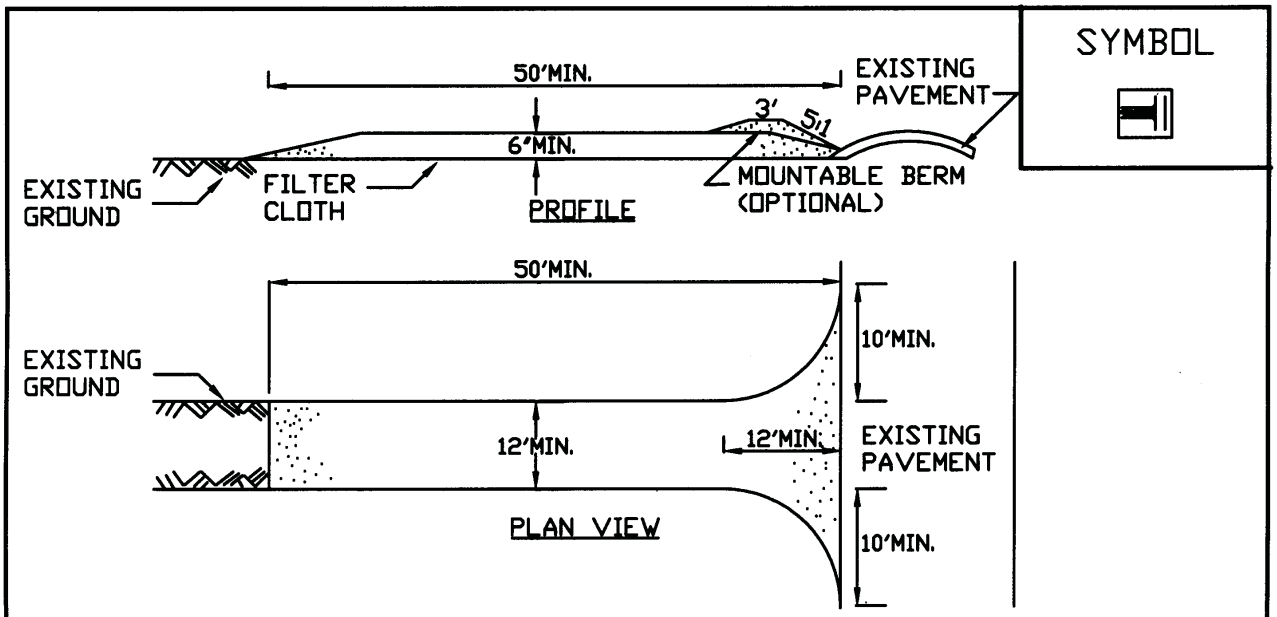
[3]Fabrics not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.

Maintenance

The entrance shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately.

When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device. All sediment shall be prevented from entering storm drains, ditches, or watercourses.

Figure 5A.35
Stabilized Construction Entrance



CONSTRUCTION SPECIFICATIONS

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

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	STABILIZED CONSTRUCTION ENTRANCE

STORMWATER POLLUTION PREVENTION PLAN
GENERAL CONTRACTOR'S CERTIFICATION

Wilkins R.V.

Village of Churchville, County of Monroe
State of New York

STORM WATER POLLUTION PREVENTION PROGRAM
DATED MARCH 2015

GENERAL CONTRACTOR'S CERTIFICATION:

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date : _____

Scope of Services: Site Contractor

STORMWATER POLLUTION PREVENTION PLAN
SUBCONTRACTOR'S CERTIFICATION

Wilkins R.V.

Village of Churchville, County of Monroe
State of New York

STORM WATER POLLUTION PREVENTION PROGRAM
DATED MARCH 2015

SUBCONTRACTOR'S CERTIFICATION:

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

STORMWATER CONTROL FACILITY MAINTENANCE AGREEMENT

Whereas, the Village of ___Churchville___ and ___BLW Properties of Churchville, LLC._____
(VILLAGE/MUNICIPALITY) **(FACILITY OWNER & ADDRESS)**

want to enter into an agreement to provide for the long term maintenance and continuation of stormwater control measures approved by the Village of __Churchville____ for the
(VILLAGE/MUNICIPALITY)

__Wilkins R.V.__ located at __111 and 97 South Main Street____.
(PROJECT TITLE) **(PROJECT LOCATION)**

Whereas, the Village and the facility owner desire that the stormwater control measures be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components. Therefore, the Village and the facility owner agree as follows:

1. This agreement binds the Village and the facility owner, its successors and assigns, to the maintenance provisions depicted in the approved final site plan, which are attached as Appendix A of this agreement.
2. The facility owner shall maintain, clean, repair, replace (if necessary) the stormwater control measures depicted in Schedule A as necessary to ensure optimum performance of the measures as designed.
3. The facility owner shall be responsible for all expenses related to maintenance of stormwater management and shall establish a means for collection and distribution of expenses among parties for any commonly owner facilities.
4. The facility owner shall provide periodic inspection of stormwater control measures, not less than once every three-year period, to determine the condition and integrity of the measures. A Professional Engineer licensed by the State of New York shall perform such inspections. The inspecting engineer shall prepare and submit a report of the findings, including recommended actions, to the Village within 30 days of the inspection.
5. The facility owner shall not authorize, undertake or permit alteration, abandon, modification or discontinuation of the stormwater control measures without written approval of the Village.

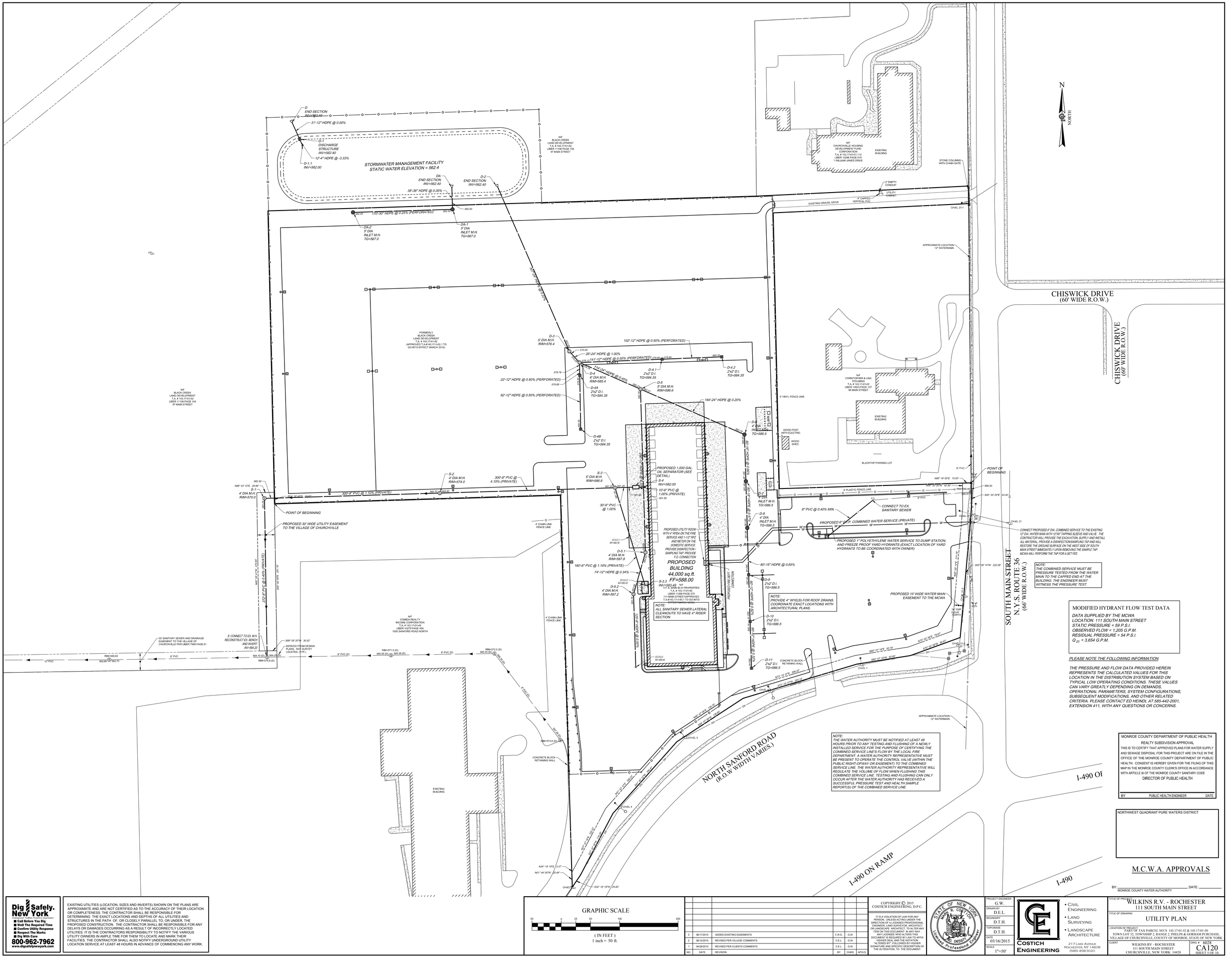
6. The facility owner shall undertake necessary repairs and replacement of the stormwater control measures at the direction of the Village or in accordance with the recommendation of the inspecting engineer.
7. The agreement shall be recorded in the Office of the County Clerk, County of __Monroe_____ together with the deed for the common property.
   (COUNTY)
8. If ever the Village determines that the facility owner has failed to construct or maintain the stormwater control measures in accordance with the project plans or has failed to undertake required corrective measures, the Village is authorized to undertake steps reasonably necessary for the preservation, continuation or maintenance of the facility and to affix the expenses as a lien against the property.
9. This agreement is effective on _____.
   (DATE)

Signature of Owner: _____

Signature of Village Official: _____

Notary Public:

APPENDIX IV


D
END SECTION
INV=562.40
31'-12" HDPE @ 0.00%
D-1
DISCHARGE
STRUCTURE
INV=562.40
12'-4" HDPE @ -3.33%
D-1.1
INV=562.00
STORMWATER MANAGEMENT FACILITY
STATIC WATER ELEVATION = 562.4
N/F
BLACK CREEK
LANDDEVELOPMENT
T.A. # 143.17-01-52
LIBER 11106 PAGE 154
97 MAIN STREET
DA
END SECTION
INV=562.40
38'-36" HDPE @ 0.26%
D-2
END SECTION
INV=562.40
170'-30" HDPE @ 0.25% (PERFORMED)
DA-2
9" DIA
INLET M.H.
TG=567.0
DA-1
5' DIA
INLET M.H.
TG=567.0
N/F
CHURCHVILLE HOUSING
DEVELOPMENT FUND
CORPORATION
T.A. # 143.17-01-01.112
LIBER 10288 PAGE 619
1 WILLIAM JAMES DRIVE
EXISTING
BUILDING
STONE COLUMNS
WITH CHAIN GATE
7" EMPTY
CONDUIT
UTILITY
CABINET
4" CAPPED
VERTICAL PVC
EXISTING GRAVEL DRIVE
CHEL 27-1
APPROXIMATE LOCATION
12" WATERMAIN
CHISWICK DRIVE
(60' WIDE R.O.W.)
CHISWICK DRIVE
(60' WIDE R.O.W.)
N/F
CHRISTOPHER & LISA
STEUBING
T.A. # 143.17-01-02
LIBER V3523 PAGE 127
99 MAIN STREET
EXISTING
BUILDING
5' VINYL FENCE LINE
WOOD POST
WITH ELECTRIC
WOOD
SHED
BLACKTOP PARKING LOT
6" PVC
POINT OF
BEGINNING
N86° 16' 00"E 15.00'
N00° 33' 20"W 42.36'
586.30
6" PLASTIC FENCE LINE
RIM=580.40
580.80
S00° 33' 20"E 43.40'
8" PVC
CHEL 30
CHEL 31
CONNECT TO EX.
SANITARY SEWER
8" PVC @ 0.40% MIN.
PROPOSED 6" DIA. COMBINED WATER SERVICE (PRIVATE)
CONNECT PROPOSED 6" DIA. COMBINED SERVICE TO THE EXISTING 12" DIA. WATER MAIN WITH 12"X6" TAPPING SLEEVE AND VALVE. THE CONTRACTOR WILL PROVIDE THE EXCAVATION, SUPPLY AND INSTALL ALL MATERIAL, PROVIDE A DISINFECTION/SAMPLING TAP AND WILL RESTORE THE GROUND SURFACE ON THE WEST SIDE OF SOUTH MAIN STREET IMMEDIATELY UPON REMOVING THE SAMPLE TAP. MCWA WILL PERFORM THE TAP FOR A SET FEE.
PROPOSED 1" POLYETHYLENE WATER SERVICE TO DUMP STATION. ADD FREEZE PROOF YARD HYDRANTS (EXACT LOCATION OF YARD HYDRANTS TO BE COORDINATED WITH OWNER)
NOTE:
THE COMBINED SERVICE MUST BE PRESSURE TESTED FROM THE WATER MAIN TO THE CAPPED END AT THE BUILDING. THE ENGINEER MUST WITNESS THE PRESSURE TEST.
PROPOSED 15' WIDE WATER MAIN EASEMENT TO THE MCWA
S00° 00' 14"W 222.08'
CHEL 27-2
CHEL 17-1
CHEL 17-2
SOUTH MAIN STREET
N.Y.S. ROUTE 36
(66' WIDE R.O.W.)
MODIFIED HYDRANT FLOW TEST DATA
DATA SUPPLIED BY THE MCWA
LOCATION: 111 SOUTH MAIN STREET
STATIC PRESSURE = 59 P.S.I.
OBSERVED FLOW = 1,205 G.P.M.
RESIDUAL PRESSURE = 54 P.S.I.
Q_{20} = 3,654 G.P.M.
PLEASE NOTE THE FOLLOWING INFORMATION
THE PRESSURE AND FLOW DATA PROVIDED HEREIN REPRESENTS THE CALCULATED VALUES FOR THIS LOCATION IN THE DISTRIBUTION SYSTEM BASED ON TYPICAL LOW OPERATING CONDITIONS. THESE VALUES CAN VARY GREATLY DEPENDING ON DEMANDS, OPERATIONAL PARAMETERS, SYSTEM CONFIGURATIONS, SUBSEQUENT MODIFICATIONS, AND OTHER RELATED CRITERIA. PLEASE CONTACT ED HEINDL AT 585-442-2001, EXTENSION 411, WITH ANY QUESTIONS OR CONCERNS.
N/F
BLACK CREEK
LAND DEVELOPMENT
T.A. # 143.17-01-52
LIBER 11106 PAGE 154
97 MAIN STREET
FORMERLY
BLACK CREEK
LAND DEVELOPMENT
T.A. # 143.17-01-52
(APPROVED T.A.#143.17-1-52.1 TO
GO INTO EFFECT MARCH 2016)
D-3
5' DIA M.H.
RIM=576.4
102'-12" HDPE @ 0.50% (PERFORMED)
26'-24" HDPE @ 1.00%
141'-12" HDPE @ 0.50% (PERFORMED)
D-4.1
2'x2' D.I.
TG=584.35
D-4.2
2'x2' D.I.
TG=584.35
114'-24" HDPE @ 0.45%
D-4
6' DIA M.H.
RIM=585.4
D-5
5' DIA M.H.
RIM=586.6
22'-12" HDPE @ 0.50% (PERFORMED)
D-4A
2'x2' D.I.
TG=584.35
92'-12" HDPE @ 0.50% (PERFORMED)
194'-24" HDPE @ 0.20%
D-4B
2'x2' D.I.
TG=584.35
D-6
4' DIA
INLET M.H.
TG=586.5
PROPOSED 1,000 GAL.
OIL SEPARATOR (SEE
DETAIL)
S-4
INV=582.00
1.00% (PRIVATE)
581.90
S-2
4' DIA.M.H.
RIM=574.0
300'-8" PVC @
4.15% (PRIVATE)
S-3
5' DIA.M.H.
RIM=586.8
300'-8" PVC @ 1.10% (PRIVATE)
565.39
N89° 43' 15"E 29.66'
S-1
4' DIA.M.H.
RIM=570.0
S88° 16' 45"E 299.67'
POINT OF BEGINNING
PROPOSED 30' WIDE UTILITY EASEMENT
TO THE VILLAGE OF CHURCHVILLE
4' CHAIN LINK
FENCE LINE
30'-6" PVC
@ 1.00%
PROPOSED UTILITY ROOM
WITH 4" RPDA ON THE FIRE
SERVICE AND 1-1/2" RPZ
AND METER ON THE
DOMESTIC SERVICE
PROVIDE DISINFECTION /
SAMPLING TAP. PROVIDE
F.D. CONNECTION
PROPOSED
BUILDING
44,000 sq.ft.
FF=588.00
N/F
111 S. MAIN BLVI PROPERTIES
T.A. # 143.17-01-50
LIBER 11068 PAGE 575
111 MAIN STREET(APPROVED
T.A.#143.17-1-50.1 TO GO INTO
EFFECT MARCH 2016)
S-3.3
INV=583.49
D-5.1
4' DIA M.H.
RIM=587.8
180'-6" PVC @ 1.19% (PRIVATE)
74'-12" HDPE @ 0.34%
D-5.2
4' DIA.M.H.
RIM=587.2
NOTE:
ALL SANITARY SEWER LATERAL
CLEANOUTS TO HAVE 4" RISER
SECTION.
80'-15" HDPE @ 0.65%
D-9
2'x2' D.I.
TG=586.5
NOTE:
PROVIDE 4" WYE(S) FOR ROOF DRAINS.
COORDINATE EXACT LOCATIONS WITH
ARCHITECTURAL PLANS.
D-10
2'x2' D.I.
TG=586.5
D-11
2'x2' D.I.
TG=586.5
CONCRETE BLOCK
RETAINING WALL
N/F
COMDA REALTY
INCOME CORPORATION
T.A. # 143.17-01-49
LIBER 10275 PAGE 459
1000 SANFORD ROAD NORTH
4' CHAIN LINK
FENCE LINE
30' SANITARY SEWER AND DRAINAGE
EASEMENT TO THE VILLAGE OF
CHURCHVILLE PER LIBER 7568 PAGE 61
S CONNECT TO EX. M.H.
RECONSTRUCT EX. BENCH
AND INVERT
INV=564.20
S89° 05' 20"W 30.02'
DERIVED FROM DESIGN
PLANS. NOT SURVEY
LOCATED. (TYP.)
RIM=569.83
562.68'
562.75
12" PVC
8" PVC
564.10 (D)
564.20 (D)
RIM=574.8 (D)
RIM=571.5 (D)
565.26 (D)
565.36 (D)
8" PVC (D)
RIM=572.5 (D)
566.25 (D)
566.35 (D)
8" PVC (D)
N/F
BLACK CREEK
LAND DEVELOPMENT
T.A. # 143.17-01-52
LIBER 11106 PAGE 154
97 MAIN STREET
EXISTING
BUILDING
CONCRETE BLOCK
RETAINING WALL
RIM=573.6 (D)
NORTH SANFORD ROAD
(R.O.W WIDTH VARIES.)
CHEL 4
CHEL 3
CHEL 2
CHEL 1
N34° 19' 18"E 3.37'
N01° 44' 00"W 25.48'
S34° 18' 18"W 24.83'
CHEL 5
I-490 ON RAMP
I-490
I-490 OI
NOTE:
THE WATER AUTHORITY MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY TESTING AND FLUSHING OF A NEWLY INSTALLED SERVICE FOR THE PURPOSE OF CERTIFYING THE COMBINED SERVICE LINE'S FLOW BY THE LOCAL FIRE DEPARTMENT. A WATER AUTHORITY REPRESENTATIVE MUST BE PRESENT TO OPERATE THE CONTROL VALVE (WITHIN THE PUBLIC RIGHT-OFWAY OR EASEMENT) TO THE COMBINED SERVICE LINE. THE WATER AUTHORITY REPRESENTATIVE WILL REGULATE THE VOLUME OF FLOW WHEN FLUSHING THIS COMBINED SERVICE LINE. TESTING AND FLUSHING CAN ONLY OCCUR AFTER THE WATER AUTHORITY HAS RECEIVED A SUCCESSFUL PRESSURE TEST AND HEALTH SAMPLE REPORT(S) OF THE COMBINED SERVICE LINE.
MONROE COUNTY DEPARTMENT OF PUBLIC HEALTH
REALTY SUBDIVISION APPROVAL
THIS IS TO CERTIFY THAT APPROVED PLANS FOR WATER SUPPLY AND SEWAGE DISPOSAL FOR THIS PROJECT ARE ON FILE IN THE OFFICE OF THE MONROE COUNTY DEPARTMENT OF PUBLIC HEALTH. CONSENT IS HEREBY GIVEN FOR THE FILING OF THIS MAP IN THE MONROE COUNTY CLERK'S OFFICE IN ACCORDANCE WITH ARTICLE III OF THE MONROE COUNTY SANITARY CODE
DIRECTOR OF PUBLIC HEALTH
BY PUBLIC HEALTH ENGINEER DATE
NORTHWEST QUADRANT PURE WATERS DISTRICT
M.C.W.A. APPROVALS
BY: MONROE COUNTY WATER AUTHORITY DATE:
Dig Safely. New York
Underground Facility Protection Organization
Call Before You Dig
Wait The Required Time
Confirm Utility Response
Respect The Marks
Dig With Care
800-962-7962
www.digsafelynewyork.com
EXISTING UTILITIES (LOCATION, SIZES AND INVERTS) SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER, THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS OR DAMAGES OCCURRING AS A RESULT OF INCORRECTLY LOCATED UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY UNDERGROUND UTILITY LOCATION SERVICE AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK.
GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.
NO. DATE REVISION BY CHKD APVLS
3 06/17/2016 ADDED EXISTING EASEMENTS E.R.G. G.W.
2 06/12/2015 REVISED PER VILLAGE COMMENTS D.E.L. G.W.
1 04/26/2015 REVISED PER CLIENTS COMMENTS D.E.L. G.W.
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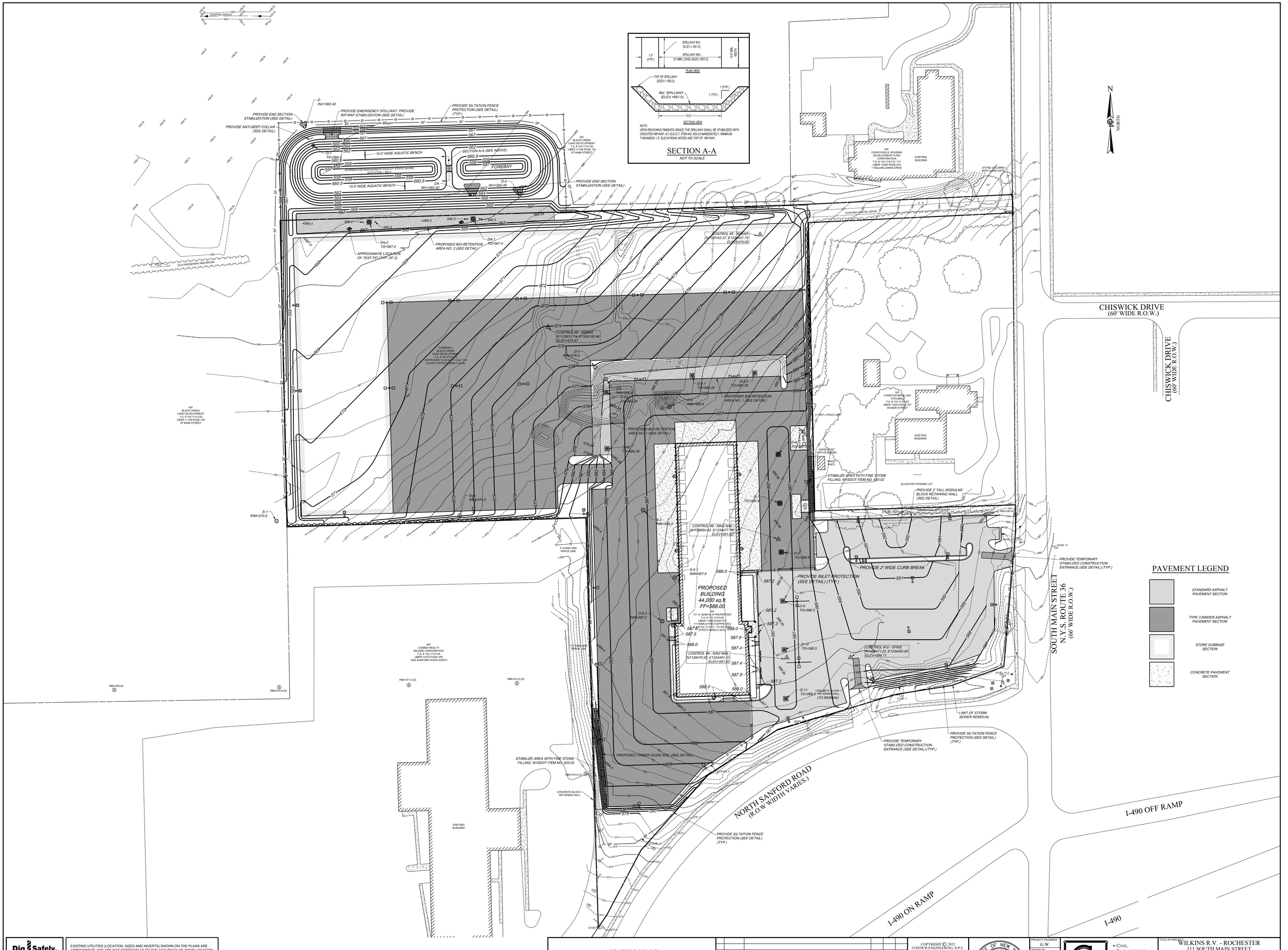
COSTICH ENGINEERING, D.P.C.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, LAND SURVEYOR, ARCHITECT, OR LANDSCAPE ARCHITECT, TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. IF ANY ITEM BEARING THE SEAL OF THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND SPECIFIC DESCRIPTION OF THE ALTERATION, TO THE DOCUMENT.
STATE OF NEW YORK
MARK A. COSTICH
No. 065971
Licensed Professional Engineer
COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND SURVEYING
• LANDSCAPE ARCHITECTURE
217 LAKE AVENUE
ROCHESTER, NY 14608
(585) 458-3020
PROJECT ENGINEER G.W.
DRAWN BY D.E.L.
BOUNDARY D.T.H.
TOPOBASE D.T.H.
DATE 03/16/2015
SCALE 1"=50'
TITLE OF PROJECT
WILKINS R.V. - ROCHESTER
111 SOUTH MAIN STREET
TITLE OF DRAWING
UTILITY PLAN
LOCATION OF PROJECT
PART OF TAX PARCEL NO'S 143.17-01-52 & 143.17-01-50
TOWN LOT 52, TOWNSHIP 2, RANGE 2, PHELPS & GORHAM PURCHASE,
VILLAGE OF CHURCHVILLE, COUNTY OF MONROE, STATE OF NEW YORK
CLIENT WILKINS RV - ROCHESTER
111 SOUTH MAIN STREET
CHURCHVILLE, NEW YORK 14428
DWG # 6028
CA120
SHEET 5 OF 10



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GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

NO.	DATE	REVISION	BY	CHKD.	APVL'S.
4	07/10/2015	REVISED PER NYSDEC COMMENTS, ADDED SURVEY CONTROL	D.E.L.	G.W.	
3	06/12/2015	REVISED PER VILLAGE COMMENTS	D.E.L.	G.W.	
2	05/29/2015	REVISED PER VILLAGE ENGINEERS COMMENTS	D.E.L.	G.W.	
1	04/28/2015	REVISED PER CLIENTS COMMENTS	D.E.L.	G.W.	

STATE OF NEW YORK MARK R. COSTICH 065971 Licensed Professional Engineer

PROJECT ENGINEER	G.W.
DRAWN BY	D.E.L.
BOUNDARY	D.T.H.
TOPOGRAPHY	D.T.H.
DATE	03/16/2015
SCALE	1"=50'

COSTICH ENGINEERING
• Civil Engineering
• Land Surveying
• Landscape Architecture
217 Lake Avenue
Rochester, NY 14608
(585) 458-3020

TITLE OF PROJECT: WILKINS R.V. - ROCHESTER 111 SOUTH MAIN STREET

TITLE OF DRAWING: GRADING AND EROSION CONTROL PLAN

LOCATION OF PROJECT: PART OF TAX PARCEL NO.'S. 143.17-01-52 & 143.17-01-50 TOWN LOT 12, TOWNSHIP 2, RANGE 2, PHELPS & GORHAM PURCHASE, VILLAGE OF CHURCHVILLE, COUNTY OF MONROE, STATE OF NEW YORK

CLIENT: WILKINS RV - ROCHESTER 111 SOUTH MAIN STREET CHURCHVILLE, NEW YORK 14428

DWG # 6020 CA130 SHEET 6 OF 10