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Architecture Engineering Interior Design

STORMWATER POLLUTION PREVENTION PLAN
for
CONSTRUCTION ACTIVITIES

At

Reserve Road Subdivision
Reserve Road
Town of West Seneca, Erie County, New York

Prepared for

Nexgen Development II, LLC
(Owner/Operator)

500 Buffalo Road
East Aurora, New York 14052

Prepared by

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101 SCOPE

A. **PURPOSE:** Nexgen Development II, LLC (ND) has placed an emphasis on following the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity governing storm water discharges during construction, and in accordance with erosion control practices. The Contractor's participation in this program is mandatory and its non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines and civil penalties incurred by ND; and/or liquidated damages. This section provides a descriptive explanation of ND's Storm Water Pollution Prevention Program and required Contractor participation.

The Engineer of record for this project certifies that this SWPPP meets the requirements and is in compliance with the New York State Stormwater Management Design Manual and latest NYSDEC Phase II stormwater regulation requirements.

B. **SPDES General Permit for Stormwater Discharges from Construction Activity:** Regulations promulgated by the NYSDEC to regulate the discharge of storm water from construction activities on sites where more than one (1) acre of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the General Permit for Construction Activities for New York State. In order to use the General Permit, an electronic Notice of Intent (eNOI) form must be completed and submitted to the NYSDEC at least 5 business days prior to any earth-disturbing activities (this time frame may increase to 60 business days if a full review of the SWPPP is determined necessary by the NYSDEC) and a Storm Water Pollution Prevention Plan (SWPPP) for the site must be prepared and followed during the construction activities.

Approval from a regulated, traditional land use control MS4:

1. An **owner or operator** of a construction activity that is <u>not</u> subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the NYSDEC.

2. An **owner or operator** of a construction activity that is subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the MS4 prior to submitting the NOI to the NYSDEC. The **owner or operator** shall have the "MS4 SWPPP Acceptance" form signed by the principal executive officer or ranking elected official from the regulated, traditional land use control MS4, or by a duly authorized representative of that person, and then submit

that form along with the NOI to the address referenced under "Notice of Intent (NOI) Submittal".

C. **RESPONSIBILITIES OF THE CONTRACTOR:** The Contractor shall manage the discharge of storm water from the site in accordance with the NYSDEC General Permit for Construction Activities conditions and the following provisions of this section. The Operator shall be responsible for conducting the storm water management practices in accordance with the permit. The Contractor shall be responsible for providing **qualified inspector**s to conduct the inspections required by the SWPPP. The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to comply with the permit provisions. It shall be the responsibility of the Contractor to make any changes to the SWPPP necessary when the Contractor or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The Contractor should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

D. **NOTICE OF INTENT:** The Operator has petitioned the NYSDEC for coverage under the storm water discharges during construction at this site to be covered by the SPDES General Permit for Construction Activity for the State of New York. A Notice of Intent (NOI) for coverage under this permit has been filed by the Operator. The SWPPP must be prepared prior to submittal of the NOI form. The Operator will require the Contractor to be a co-permittee with the Operator. The Contractor will be required to post the NOI at the construction site along with any building permits.

E. **CONTRACTOR CERTIFICATION & TRAINING:** Proof of Training/Certification of the Contractor's Designated individual shall be kept on site at all times.

F. **REQUIREMENTS FOR THE GENERAL CONTRACTOR AND SUBCONTRACTOR(S):** The General Contractor and Subcontractor(s) shall sign the "Contractor's Certification Statement" (located in the Appendix of this report) verifying they have been instructed on how to comply with and fully understand the requirements of the SPDES General Permit for Construction Activity for the State of New York and the SWPPP. These certifications must be signed, by a responsible corporate officer or other party meeting the "Signatory Requirements" of the SPDES General Permit, on behalf of each entity, prior to the beginning of any construction activities.

G. **STORM WATER POLLUTION PREVENTION PROGRAM LOCATION REQUIREMENTS:** The SWPPP is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the project, shall be readily available upon request by the Operator's personnel or NYSDEC or any other agency with regulatory authority over storm water issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. A sign or other notice must be posted near the main entrance of the construction site which contains a completed NOI, the location of the SWPPP and the name and phone number of a contact person responsible for scheduling SWPPP viewing times, and any other state specific requirements.

H. **INSPECTIONS AND RECORD-KEEPING:**

A. **General Construction Site Inspection and Maintenance Requirements**

1. The **owner or operator** must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.

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

B. **Owner or operator Maintenance Inspection Requirements**

1. The **owner or operator** shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.

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

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the **owner or operator** can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date

have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. **Qualified inspector Inspection Requirements**

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

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

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

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

   a. The construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C of the General Permit and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

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

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

d. Construction activities located in the watersheds identified in Appendix D of the General Permit that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

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

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

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

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

d. For construction sites where **soil disturbance activities have been shut down with partial project completion**, the **qualified inspector** can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The **owner or operator** shall notify the Regional Office stormwater contact person or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity). in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the **owner or operator** shall have the **qualified inspector** perform a final inspection and certify that all disturbed areas have achieved final stabilization, and all temporary, structural erosion and

sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The **owner or operator** shall then submit the completed NOT form to the address in Part II.A.1 of the General Permit.

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

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

   a. Date and time of inspection;

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

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

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

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

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

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

h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

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

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

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

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

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

Record Retention - The **owner or operator** shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves final stabilization. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

I. **SWPPP MODIFICATIONS:** The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant to be a dynamic working guide that is to be kept current and amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants or when the plan proves to be ineffective in eliminating or significantly minimizing pollutant discharges. The Contractor's failure to modify or report deficiencies to the Operator will result in the Contractor being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

J. **FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE:** A site can be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover with a density of **85%** for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established and the facility no longer discharges storm water associated with construction activities and a Notice of Termination (NOT) form filed by the Operator(s) with the NYSDEC. The Operator's Project Manager must complete the NOT. The NOT must be signed by the signatory (or equivalent position) on the NOI and the **qualified inspector** (final stabilization and post-construction practices) and subsequently submitted to the appropriate agency. The MS4 must sign the NOT and may require a final inspection prior to permit closeout. The Operator's Project Manager must provide a completed copy of the NOT to the Contractor for inclusion in the SWPPP, which will then be optically scanned into the final SWPPP document as required. This filing terminates coverage under the General Permit and terminates the Contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. The **owner or operator** shall also have the **qualified inspector** perform a final site inspection prior to submitting the NOT to the Department. Final payment and/or the release of retainage will be withheld until all provisions of the SWPPP have been submitted, completed and accepted by the Operator.

102 PROJECT NAME AND LOCATION

Reserve Road Subdivision

Reserve Road

Town of West Seneca, County of Erie, New York

Easting: 194736

Northing: 4746657

Estimated Area of Site ≈ 16.80 acres

Estimated Area to be Disturbed by Construction Activities ≈ 16.80 acres

A general location map is included as Appendix A.

103 OPERATOR'S NAME AND ADDRESS

Nexgen Development II, LLC (Owner/Operator)

500 Buffalo Road

East Aurora, NY 14052

Contact Person: Mark Koller

Telephone: 716-250-8132

104 PROJECT DESCRIPTION

This project consists of the construction of a 44-lot residential subdivision located on the north side of Reserve Road in the Town of West Seneca. The existing 16.8-acre parcel is currently vacant consisting of wood and brush cover throughout. The subdivision will be served by two (2) new public roadways. Proposed Road "A" will be approximately 2,775 LF and will intersect Reserve Road. Proposed Road "B" will be approximately 315 LF and will connect Road "A" to John Alex Drive to the west. New utilities including street lighting, public water, public sanitary sewer, and storm sewer will be installed along the new roadways to serve all of the proposed lots. The site is currently zoned R-75.

Soil disturbing activities will include:

A. Construction of temporary construction exit points

B. Clearing & grubbing of the site within disturbance limits

C. Installation of the detention basins & bioretention areas including topsoil & seed

D. Installation of storm sewer pipes and inlets

E. Construction of utilities

F. Construction of curb and public roadways

G. Final grading & landscaping

H. Construction of houses

This project is owned by Nexgen Development, LLC and will be developed by the same. The work area consists of approximately 16.80 acres for which erosion and sediment controls have been developed and fully addressed in this written plan and the Erosion and Sediment Control Plans. See the construction documents for additional details

105 RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The initial runoff curve number for the pre-construction site is "CN" = 77. The post-construction runoff curve number for the site will be "CN" = 82. The site is 12.80 acres of which approximately 12.80 acres will be disturbed by construction activities.

The site is in Erie County, which receives an average of approximately 45 inches rainfall annually with the highest amounts of rainfall received in the months of May thru September. Annual snow for this area is approximately 120 inches.

106 WATERS

The runoff generated from this site will discharge to the drainage system on Reserve Road and then ultimately to the Cazenovia Creek.

107 INDIAN COUNTRY LANDS

This project is not located on Indian Lands.

108 ENDANGERED AND THREATENED SPECIES

No endangered or threatened species have been determined to be on the site.

109 CRITICAL HABITAT

See section 108 above

110 HISTORIC PLACES

The assessed property is shown on the NYSHPO map as an archeologically sensitive area. The NYSHPO clearance letter is included in the Appendix of this report.

111 WETLANDS AND/OR OTHER SURFACE WATERS

There are no wetlands or surface waters located on the project site.

112 EROSION AND SEDIMENT CONTROLS

112.1 STABILIZATION PRACTICES

Stabilization practices for this site include:

A. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed.

B. Use of stabilization method for all slopes having a slope greater than 1V:3H.

C. Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.

D. Mulching exposed areas.

E. Vegetation preservation in undisturbed areas.

F. Frequent watering to minimize wind erosion during construction.

a. **For sites where 5 acres or more are disturbed at any one time**: In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the New York Standards and Specifications for Erosion and Sediment Control.

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

c. The **owner or operator** shall install any additional measures needed to protect water quality.

112.2 STRUCTURAL PRACTICES

Structural practices for this site include:

A. Inlet protection using a method detailed in the Construction Documents.

B. Perimeter protection using temporary silt fence/silt sock or silt sock.

C. Outlet protection using rip-rap stone and end sections.

D. Stabilized Construction Entrance.

E. Temporary stone wash off areas.

F. Storm sewer, curb/gutter.

G. Sediment traps and basins.

112.3 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 construction entrance at location shown on the Demo & Erosion Control plan sheet.
B. Install perimeter silt fences in the locations shown on the Demo & Erosion Control plan sheet.
C. Clear & grub site.
D. Installation of detention basin to act as sediment basin.
E. Construct drainage inlets, storm sewer pipes and storm sewer manholes, as shown on the plans. Install temporary inlet protection at the locations of all new inlets.
F. Install all on-site utilities.
G. Finalize pavement subgrade preparation.
H. Install base material as required for pavement.
I. Install pavement for proposed road.
J. Commence site grading.
K. Disturbed areas of the site where construction activity has ceased for more than 14 days shall be temporarily seeded and watered.
L. Construction of individual homes.
M. Installation of individual utility connections.
N. Dust control.
O. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.
P. Carry out final grading and seeding and planting.
Q. Clean storm system following construction.
R. Remove silt fencing only after all paving is complete and exposed surfaces are stabilized.
S. Remove temporary construction entrances only prior to pavement construction in these areas.

Note: Sediment control storage during construction (traps & basins) during construction shall be 134 cy per acre of disturbance per NYSDEC requirements.

112.4 STORM WATER MANAGEMENT

The majority of the existing site sheet drains south towards Reserve Road. The site also sheet drains west toward John Alex Drive. Both of these flows eventually discharge to the existing storm sewer system along Reserve Road. A portion of the northern part of the site sheet flows north towards Camelot Drive.

The stormwater runoff from the proposed project area for this site will discharge to the existing stormwater system along Reserve Road. The southern detention pond will discharge to a proposed in-line catch basin along Reserve Road. The western detention pond will discharge to the detention outlet pipe for John Alex Drive which discharges south to Reserve Road.

The proposed hydrology for the development project area will consist of a combination of overland sheet flow and pipe channel flow. The storm sewer system for this site will consist of

6" - 24" HDPE pipes connected by a series of catch basins and backyard receivers. Stormwater runoff generated from the site will enter the pipe network and be conveyed to one of the two proposed detention basins. Stormwater will be discharged, at a controlled rate, from the basins. To meet NYSDEC water quality requirements, stormwater runoff discharges to bioretention areas prior to the detention ponds. The bioretention areas serve to meet WQv and RRv requirements.

The NYSDEC Stormwater Management Design Manual requires a five-step process for Stormwater Management Planning as outlined in Chapter 3. The five steps include:

1. Site planning to preserve natural features and reduce impervious cover.
    - All proposed lots meet or exceed minimums per Town Code requirements and minimum front, side and rear setbacks are met.
2. Calculation of Water Quality Volume (WQv=RRv) for site.
    - See Stormwater Drainage Calculations.
3. Incorporation of Green Infrastructure techniques and standard SMPs with Runoff Reduction Volume (RRv) capacity.
    - Bioretention areas and rooftop downspout disconnections were incorporated into the site design to provide required RRv for the development. See Stormwater Drainage Calculations.
4. Use of standard SMPs where applicable, to treat the portion of water quality volume not addressed by green infrastructure techniques and standard SMPs with RRv capacity.
    - The bioretention areas will serve to treat the remaining WQv for the site.
5. Design of volume and peak rate control practices where required.
    - See Stormwater Drainage Calculations.

The NYSDEC Stormwater Management Design Manual requires (5) five different criteria be considered when designing a stormwater management system. Those criteria are Water Quality, Runoff Reduction Volume, Channel Protection, Overbank Flooding and Extreme Storm Protection. Below is a summary of each item and how it is incorporated into this project.

Water Quality & Runoff Reduction Volume:

The NYSDEC requires reduction of the total water quality volume by green infrastructure techniques and SMPs to replicate pre-development hydrology. Bioretention areas were incorporated into the site layout to provide the required RRv for the contributing WQv runoff

area for the development. The required WQv = 12,447 cf. The bioretention areas will provide 9,973 cf RRv and treat the remaining 2,474 cf of WQv.

Channel Protection:

The NYSDEC requires that 24-Hour extended detention be provided for the proposed 1-year storm event. This volume is accommodated in basins 1 & 2.

Overbank Flooding:

The NYSDEC requires that the 10-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event. This volume and attenuation are accommodated in basins 1 & 2.

Extreme Storm Protection:

The NYSDEC requires that the 100-year proposed storm event be attenuated with detention and that the outlet be restricted to the 100-year existing storm event. This volume and attenuation are accommodated in basins 1 & 2.

NYSDEC Requirement:

The NYSDEC requires that the detention pond be designed to contain the 1-year, 10-year and the 100-year 24-hour design storms for post-development peak rates of runoff, while restricting the outflow rate of the post-development runoff rate to be less than the existing runoff rate.

Design Criteria

Storm pipes: 10-year storm

Detention:

- Comparison of the existing 1-year vs. the proposed 1-year runoff.
- Comparison of the existing 10-year vs. the proposed 10-year runoff.
- Comparison of the existing 100-year vs. the proposed 100-year runoff.

South Detention Pond:

Event	Prop Runoff (cfs)	Elevation (ft)	Storage (cf)
1-yr	1.62	738.16	2,639
10-yr	3.63	738.97	7,097
25-yr	4.38	739.50	10,375

100-yr	5.56	740.56	18,046

West Detention Pond:

Event	Prop Runoff (cfs)	Elevation (ft)	Storage (cf)
1-yr	0.81	738.21	6,850
10-yr	1.22	739.82	27,280
25-yr	1.39	740.70	41,620
100-yr	1.69	742.44	73,875

Total Site:

Event	Ex Runoff (cfs)	Prop Runoff (cfs)
1-yr	3.46	2.43
10-yr	12.96	4.85
25-yr	19.26	5.77
100-yr	32.81	6.67

113 OTHER CONTROLS

113.1 OFF-SITE VEHICLE TRACKING

A stabilized construction exit will be provided to help reduce vehicle tracking of sediments. Existing paved areas will remain as long as possible and will be used for vehicle wash areas and to further aid in the reduction of vehicle tracking of sediments. The paved streets adjacent to the site entrance shall be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material to/from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

113.2 EXCAVATION SPOIL MATERIALS

Excavation spoil materials are generated during the excavation of the development's building and utilities installation. These materials must be properly managed to prevent them from contributing to storm water discharges. The materials generated from the development of this project will be hauled off-site or stockpiled for re-use in the designated area which will have temporary erosion & sediment control measures installed as shown on the erosion & sediment control plan. Any removal from site will be done under the necessary permits required by the local governing agencies.

113.3 DUST CONTROL

Minimizing wind erosion and controlling dust will be accomplished by one or more of the following methods:

A. Frequent watering of excavation and fill areas.

B. Providing gravel or paving at entrance/exit drives, parking areas and transit paths.

113.4 WASTE DISPOSAL

If needed, all waste materials will be collected and stored in securely lidded metal dumpsters rented from an approved waste management company. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied when full and then hauled to a NYSDEC approved landfill for proper disposal. No construction waste will be buried on-site. All personnel will be instructed regarding the correct procedures for waste disposal.

113.5 SANITARY WASTE

If needed, portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

113.6 CONCRETE WASTE FROM CONCRETE TRUCKS

A. Emptying of excess unhardened concrete and/or washout from concrete delivery trucks will be allowed on the job site, but in either (1) specifically designated diked areas which have been prepared to prevent contact between concrete and/or washout and storm water which will be discharged from the site or (2) in locations where waste concrete will be poured into forms to make rip-rap or other useful concrete products.

B. Hardened waste concrete from the designated diked areas described above will be disposed of in accordance with applicable local and state regulations with regards to disposal of construction debris.

113.7 HAZARDOUS SUBSTANCES & HAZARDOUS WASTE

A. All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job superintendent, who will also be responsible for seeing these practices are followed. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such products are stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

B. The contractor will implement the Spill Prevention Control and Countermeasures (SPCC) Plan found within this SWPPP and will train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials of hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge shall be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job superintendent to properly train all personnel in the use of the SPCC plan.

C. Any spills of hazardous materials which are in excess of the Reportable Quantities as defined by the EPA regulations shall be immediately reported to the EPA National Response Center at 1-100-424-1102. A "Reportable Quantity Release Form" must be filled out.

D. In order to minimize the potential for a spill of hazardous materials to come in contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

5. All products will be stored in and used from the original container with the original product label.

6. All products will be used in strict compliance with instructions on the product label.

7. The disposal of excess or used products will be in strict compliance with instructions on the product label.

113.8 CONTAMINATED SOILS

A. Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations.

B. The job site superintendent will be responsible for seeing that these procedures are followed.

114 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The Contractor will obtain copies of any and all local and state regulations which are applicable to storm water management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the SPDES General Permit for Construction Activity for the State of New York, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

The SWPPP for this site development project requires regulated MS4 approval from the Town of West Seneca. All changes to the SWPPP must be approved by the Town of West Seneca prior to applying changes to the SWPPP in the field.

115 INSPECTION AND MAINTENANCE PROCEDURES

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

1. All control measures will be inspected by the owner/operator at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116)

2. All control measures will be inspected by a Qualified Professional at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116)

3. All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report.

4. Built up sediment will be removed from silt fence/silt sock when it has reached one-third the height of the fence.

5. Silt fence/silt socks will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

6. Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

7. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.

8. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

9. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of this personnel training will be kept on site with the SWPPP.

10. Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

11. Report to the NYSDEC within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event. The following events require 24-hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the NYSDEC in the permit to be reported within 24 hours. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

12. Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117 or 40 CFR 302) must be reported.

Upon completion of construction, the property owner is responsible for ensuring that the stormwater facilities are regularly inspected and maintained. Maintenance and inspection procedures are as follows.

1. On a quarterly basis and following significant rainfall events or snow-melts, perform the following:

    - Inspect catch basins, storm manholes, treatment structures, storm piping and stormwater pond for debris and accumulation of sediment.
    - Remove and properly dispose of any collected debris and sediment in accordance with applicable state, federal and local regulations.
    - Flush piping with water if necessary, to remove accumulated sediment.
    - Clean treatment structures, if any, per manufacturer's recommendations
    - Check all stone outfall structures for erosion and re-stone if necessary, to prevent further erosion.
    - Inspect grassed/landscaped areas for un-vegetated areas or areas with less than 85% healthy stand of grass and reseed and mulch as necessary. Water daily if reseeded in July and August.
    - A record of all inspections should be kept.

2. Maintain all lawn areas by regular mowing, including the grassed slopes of the stormwater pond and any grass swales. Any eroded areas shall be regarded, seeded and mulched immediately.

116 INSPECTION AND MAINTENANCE REPORT FORMS

Once installation of any required or optional erosion control device or measure has been implemented, inspections shall be performed by a Qualified Professional at least once every seven (7) calendar days. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to disturb greater than five (5) acres of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days. The owner and contractor shall obtain from the MS4 an approval for disturbing more than five-acres at any given time. For construction sites where active construction has been suspended, inspection frequency under the general permit can be reduced to once every 30 days, provided temporary stabilization measures have been applied to all disturbed areas. The forms found in this SWPPP shall be used by the inspectors to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the final stabilization of the site.

117 OTHER RECORD-KEEPING REQUIREMENTS

The Contractor shall keep the following records related to construction activities at the site:

- Dates when major grading activities occur and the areas which were graded
- Dates and details concerning the installation of structural controls
- Dates when construction activities cease in an area
- Dates when an area is stabilized, either temporarily or permanently
- Dates of rainfall and the amount of rainfall
- Dates and descriptions of the character and amount of any spills of hazardous materials
- Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

118 SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

118.1 MATERIALS COVERED

The following materials or substances are expected to be present onsite during construction:

- Concrete/Additives/Wastes
- Cleaning solvents
- Sanitary wastes
- Detergents
- Petroleum based products
- Paints/Solvents
- Pesticides
- Solid and construction wastes
- Acids
- Fertilizers
- Soil stabilization additives

118.2 MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The job site superintendent will be responsible for ensuring that these procedures are followed.

A. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

1. An effort will be made to store only enough products required to do the job.
2. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.
3. Products will be kept in their original containers with the original manufacturer's label in legible condition.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used up before disposing of the container.

6. Manufacturer's recommendations for proper use and disposal will be followed.

7. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

B. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

1. Products will be kept in original containers with the original labels in legible condition.

2. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.

3. If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

4. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

5. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

C. Hazardous Waste

All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site

superintendent, who will also be responsible for seeing that these practices are followed.

D. Product Specific Practices

The following product specific practices will be followed on the job site.

1. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on a plan by the contractor once the locations have been determined.

2. Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

3. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

4. Concrete Wastes

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or wash out and storm water which will be discharged from the site or (2)

in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

The hardened residue from the concrete wash out diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor. The job site superintendent will be responsible for seeing that these procedures are followed.

All concrete wash out areas will be located in an area where the likelihood of the area contributing to storm water discharges is negligible. If required, additional BMPs must be implemented to prevent concrete wastes from contributing to storm water discharges. The location of concrete wash out area(s) must be identified on a plan by the contractor once the locations have been determined. In addition, a standard detail on the construction of the concrete wash out shall be included on this plan.

E. Solid and Construction Wastes

All waste materials will be collected and stored in an appropriately covered container and/or securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in New York and the Town of West Seneca. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week or more often if necessary, and the trash will be hauled to a landfill approved by the NYSDEC. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers must be identified on a plan by the contractor once the locations have been determined.

F. Sanitary Wastes

Portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be

emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of sanitary waste units must be identified on a plan by the contractor once the locations have been determined.

G. Contaminated Soils

Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Materials Management Plan and in accordance with applicable state and federal regulations.

118.3 SPILL PREVENTION AND RESPONSE PROCEDURES

The Contractor will train all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job site superintendent to properly train all personnel in spill prevention and clean up procedures.

A. In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

B. In the event of a spill, the following procedures should be followed

1. All spills will be cleaned up immediately after discovery.

2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

3. The project manager and the Engineer of Record will be notified immediately.

Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-100-424-1102. From SWPPP-9 "Reportable Quantity Release Form" must be filled out.

4. If the spill exceeds a Reportable Quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases.

C. The job site superintendent will be the spill prevention and response coordinator. He will designate the individuals who will receive spill prevention and response training. These individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

119 CONTROL OF NON-STORM WATER DISCHARGES

Certain types of discharges are allowable under the NYSDEC SPDES General Permit for Construction Activity for the State of New York, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP will be strictly followed to ensure that no contamination of these non-storm water discharges takes place. The following allowable non-storm water discharges which may occur at the job site include:

A. Discharges from firefighting activities.

B. Fire hydrant flushing's (see note below)

C. Waters used to wash vehicles or control dust in order to minimize offsite sediment tracking.

D. Routine external building washdown which does not use detergents.

E. Pavement wash waters where spills or leaks of hazardous materials have not occurred or detergents have not been used.

F. Air conditioning condensate.

G. Springs or other uncontaminated groundwater, including dewatering ground water infiltration.

H. Foundation or footing drains where no contamination with process materials such as solvents is present.

Note: The Contractor shall discharge any super-chlorinated water from water distribution pipe disinfection activities into sanitary sewer system

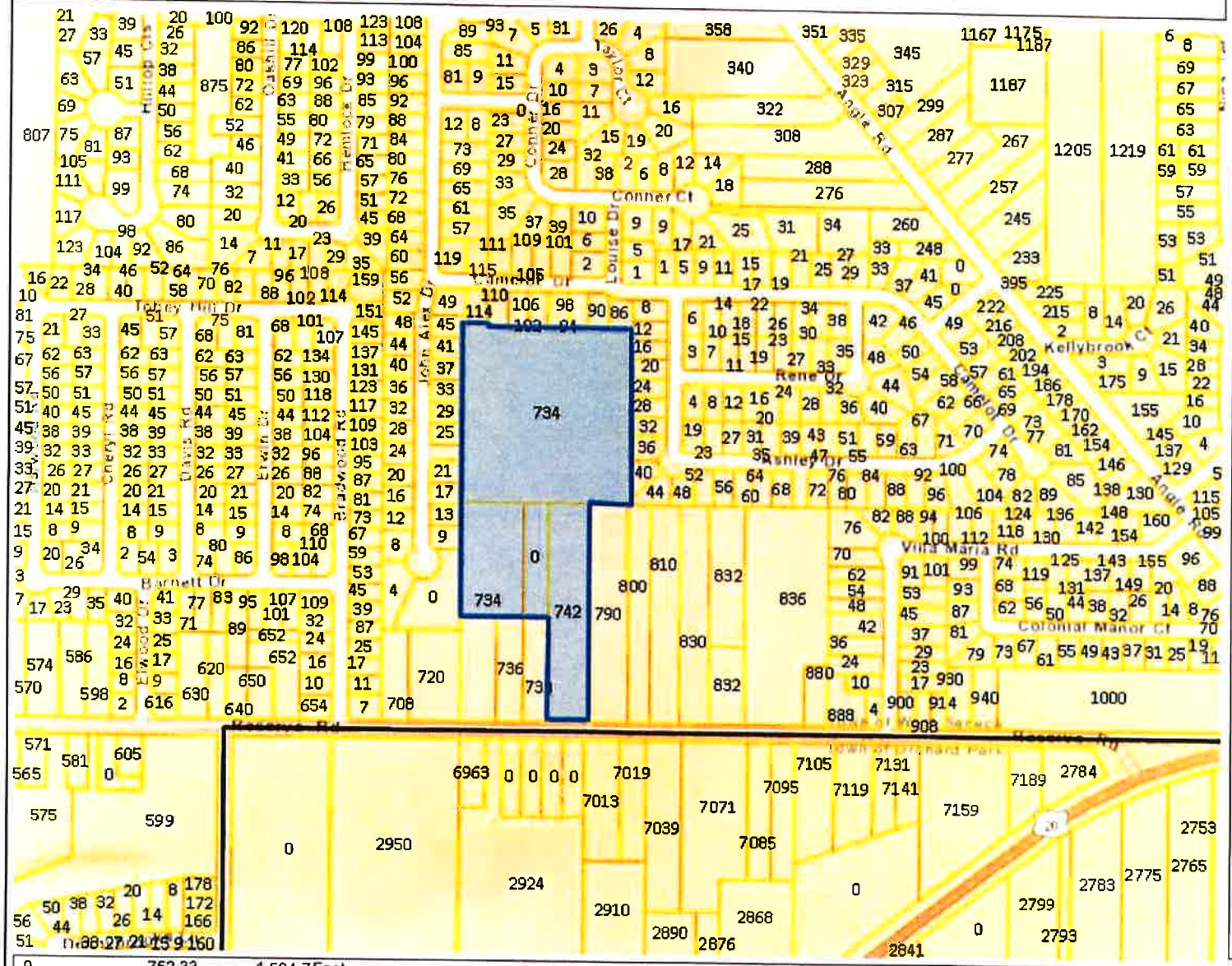
120 STORM WATER CONTROL FACILITY MAINTENANCE

The proposed bioretention areas shall be inspected and maintained per Appendix G of the NYSSMDM.

Appendix A

Site Location Map

Erie County On-Line Mapping Application



Legend

- Parcels
- Municipal Boundaries

0 752.33 1,504.7 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
THIS MAP IS NOT TO BE USED FOR NAVIGATION

ERIE COUNTY
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GIS

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

1: 9,028

Appendix B

NYSDEC Notice of Intent (NOI)

NOI for coverage under Stormwater General Permit for Construction Activity

Alternate ID Reserve Road Subdivision **Submission** HP7-GGVC-GRE36 **Revision** 1 **Form Version** 1.29

Review

This step allows you to review the form to confirm the form is populated completely and accurately, prior to certification and submission.

Please note: Any work you perform filling out a form will not be accessible by NYSDEC staff or the public until you actually submit the form in the 'Certify & Submit' step.

OWNER/OPERATOR INFORMATION

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
Nexgen Development II, LLC

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

Owner/Operator Contact Person First Name
Mark

Owner/Operator Mailing Address
500 Buffalo Road

City
East Aurora

State
NY

Zip
14052

Phone
716-250-8132

Email
mark@markkollercpa.com

Federal Tax ID

None Specified

PROJECT LOCATION

Project/Site Name
Reserve Road Subdivision

Street Address (Not P.O. Box)
Reserve Road

Side of Street
North

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Town of West Seneca

State
NY

Zip
14224

County
ERIE

DEC Region
9

Name of Nearest Cross Street
Bradwood Road

Distance to Nearest Cross Street (Feet)
850

Project In Relation to Cross Street
East

Tax Map Numbers Section-Block-Parcel
144.18-1-8

Tax Map Numbers
None Specified

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates

Latitude	Longitude
42.81348697572789	-78.73369688097915

PROJECT DETAILS

2. What is the nature of this project?
New Construction

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

Pre-Development Existing Landuse
Forest

Post-Development Future Land Use
Single Family Subdivision (Please answer 3a)

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
44

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)
16.8

Total Area to be Disturbed (acres)
16.8

Existing Impervious Area to be Disturbed (acres)
0.0

Future Impervious Area Within Disturbed Area (acres)
3.3

5. Do you plan to disturb more than 5 acres of soil at any one time?
Yes

---

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

A (%)
0

B (%)
0

C (%)
0

D (%)
100

7. Is this a phased project?
No

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

Start Date
9/1/2021

End Date
9/1/2022

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

9a. Type of waterbody identified in question 9?
Stream/Creek Off Site

Other Waterbody Type Off Site Description
None Specified

9b. If "wetland" was selected in 9A, how was the wetland identified?
None Specified

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

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

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?
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?
No

If Yes, what is the acreage to be disturbed?
None Specified

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

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

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

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

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

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

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

REQUIRED SWPPP COMPONENTS

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

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

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

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

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

SWPPP Preparer
Carmina Wood Morris, DPC

Contact Name (Last, Space, First)
Pandolfe, Anthony

Mailing Address
487 Main Street, Suite 500

City
Buffalo

State
NY

Zip
14203

Phone
716-842-3165

Email
apandolfe@cwm-ae.com

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Scan the signed form
4) Upload the scanned document

Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification

swpppcert signed.pdf

Comment
None Specified

EROSION & SEDIMENT CONTROL CRITERIA

25. Has a construction sequence schedule for the planned management practices been prepared?
Yes

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

Temporary Structural
Dust Control
Stabilized Construction Entrance
Silt Fence
Sediment Basin
Sediment Traps
Storm Drain Inlet Protection

Biotechnical
None

Vegetative Measures
Seeding
Sodding
Topsoiling

Permanent Structural
Land Grading
Rock Outlet Protection

Other
None Specified

POST-CONSTRUCTION CRITERIA

*** 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.
Building Footprint Reduction
Preservation of Buffers

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).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
0.286

29. Post-construction SMP Identification

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing 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 the Post-Construction SMP Identification section 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.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
0.229

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
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)] (acre-feet)
0.047

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

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; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section 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. (acre-feet)
0.057

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

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
0.286

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

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

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

CPv Required (acre-feet)
0.167

CPv Provided (acre-feet)
0.167

36a. The need to provide channel protection has been waived because:
None Specified

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

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
12.96

Post-Development (CFS)
3.87

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
32.81

Post-Development (CFS)
6.67

37a. The need to meet the Qp and Qf criteria has been waived because:
None Specified

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

If Yes, Identify the entity responsible for the long term Operation and Maintenance
Nexgen Development II, 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.
Site limitations include soils with slow infiltration rates (Type D).

POST-CONSTRUCTION SMP IDENTIFICATION

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs

Identify the Post-construction SMPs to be used by providing 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.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
None Specified

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
None Specified

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
None Specified

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
None Specified

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
None Specified

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
None Specified

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)
None Specified

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
None Specified

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
None Specified

Total Contributing Impervious Acres for Rain Garden (RR-6)
None Specified

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
None Specified

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
None Specified

Total Contributing Impervious Acres for Porous Pavement (RR-9)
None Specified

Total Contributing Impervious Acres for Green Roof (RR-10)
None Specified

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
None Specified

Total Contributing Impervious Acres for Infiltration Basin (I-2)
None Specified

Total Contributing Impervious Acres for Dry Well (I-3)
None Specified

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
None Specified

Total Contributing Impervious Acres for Bioretention (F-5)
3.3

Total Contributing Impervious Acres for Dry Swale (O-1)
None Specified

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
None Specified

Total Contributing Impervious Acres for Wet Pond (P-2)
None Specified

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
None Specified

Total Contributing Impervious Acres for Multiple Pond System (P-4)
None Specified

Total Contributing Impervious Acres for Pocket Pond (P-5)
None Specified

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
None Specified

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
None Specified

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
None Specified

Total Contributing Impervious Acres for Organic Filter (F-4)
None Specified

Total Contributing Impervious Acres for Shallow Wetland (W-1)
None Specified

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
None Specified

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
None Specified

Total Contributing Impervious Acres for Pocket Wetland (W-4)
None Specified

Total Contributing Impervious Acres for Wet Swale (O-2)
None Specified

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

Total Contributing Impervious Area for Hydrodynamic
None Specified

Total Contributing Impervious Area for Wet Vault
None Specified

Total Contributing Impervious Area for Media Filter
None Specified

"Other" Alternative SMP?
None Specified

Total Contributing Impervious Area for "Other"
None Specified

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

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.

Manufacturer of Alternative SMP
None Specified

Name of Alternative SMP
None Specified

OTHER PERMITS

40. Identify other DEC permits, existing and new, that are required for this project/facility.
None

If SPDES Multi-Sector GP, then give permit ID
None Specified

If Other, then identify
None Specified

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
None Specified

42. 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.
None Specified

MS4 SWPPP ACCEPTANCE

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
Yes - Please attach the MS4 Acceptance form below

If No, skip question 44

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

MS4 SWPPP Acceptance Form Download

Download form from the link below. Complete, sign, and upload.

MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload

No files uploaded

Comment
None Specified

OWNER/OPERATOR CERTIFICATION

The owner/operator must download, sign, and upload the certification form in order to complete this application.

Owner/Operator Certification Form Download

Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.

Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form

ownercert signed.pdf

Comment
None Specified

Appendix C

MS4 SWPPP Acceptance Form

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

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

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Nexgen Development II, LLC
2. Contact Person:	Mark Koller
3. Street Address:	500 Buffalo Road
4. City/State/Zip:	East Aurora, NY 14052
II. Project Site Information	
5. Project/Site Name:	Reserve Road Subdivision
6. Street Address:	Reserve Road
7. City/State/Zip:	West Seneca, NY 14224
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)

Appendix D

Engineer's Report

Carmina • Wood • Morris DPC

487 Main Street Suite 500 Buffalo, New York 14203 P: 716.842.3165 F: 716.842.0263 W: cwm-ae.com

Architecture Engineering Interior Design

Engineer's Report

for

Reserve Road Subdivision

Town of West Seneca, Erie County, New York

Prepared by

Carmina Wood Morris, P.C.

487 Main Street
Buffalo, New York 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

March 2021
Revised July 2021

Table of Contents

Written Engineer's Report

Appendices

Section 1 – Location & Description

This project consists of the construction of a 44-lot residential subdivision located on the north side of Reserve Road in the Town of West Seneca. The existing 16.8-acre parcel is currently vacant consisting of wood and brush cover throughout. The subdivision will be served by two (2) new public roadways. Proposed Road "A" will be approximately 2,775 LF and will intersect Reserve Road. Proposed Road "B" will be approximately 315 LF and will connect Road "A" to John Alex Drive to the west. New utilities including street lighting, public water, public sanitary sewer, and storm sewer will be installed along the new roadways to serve all of the proposed lots. The site is currently zoned R-75.

See Appendix A for Site Location Map.

Section 2 – Water System

An existing 8" ECWA public water main is located along the north side of Reserve Road and will be the source of water for the project. Approximately 3,090 LF of new 8" AWWA C-900 PVC water main will be installed along the new public roadway. The new main will tap the 8" Reserve Road main. New ¾" Type "k" copper services will tap the new 8" main and be installed for each lot. New fire hydrants will be installed on all roadways with a maximum spacing not to exceed 600 feet. A total of four (4) new hydrants will be installed onsite.

The pipe material for the new mains, hydrant installation and all fittings, valves, etc. will be in accordance with Town of West Seneca, ECWA and ECDOH standards. The proposed mains, hydrant branches and hydrants will be installed and tested in accordance with ECWA and ECDOH Standard Specifications. Inspection and certification of the installation of the water main will be done by the Town of West Seneca and ECWA. It is the responsibility of the contractor to engage a laboratory for collection and testing of water samples. All proposed water mains will maintain physical separation from other utilities as specified per Ten States Standards.

See Appendix B for Sanitary Sewer & Water Calculations.

Section 3 – Sanitary Sewer Service

An existing 8" Town of West Seneca public sanitary sewer is located on the north side of Reserve Road. This sewer will provide sanitary sewage service for this project. A new in-line manhole will be installed to connect the proposed sanitary sewer to the existing sewer along Reserve Road. Approximately 2,600 LF of new 8" SDR-35 PVC sewer main will be installed along the proposed roadways to serve the proposed lots. New 6" PVC sanitary sewer laterals for each proposed lot will be installed. These laterals will be WYE connected to the new main and terminate at the ROW for the proposed lots.

Sanitary Sewer Summary:
44, 4-Bedroom Homes
* use 100 gpd/bedroom
Q = 44 homes x 4-bedrooms/home x 100 gpd/bedroom = 17,600 gpd (avg)
Peaking Factor = 4.17
Q = 17,600 gpd x 4.17 = 73,353 gpd (peak)

Since the expected daily flow is greater than 2,500 gpd, a downstream sanitary sewer capacity analysis has been performed and necessary I&I offset plan will be coordinated.

The hydraulic loading rates per "Design Standard for Wastewater Treatment Works" 2014, NYSDEC.

See Appendix B for Sanitary Sewer & Water Calculations.

See Appendix C for Downstream Sewer Capacity Analysis Report

Section 4 – Storm Sewer Service

The majority of the existing site sheet drains south towards Reserve Road. The site also sheet drains west toward John Alex Drive. Both of these flows eventually discharge to the existing storm sewer system along Reserve Road. A portion of the northern part of the site sheet flows north towards Camelot Drive.

The stormwater runoff from the proposed project area for this site will discharge to the existing stormwater system along Reserve Road. The southern detention pond will discharge to a proposed in-line catch basin along Reserve Road. The western detention pond will discharge to the detention outlet pipe for John Alex Drive which discharges south to Reserve Road.

The proposed hydrology for the development project area will consist of a combination of overland sheet flow and pipe channel flow. The storm sewer system for this site will consist of 6" – 24" HDPE pipes connected by a series of catch basins and backyard receivers. Stormwater runoff generated from the site will enter the pipe network and be conveyed to one of the two proposed detention basins. Stormwater will be discharged, at a controlled rate, from the basins. To meet NYSDEC water quality requirements, stormwater runoff discharges to bioretention areas prior to the detention ponds. The bioretention areas serve to meet WQv and RRv requirements.

NYSDEC Requirement:
The NYSDEC requires that the detention pond be designed to contain the 1-year, 10-year and the 100-year 24-hour design storms for post-development peak rates of runoff, while restricting the outflow rate of the post-development runoff rate to be less than the existing runoff rate.

Town of West Seneca Requirement:
The Town of West Seneca requires reduction of the 25-year post-development flow rate to 10-year pre-development flow rate.

Design Criteria
Storm pipes: 10-year storm
Detention: Comparison of the existing 1-year vs. the proposed 1-year runoff.
Comparison of the existing 10-year vs. the proposed 10-year runoff.
Comparison of the existing 100-year vs. the proposed 100-year runoff.

South Detention Pond:

Event	Prop Runoff (cfs)	Elevation (ft)	Storage (cf)
1-yr	1.62	738.16	2,639
10-yr	3.63	738.97	7,097
25-yr	4.38	739.50	10,375
100-yr	5.56	740.56	18,046

West Detention Pond:

Event	Prop Runoff (cfs)	Elevation (ft)	Storage (cf)
1-yr	0.81	738.21	6,850
10-yr	1.22	739.82	27,280
25-yr	1.39	740.70	41,620
100-yr	1.69	742.44	73,875

Total Site:

Event	Ex Runoff (cfs)	Prop Runoff (cfs)
1-yr	3.46	2.43
10-yr	12.96	4.85
25-yr	19.26	5.77
100-yr	32.81	6.67

See Appendix D for storm water drainage calculations.

Section 5 – Erosion Control Summary

Stabilization Practices

Stabilization practices for this site include:

A. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed.
B. Use of stabilization fabric for all slopes having a slope greater than 1V:3H.
C. Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.
D. Mulching exposed areas.
E. Frequent watering to minimize wind erosion during construction.

Structural Practices

Structural practices for this site include:

A. Inlet protection using a method detailed in the Construction Documents
B. Perimeter protection using temporary silt fence
C. Outlet protection using rip-rap stone and end-sections
D. Stabilized Construction Entrance
E. Temporary stone wash off areas
F. Storm sewer, curb/gutter
G. Sediment trap and basin

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 construction entrance at location shown on the Demo & Erosion Control plan sheet.
B. Install perimeter silt fences in the locations shown on the Demo & Erosion Control plan sheet.
C. Clear & grub site.
D. Installation of detention basin to act as sediment basin.
E. Construct drainage inlets, storm sewer pipes and storm sewer manholes, as shown on the plans. Install temporary inlet protection at the locations of all new inlets.
F. Install all on-site utilities.
G. Finalize pavement subgrade preparation.
H. Install base material as required for pavement.
I. Install pavement for proposed road.
J. Commence site grading.

K. Disturbed areas of the site where construction activity has ceased for more than 14 days shall be temporarily seeded and watered.
L. Construction of individual homes.
M. Installation of individual utility connections.
N. Dust control.
O. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.
P. Carry out final grading and seeding and planting.
Q. Clean storm system following construction.
R. Remove silt fencing only after all paving is complete and exposed surfaces are stabilized.
S. Remove temporary construction entrances only prior to pavement construction in these areas.

Section 6 – Geotechnical Items

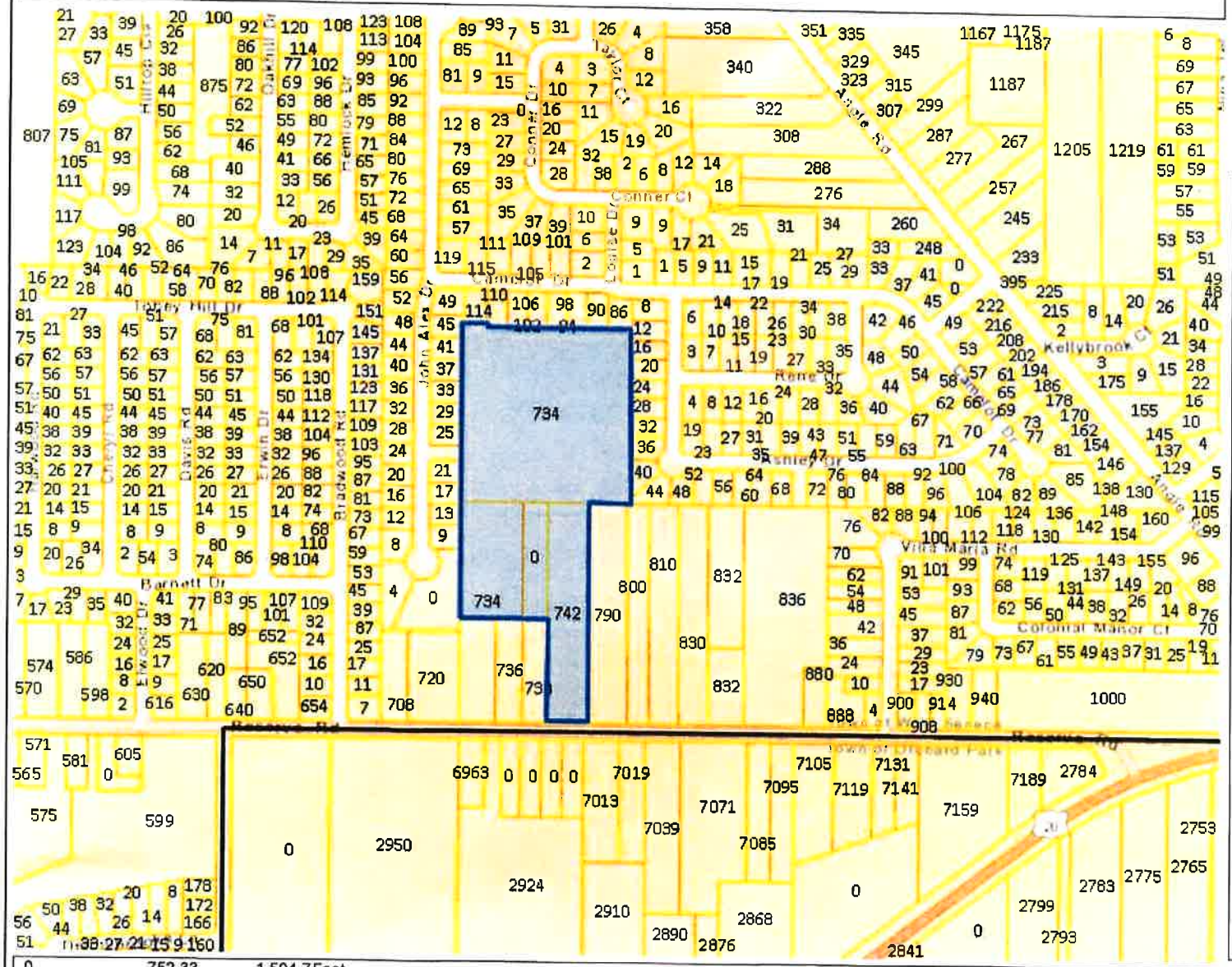
According to the USDA Web Soil Survey, the onsite soil is made up of Remsen silty clay loam (64%) and Canadice silt loam (36%). These soils are categorized under hydrologic soil group D and will have a slow infiltration rate when thoroughly wet.

See Appendix E for Soil Information.

Appendix A

Site Location Map

Erie County On-Line Mapping Application



Legend

- Parcels
- Municipal Boundaries

0 752.33 1,504.7 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
THIS MAP IS NOT TO BE USED FOR NAVIGATION

ERIE COUNTY
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GIS

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

1: 9,028

Appendix B

Sanitary Sewer & Water Demand Calculations

CARMINA WOOD MORRIS, D.P.C.
487 MAIN STREET, SUITE 500
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 18.077 Date: 3/25/2021
Project Name: Reserve Road Subdivision
Project Address: Reserve Road - Town of West Seneca
Subject: Sanitary Sewage Calculations
Sheet: 1 of 1

Sanitary Sewage Demand Calculations:

Sheridan Drive Subdivision

400 gpd/home x 44 lots = 17,600 gpd *use 400 gallons per day per 4 bedroom home

Total Site Sanitary Demand: = 17,600 gpd Average

* The hydraulic loading rate is per the 10 States Standards and assumes 4 persons per house

Find Peak Sanitary Demand:

Peaking Factor based on Population:
Total demand: 17,600 gpd / 100 gpcd = 176 per capita

Population (P) = 176 people

Peaking Factor : $(18 + \sqrt{P}) / (4 + \sqrt{P})$ where P is in thousands

Peaking Factor = 4.17

Peak Sanitary Demand = 17,600 X 4.17 = 73,353 gpd
= 0.073 MGD
= 0.113 cfs

Required Infiltration and Inflow Mitigation:

Peak Sanitary Flow = 73,353 gpd = 50.9 gpm

4:1 offset flow per NYSDEC requirements = 50.9 x 4 = 203.8 gpm req'd

Mitigation Credit = 30 gpm / lateral

Laterals to be replaced* = 6.8 laterals
= **7 laterals** ***(or other mitigation as identified by the Town)**

CARMINA WOOD MORRIS, D.P.C.
487 MAIN STREET, SUITE 600
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 18.077 Date: 3/25/2021
Project Name: Reserve Road Subdivision
Project Address: Reserve Road - Town of Orchard Park
Subject: Domestic Water Demand Calcs
Sheet: 1 of 1

Water Demand Calculations (domestic):

Proposed Subdivision:

Q = 3 gpm/unit x 44 units = 132 gpm ECDOH Requirement

Water Demand Calculations (fire):

Q = 1000 gpm * per ISO Guidelines, 1 family dwelling, 11'-30' apart

Elev. at ex. residual hydrant (K14F14) = 737 ft

Static pressure at ex. hydrant (K14F16) = 65 psi

El. @ Road tap = 741 ft

Δ elev ex. hydrant (K14F14) to Road tap = 4 ft = 1.7 psi (positive is decrease in pressure from static)
(negative is increase in pressure from static)

Static pressure at Road tap = 63.3 psi

El. @ furthest pro. hydrant = 745 ft

Δ elev Road tap to furthest hydrant = 4 ft = 1.7 psi (positive is decrease in pressure from static)
(negative is increase in pressure from static)

Find residual at furthest hydrant using domestic flow:

Headlosses:

Q_{peak} = 132.0 gpm
Pipe = 8 inch PVC C = 140
Length = 1,990 LF (approx. distance from tap to furthest pro. hydrant)

$$H_L = \frac{10.44\ L\ Q^{1.85}}{C^{1.85}\ D^{4.866}} = \frac{10.44(1990)(78)^{1.85}}{(140)^{1.85}\ (8)^{4.866}} = 0.75 \text{ ft} = 0.3 \text{ psi}$$

Residual pressure at furthest pro. Hydrant = Static pressure at Road tap - headloss - Δ elev

= 61.2 psi

Find residual at furthest hydrant using total flow:

Total flow = fire flow + peak domestic flow = 1132 gpm

Headlosses:

Q_{peak} = 1132 gpm
Pipe = 8 inch PVC C = 140
Length = 1,990 LF (approx. distance from tap to furthest pro. hydrant)

$$H_L = \frac{10.44\ L\ Q^{1.85}}{C^{1.85}\ D^{4.866}} = \frac{10.44(1990)(1078)^{1.85}}{(140)^{1.85}\ (8)^{4.866}} = 40.03 \text{ ft} = 17.3 \text{ psi}$$

Residual pressure at furthest pro. Hydrant = Static pressure at Road "A" tap - headloss - Δ elev
= 48.3 - 1.7 - 17.3
= 44.2 psi

Appendix C

Downstream Sewer Capacity Analysis Report

Carmina • Wood • Morris DPC

487 Main Street Suite 500 Buffalo, New York 14203 P: 716.842.3165 F: 716.842.0263 W: cwm-ae.com

Architecture Engineering Interior Design

Reserve Road Subdivision

Reserve Road, West Seneca, NY

Downstream Sewer Capacity Analysis Report

Project Description

The project is development of a 16.8 +/- acre wooded, vacant lot located on the north side of Reserve Road in the Town of West Seneca. The site will be subdivided in to 44 single family lots serviced by two new public roadways. Construction will also include storm water management, lighting and utility improvements.

Node 1 – 736 Reserve Road (12"):

Existing Peak Flow measured (wet weather event)	=	1.098 cfs (0.591 mgd)*
Existing Peak Flow measured (overall)	=	1.167 cfs (0.628 mgd)*
Proposed subdivision peak flow	=	0.113 cfs **
Proposed Peak Flow	=	1.28 cfs

Capacity of existing 12" PVC pipe @ 0.2% = 1.883 cfs

Conclusion: The proposed peak flow is less than the capacity of the 12" pipe, therefore, there is sufficient capacity. At no time during the monitoring did the flow depth exceed the pipe diameter at Node 1 of the downstream monitoring points.

Node 2 – Beechwood Drive (15"):

Existing Peak Flow measured (wet weather event)	=	4.658 cfs (2.507 mgd)*
Existing Peak Flow measured (overall)	=	5.218 cfs (2.808 mgd)*
Proposed Fox Trace East peak flow	=	0.113 cfs **
Proposed Peak Flow	=	5.331 cfs

Capacity of existing 15" PVC pipe @ 1.5% = 9.349 cfs

Conclusion: The proposed peak flow is less than the capacity of the 15" pipe, therefore there is sufficient capacity. At no time during the monitoring did the flow depth exceed the pipe diameter at Node 2 of the downstream monitoring points during the rain events monitored.

Notes:

Pipe slopes, sizes and materials provided by Erie County Division of Sewerage Management

* Converted from measurements in TECSmith report dated 5/21/20

** See Sanitary Sewage Demand Calculations

Node 3 – Willowdale Drive (18"):

Existing Peak Flow measured (wet weather event)	=	7.327 cfs (3.943 mgd)*
Existing Peak Flow measured (overall)	=	7.418 cfs (3.992 mgd)*
Proposed Fox Trace East peak flow	=	0.113 cfs **
Proposed Peak Flow	=	7.531 cfs

Capacity of existing 18" PVC pipe @ 0.4% = 7.851 cfs

Conclusion: The proposed peak flow is less than the capacity of the 18" pipe, therefore there is sufficient capacity. Three times during the monitoring period the flow depth exceeded the pipe diameter at Node 3, but at no time did the flow at any point slow or stall which would have caused a backup or flooding at the manhole. I/I mitigation shall be required for the contribution proposed for this project.

Notes:

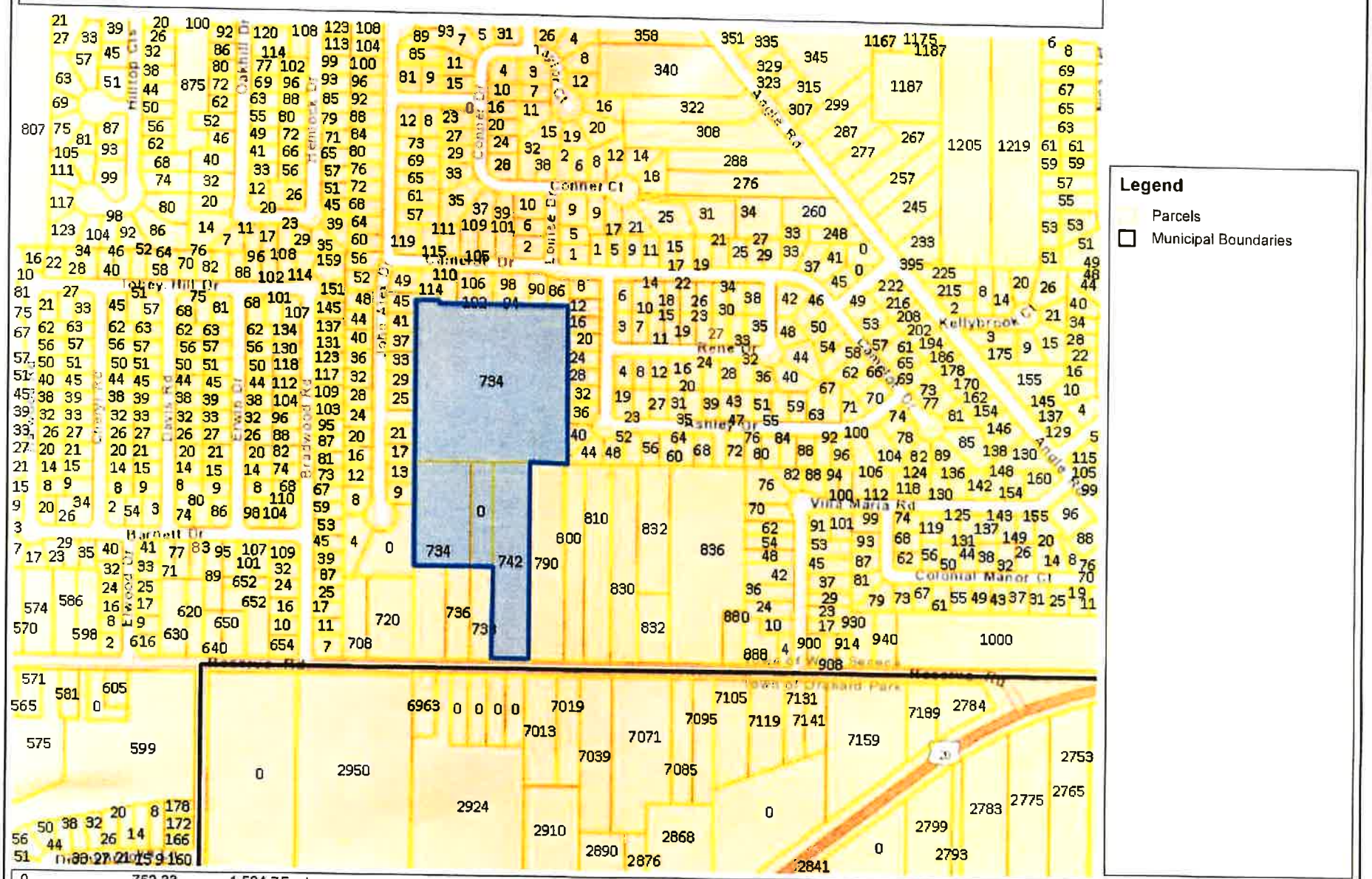
Pipe slopes, sizes and materials provided by Erie County Division of Sewerage Management

* Converted from measurements in TECSmith report dated 5/21/20

** See Sanitary Sewage Demand Calculations

Location Map

Erie County On-Line Mapping Application



0 752.33 1,504.7 Feet

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Sanitary Demand Calculations

CARMINA WOOD MORRIS, D.P.C.
487 MAIN STREET, SUITE 500
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Project No.: 18.077 Date: 3/25/2021
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Sheet: 1 of 1

Sanitary Sewage Demand Calculations:

Sheridan Drive Subdivision

400 gpd/home x 44 lots = 17,600 gpd *use 400 gallons per day per 4 bedroom home

Total Site Sanitary Demand: = 17,600 gpd Average

* The hydraulic loading rate is per the 10 States Standards and assumes 4 persons per house

Find Peak Sanitary Demand:

Peaking Factor based on Population:
Total demand: 17,600 gpd / 100 gpcd = 176 per capita

Population (P) = 176 people

Peaking Factor : $(18 + \sqrt{P}) / (4 + \sqrt{P})$ where P is in thousands

Peaking Factor = 4.17

Peak Sanitary Demand = 17,600 X 4.17 = 73,353 gpd
= 0.073 MGD
= 0.113 cfs

Required Infiltration and Inflow Mitigation:

Peak Sanitary Flow = 73,353 gpd = 50.9 gpm

4:1 offset flow per NYSDEC requirements = 50.9 x 4 = 203.8 gpm req'd

Mitigation Credit = 30 gpm / lateral

Laterals to be replaced* = 6.8 laterals
= **7 laterals** ***(or other mitigation as identified by the Town)**

TECSmith Monitoring Report 5/21/20

TECsmith

TECSMITH, Inc.
PO Box 383
Elma, New York 14059-0383
Tel: 716-462-0382
Fax: 716-687-1418

Date: May 21, 2020

SANITARY SEWER FLOW CAPACITY STUDY – Summary Review

Prepared For: Town of West Seneca Capacity Analysis

Anthony J. Pandolfe, PE
Christopher Wood
487 Main Street, Suite 600
Buffalo, New York 14203
P: (716) 842-3165
F: (716) 842-0263

Project Name: Town of West Seneca Capacity Analysis

Flow Monitoring Period: April 23, 2020 to May 21, 2020

Rain Events (> 0.5-inches) Monitored: April 26(0.64") and April 30 (0.62")

Number of Monitoring Nodes: Three (3) downstream manholes

Node Locations and Descriptions:

- Node 1 736 Reserve Rd (12")
- Node 2 736 Reserve Rd (12")
- Node 3 Willowdale Dr (18")

Summary Conclusion:

Based on the data presented in this report, specifically the flow depth measurements recorded (see graphs below)

- At no time did the flow depth exceed pipe diameter at Node 1 and Node 2 of the downstream monitoring points during the rain events monitored.
- Three times the flow depth exceed pipe diameter at Node 3 of the downstream monitoring points during the rain events monitored.

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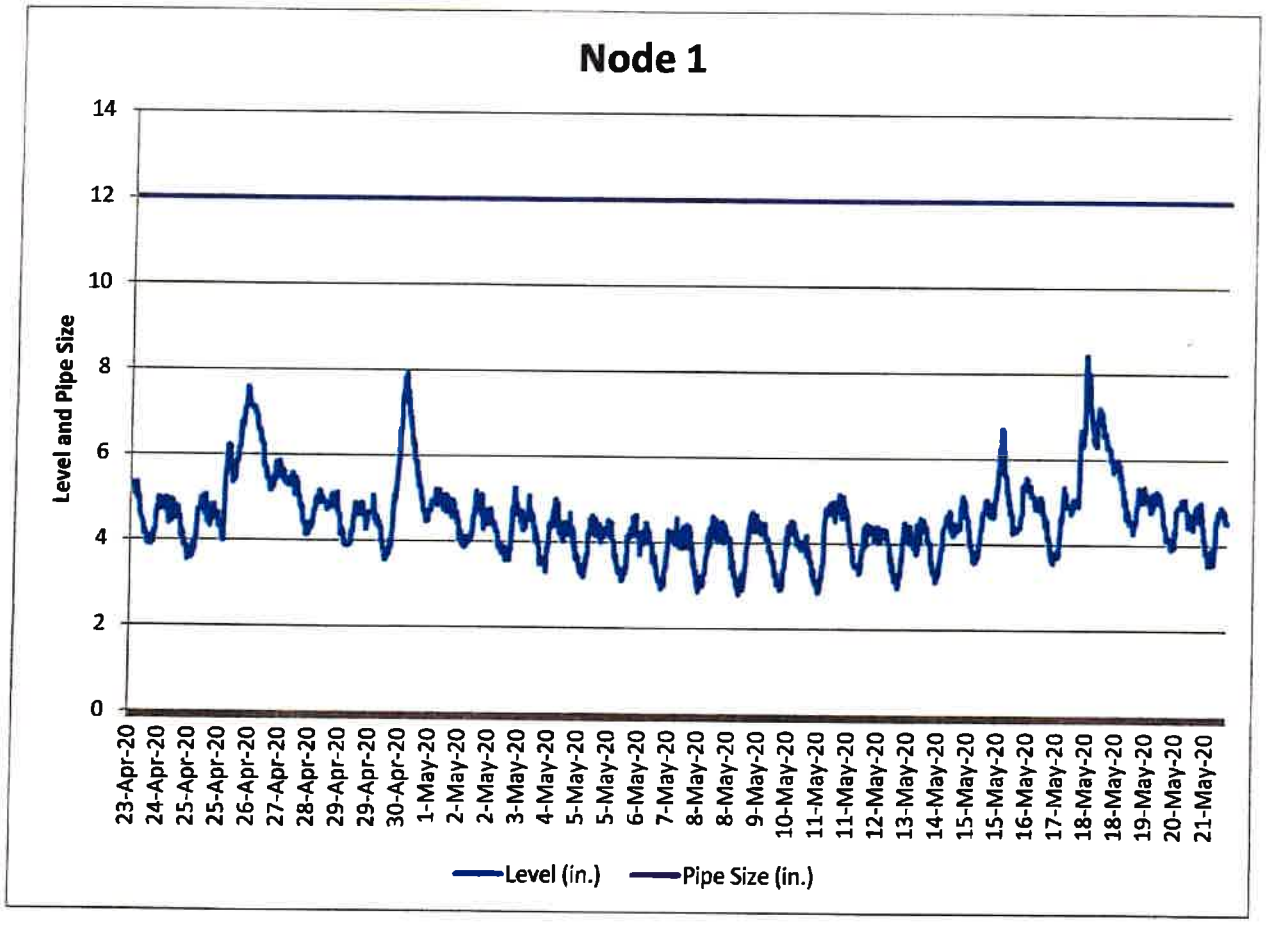
Depth of Flow Capacity Summary:

Depth of flow capacity is based on diameter of pipe. See graphs below.

- At no time during the monitoring period did depth of flow exceed pipe diameter at Node 1.



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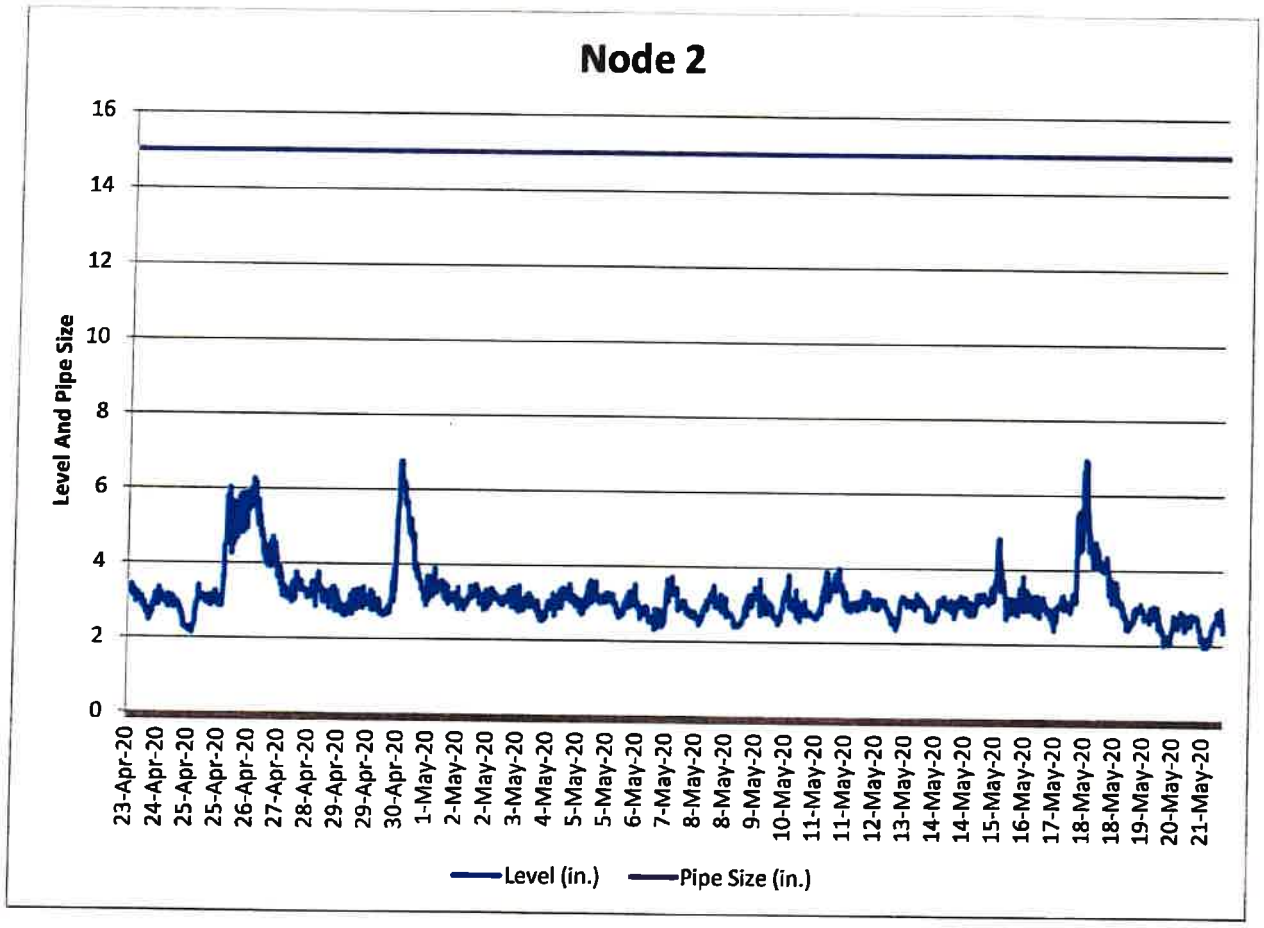
- At no time during the monitoring period did depth of flow exceed pipe diameter at Node 2.



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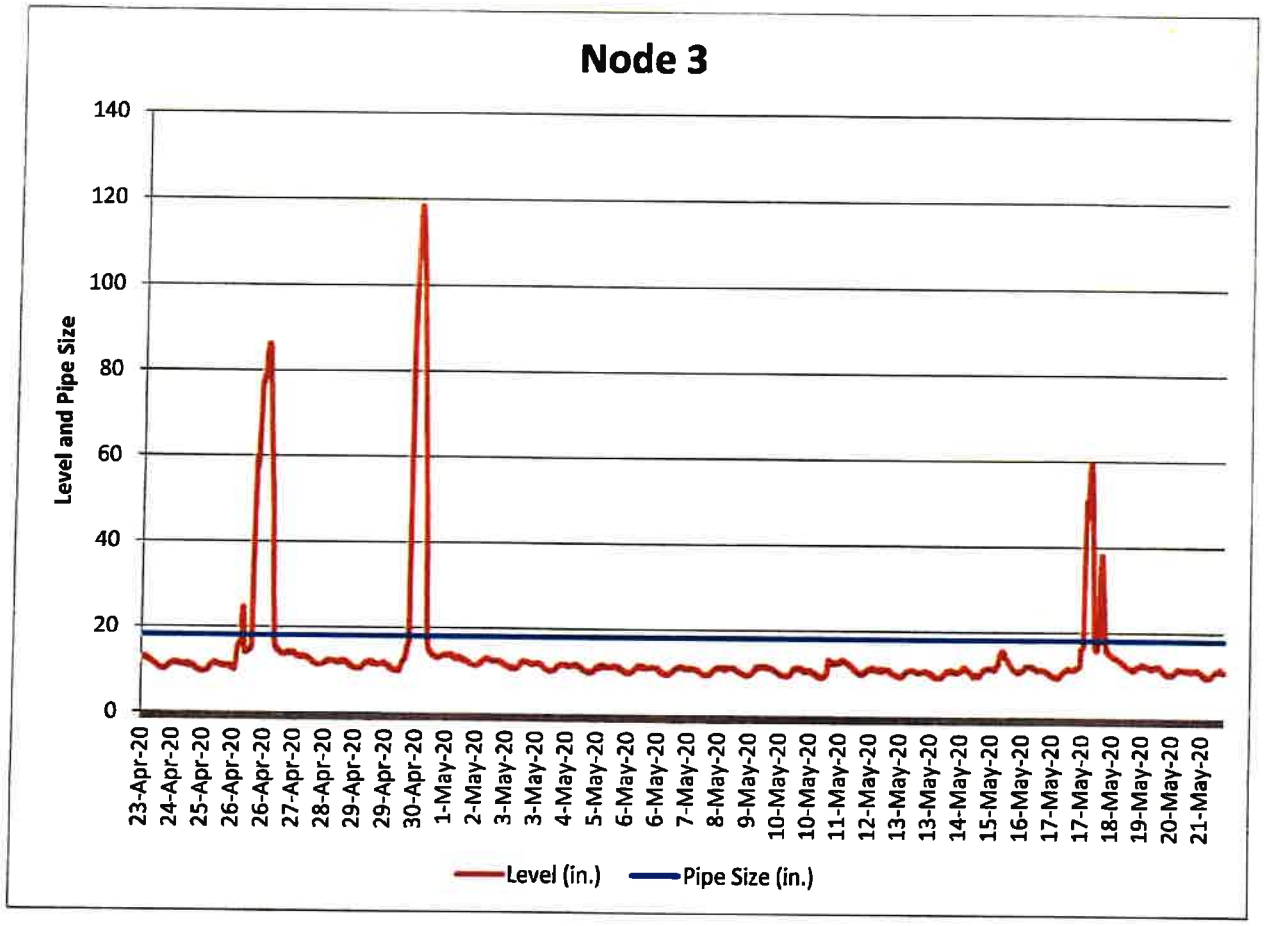
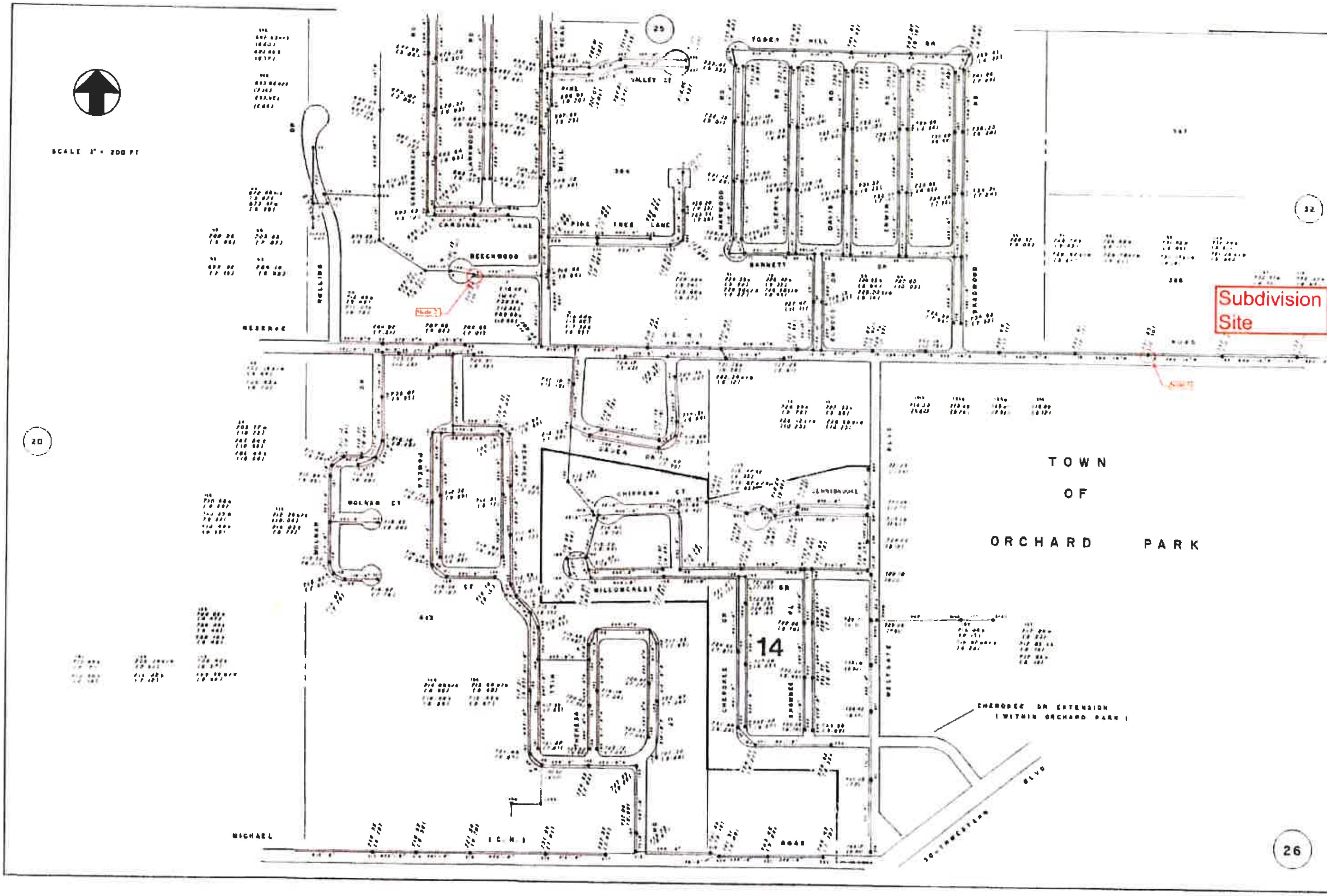
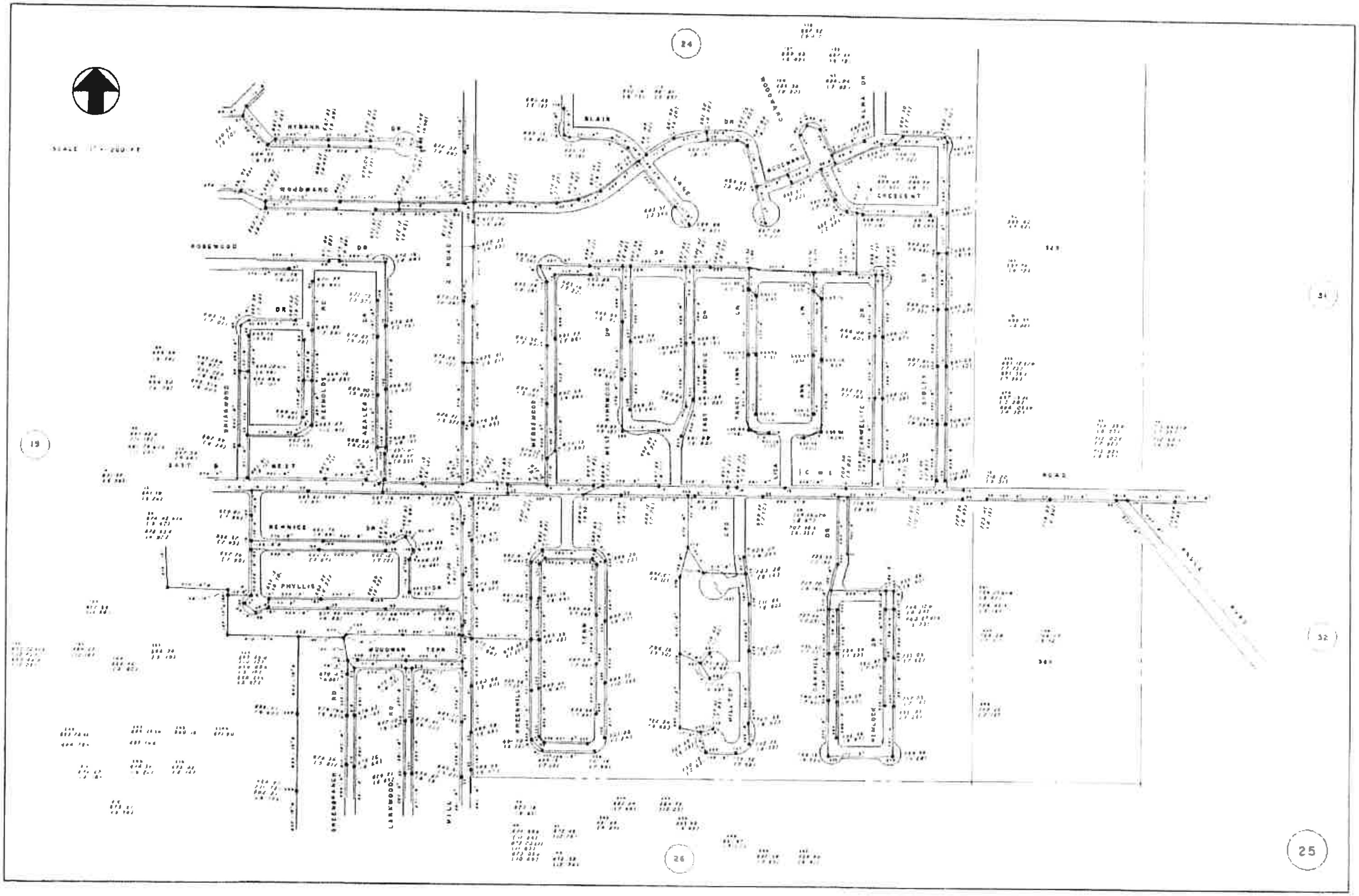
- Three times during the monitoring period did depth of flow exceed pipe diameter at Node 3.



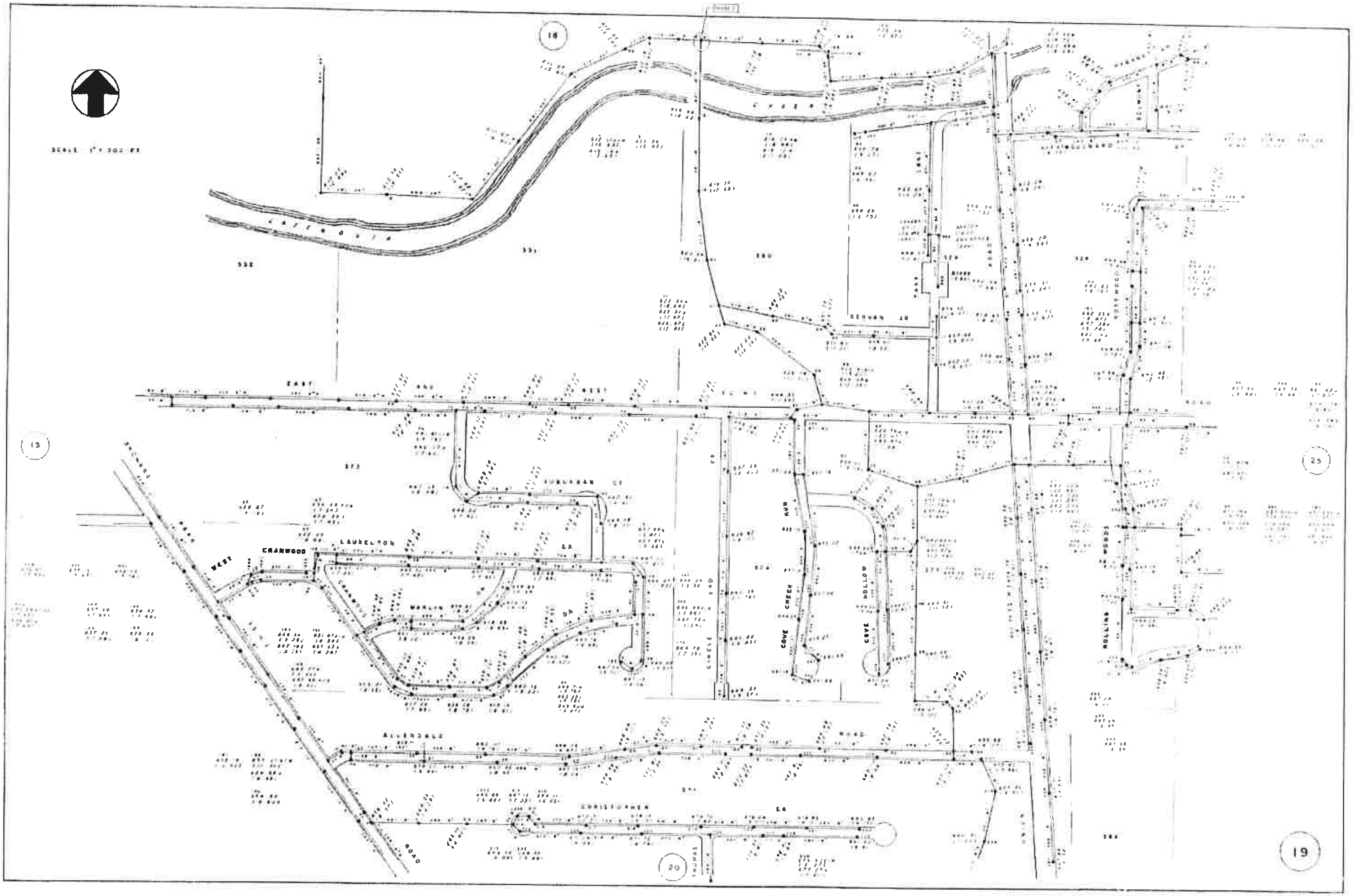
Date	Node 1			Node 2			Node 3			Rain
	736 Reserve Rd (12")			Beechwood Dr (15")			Willowdale Dr (18")			
	FLOW (GAL x 1,000)	PEAK FLOW (MGD)	PEAK LEVEL (IN)	FLOW (GAL x 1,000)	PEAK FLOW (MDG)	PEAK LEVEL (IN)	FLOW (GAL x 1,000)	PEAK FLOW (MDG)	PEAK LEVEL (IN)	(inches)
4/23/2020	62.026	0.264	5.336	200.848	0.730	3.416	534.014	1.904	13.054	*0.15*
4/24/2020	161.246	0.238	4.994	537.582	0.661	3.331	1183.491	1.603	11.690	*0*
4/25/2020	144.751	0.229	5.058	478.791	0.719	3.394	1064.169	1.570	11.677	*0.01*
4/26/2020	363.047	0.557	7.583	1542.255	2.193	6.274	2867.171	3.729	86.250	*0.64*
4/27/2020	257.278	0.362	6.251	875.116	1.482	4.883	2143.878	3.144	32.894	*0*
4/28/2020	185.737	0.238	5.164	638.433	0.930	3.763	1531.044	1.756	12.372	*0*
4/29/2020	162.179	0.224	5.054	481.255	0.670	3.370	1329.932	1.667	12.135	*0*
4/30/2020	274.902	0.591	7.923	1136.754	2.507	6.758	2445.313	3.943	118.502	*0.62*
5/1/2020	216.085	0.322	5.279	704.723	1.062	3.986	2096.744	2.718	14.922	*0.03*
5/2/2020	213.488	0.463	5.174	567.293	0.757	3.473	1664.254	2.135	13.078	*0.04*
5/3/2020	235.389	0.413	5.248	535.645	0.738	3.452	1481.036	1.915	12.306	*0*
5/4/2020	208.255	0.438	5.001	454.277	0.634	3.491	1293.431	1.649	11.803	*0*
5/5/2020	207.724	0.327	4.615	433.565	0.620	3.606	1187.249	1.596	11.675	*0*
5/6/2020	117.187	0.313	4.633	380.017	0.638	3.508	1103.078	1.576	11.495	*0*
5/7/2020	53.444	0.256	4.563	400.982	0.681	3.718	991.696	1.401	11.462	*0.07*
5/8/2020	58.736	0.230	4.607	379.017	0.601	3.498	1010.450	1.367	11.306	*0.02*
5/9/2020	63.939	0.157	4.722	423.461	0.701	3.680	1065.096	1.523	11.659	*0.04*
5/10/2020	60.149	0.179	4.514	394.720	0.675	3.799	980.458	1.565	11.327	*0.01*
5/11/2020	97.909	0.208	5.142	534.872	0.939	3.984	1492.740	2.247	13.178	*0.2*
5/12/2020	69.779	0.142	4.458	497.704	0.625	3.375	1198.599	1.552	11.559	*0*
5/13/2020	79.258	0.183	4.591	425.477	0.627	3.335	1061.486	1.391	10.920	*0*
5/14/2020	132.783	0.224	5.107	382.354	0.569	3.269	1118.867	1.737	11.669	*0.12*
5/15/2020	178.720	0.376	6.704	595.220	1.369	4.820	1564.142	3.004	15.483	*0.17*
5/16/2020	189.307	0.253	5.558	534.078	0.781	3.813	1355.480	1.778	12.485	*0*
5/17/2020	192.468	0.625	8.428	677.703	2.296	6.259	1505.345	3.577	50.798	*0.44*
5/18/2020	372.531	0.628	8.341	1239.228	2.808	6.929	2888.597	3.992	59.514	*0.14*
5/19/2020	200.155	0.256	5.337	528.339	0.643	3.085	1562.729	1.997	12.680	*0*
5/20/2020	158.184	0.233	5.060	424.816	0.559	2.890	1185.249	1.584	11.505	*0*
5/21/2020	83.151	0.247	4.885	225.633	0.587	2.980	620.732	1.545	11.627	*0*
—	—	—	—	—	—	—	—	—	—	*2.7*



Subdivision Site
TOWN OF ORCHARD PARK
SCALE 1" = 200 FT
CHEROKEE DR EXTENSION (WITHIN ORCHARD PARK)
14
20
25
26
32



SCALE 1" = 200 FT
24
19
26
25
34
32
WOODWARD
BLAIR
LAKE
CRESCENT
HYBANK
ROSEWOOD
BRIARWOOD
REYNOLDS
AZALEA
BERNICE
PHYLLIS
HOUGHAM
GREENBRANCH
LARKWOOD
WEBBERWOOD
GREENHILL
SIBLEY
HEMLOCK
HILLTOP
ROAD


SCALE 1" = 200 FT
CREEK
EAST
WEST
SUBURBAN CT
LAURELTON
DR
CRANWOOD
WEST
COVE CREEK RUN
COVE HOLLOW
CIRCLE
ALLENDALE
ROAD
CHRISTOPHER
DR
THOMAS
ROLLING
WOODS
ROAD
13
16
19
20
25

Appendix D

Stormwater Drainage Calculations

Version 1.6
Last Updated: 03/28/2014

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

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

Design Point:	1	
P=	0.90	*inch*

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	16.80	4.80	29%	0.31	16,858	
2						
3						
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	16.80	4.80	29%	0.31	**16,858**	**Subtotal 1**
Total	16.80	4.80	29%	0.31	**16,858**	**Initial WQv**

Identify Runoff Reduction Techniques By Area

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

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*
"<<Initial WQv"	16.80	4.80	29%	0.31	16,858
Subtract Area	0.00	0.00			
WQv adjusted after Area Reductions	**16.80**	**4.80**	29%	0.31	16,858
Disconnection of Rooftops		2.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	16.80	2.80	17%	0.20	**10,977**
WQv reduced by Area Reduction techniques					5,881

Runoff Reduction Volume and Treated volumes						
	Runoff Reduction Techiques/Standard SMPs		**Total Contributing Area**	**Total Contributing Impervious Area**	**WQv Reduced (RRv)**	**WQv Treated**
			(acres)	**(acres)**	**cf**	**cf**
Area/Volume Reduction	Conservation of Natural Areas	RR-1	0.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4		2.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00			
	Bioretention & Infiltration Bioretention	F-5	16.80	2.80	4480	6497
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention (P-1)	P-1				
	Wet Pond (P-2)	P-2				
	Wet Extended Detention (P-3)	P-3				
	Multiple Pond system (P-4)	P-4				
	Pocket Pond (p-5)	P-5				
	Surface Sand filter (F-1)	F-1				
	Underground Sand filter (F-2)	F-2				
	Perimeter Sand Filter (F-3)	F-3				
	Organic Filter (F-4	F-4				
	Shallow Wetland (W-1)	W-1				
	Extended Detention Wetland (W-2	W-2				
	Pond/Wetland System (W-3)	W-3				
	Pocket Wetland (W-4)	W-4				
	Wet Swale (O-2)	O-2				
Totals by Area Reduction →			0.00	2.00	5881	
Totals by Volume Reduction →			0.00	0.00	0	
Totals by Standard SMP w/RRV →			16.80	2.80	4480	6497
Totals by Standard SMP →			0.00	0.00		0
Totals (Area + Volume + all SMPs) →			16.80	4.80	10,361	6,497
	Impervious Cover √	okay				

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C		30%
D	16.80	20%
Total Area	16.8	

Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	4.80	*acre*
Precipitation	0.9	*in*
Rv	0.95	
Minimum RRv	**2,980**	***ft3***
	0.07	af

Bioretention Worksheet

(For use on HSG C or D Soils with underdrains)

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)	*k*	The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor &
WQv	Water Quality Volume (ft3)		
df	Depth of the Soil Medium (feet)		
hf	Average height of water above the planter bed		
tf	Volume Through the Filter Media (days)		

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Precipitation *(in)*	Description
1	16.80	4.80	0.29	0.31	16857.72	0.90	
Enter Impervious Area Reduced by Disconnection of Rooftops		2.00	17%	0.20	10,977	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.						*ft^3*	

Soil Information

Soil Group	D		
Soil Infiltration Rate	0.00	*in/hour*	*Okay*
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area

		Value	Units	Notes
WQv		10,977	*ft^3*	
Enter Depth of Soil Media	*df*	1.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.5	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2	*days*	
Required Filter Area	***Af***	**8233**	*ft^2*	

Determine Actual Bio-Retention Area

Filter Width	30	*ft*	
Filter Length	280	*ft*	
Filter Area	8400	*ft^2*	
Actual Volume Provided	11200	*ft^3*	

Determine Runoff Reduction

Is the Bioretention contributing flow to another practice?			Select Practice	
RRv	4,480			
RRv applied	**4,480**	***ft^3***	***This is 40% of the storage provided or WQv whichever is less.***	
Volume Treated	6,497	*ft^3*	*This is the portion of the WQv that is not reduced in the practice.*	
Volume Directed	0	*ft^3*	This volume is directed another practice	
Sizing √	OK		*Check to be sure Area provided ≥ Af*	

Disconnection of Roof Tops

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice			
Catchment Number	**Impervious Area To Be Disconnected** *(Acres)*		**Description**
1	2.00		Disconnection of Rooftops

Design Elements			
Is another area based practice applied to this area?	*No*		
Soil Type	D		
Has an evaluation by licensed or certified professional determined if soil enhancement & spreading device needed to provide sheet flowover grass surfaces?	*Yes*	*Y/N*	*required for C or D soils.*
Hotspot Area?	*No*		
Length of flow path from Impervious Surfaces	25	*ft*	*75 feet maximum*
Distance of downspouts from impervious areas	10	*ft*	*>10 feet*
Contributing Area of Rooftop to Downspout		*sf*	
Contributing Area of Rooftop	2000	*sf*	*500 sf maximum. Up to 2000 sf with suitable flow dispersion technique*
Method of flow dispersion	Level Spreader		*required If area to downspout >500 sf*
Flow length thru vegetated channel, swale or filter	25	*ft*	*vegetated area must be equal to or greater than the length of contributing impervious*
Slope of vegetated area receiving flow	1	*%*	*Average slope ≤5%*
Will overflow occur to undesignated Areas?	*No*		
Are All Criteria in Section 5.3.5 met?	*Yes*		

Area Reduction Adjustments			
Subtract	**2.00**	***Acres from the Total Impervious Area of Sub-catchment Number***	**1**

Project Name: Reserve Road Subdivision
Job Number: 18.077
Re: Storm Sewer Pipe Sizing Calculations
Calculated By: A. Pandolfe **Date:** 07/08/21
Checked By: **Date:**

STORM SEWER PIPE SIZING CALCULATIONS

INLET & STORM SEWER	TRIBUTARY AREA (A)		RUNOFF COEFF.	INLET TIME	TIME OF CONCEN.	INTENSITY i (10-yr)	RUNOFF Q DIRECT	RUNOFF Q SUM	PIPE DESIGN DIA	S		V	Q	PIPE FLOW L	PIPE FLOW TIME
BY RCVR 9	11266	0.26	0.20	22.8	22.8	2.90	0.15	**0.15**							
to									6	0.0030	0.013	1.57	**0.31**	168	1.8
BY RCVR 8	8775	0.20	0.20	23.0	24.6	2.80	0.11	**0.26**							
to									6	0.0030	0.013	1.57	**0.31**	109	1.2
BY RCVR 7	3004	0.07	0.20	22.2	25.7	2.70	0.04	**0.30**							
to									8	0.0020	0.013	1.55	**0.54**	75	0.8
BY RCVR 6	3002	0.07	0.20	22.2	26.5	2.70	0.04	**0.34**							
to									8	0.0020	0.013	1.55	**0.54**	75	0.8
BY RCVR 5	6000	0.14	0.20	25.5	27.3	2.60	0.07	**0.41**							
to									8	0.0020	0.013	1.55	**0.54**	75	0.8
BY RCVR 4	12006	0.28	0.20	29.0	29.0	2.50	0.14	**0.55**							
to									12	0.0020	0.013	2.03	**1.60**	160	1.3
CB 8	21054	0.48	0.33	12.4	30.4	2.40	0.38	**0.93**							
to									12	0.0020	0.013	2.03	**1.60**	28	0.2
CB 7	19023	0.44	0.34	16.1	30.6	2.40	0.36	**1.28**							
to									12	0.0020	0.013	2.03	**1.60**	5	0.0
STM MH 3							0.00	**1.28**							
to									12	0.0020	0.013	2.03	**1.60**	304	2.5
STM MH 2							0.00	**2.41**							
to									15	0.0020	0.013	2.36	**2.90**	304	2.1
STM MH 1							0.00	**3.17**							
to									18	0.0020	0.013	2.67	**4.71**	104	0.7
BY RCVR 3	3811	0.09	0.20	19.9	35.9	2.30	0.04	**3.21**							
to									18	0.0020	0.013	2.67	**4.71**	105	0.7
BY RCVR 2	5746	0.13	0.20	22.0	36.6	2.30	0.06	**3.27**							
to									18	0.0020	0.013	2.67	**4.71**	105	0.7
BY RCVR 1	1234	0.03	0.20	15.8	37.2	2.20	0.01	**3.28**							
to									18	0.0020	0.013	2.67	**4.71**	11	0.1
Bioretention															
CB 6	14493	0.33	0.44	20.1	20.1	3.00	0.44	**0.44**							
to									8	0.0020	0.013	1.55	**0.54**	28	0.3
CB 5	29912	0.69	0.34	19.8	20.4	3.00	0.69	**1.13**							
to									12	0.0020	0.013	2.03	**1.60**	5	0.0
STM MH 2															
CB 4	9114	0.21	0.55	23.9	23.9	2.80	0.32	**0.32**							
to									8	0.0020	0.013	1.55	**0.54**	28	0.3
CB 3	18572	0.43	0.37	17.6	24.2	2.80	0.44	**0.76**							
to									12	0.0020	0.013	2.03	**1.60**	5	0.0
STM MH 1															
CB 2	9028	0.21	0.55	23.3	23.3	2.80	0.32	**0.32**							
to									8	0.0020	0.013	1.55	**0.54**	28	0.3

Project Name: Reserve Road Subdivision
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CB 1	20674	0.47	0.39	23.5	23.6	2.80	0.52	**0.84**							
to									12	0.0020	0.013	2.03	**1.60**	11	0.1
Detention															
BY RCVR 10	5097	0.12	0.20	18.0	18.0	3.20	0.07	**0.07**							
to									6	0.0030	0.013	1.57	**0.31**	150	1.6
BY RCVR 11	7167	0.16	0.20	20.8	20.8	3.00	0.10	**0.17**							
to									6	0.0030	0.013	1.57	**0.31**	57	0.6
BY RCVR 12	3602	0.08	0.20	17.1	23.9	2.80	0.05	**0.43**							
to									8	0.0020	0.013	1.55	**0.54**	144	1.5
CB 10	97684	2.24	0.35	20.6	25.4	2.70	2.11	**2.54**							
to									15	0.0020	0.013	2.36	**2.90**	28	0.2
CB 9	59108	1.36	0.35	19.4	25.6	2.70	1.29	**3.84**							
to									18	0.0020	0.013	2.67	**4.71**	135	0.8
BY RCVR 27	8550	0.20	0.20	21.7	26.5	2.70	0.11	**3.94**							
to									18	0.0020	0.013	2.67	**4.71**	85	0.5
BY RCVR 28	4275	0.10	0.20	18.4	27.0	2.60	0.05	**3.99**							
to									18	0.0020	0.013	2.67	**4.71**	85	0.5
BY RCVR 29	4473	0.10	0.20	18.4	27.5	2.60	0.05	**4.05**							
to									18	0.0020	0.013	2.67	**4.71**	85	0.5
BY RCVR 30	8748	0.20	0.20	21.7	28.1	2.60	0.10	**4.15**							
to									18	0.0020	0.013	2.67	**4.71**	85	0.5
BY RCVR 31	8550	0.20	0.20	21.7	28.6	2.50	0.10	**4.25**							
to									18	0.0020	0.013	2.67	**4.71**	85	0.5
BY RCVR 32	8824	0.20	0.20	21.7	29.1	2.50	0.10	**4.35**							
to									18	0.0020	0.013	2.67	**4.71**	85	0.5
BY RCVR 33	15277	0.35	0.20	21.7	29.6	2.50	0.18	**4.53**							
to									18	0.0020	0.013	2.67	**4.71**	135	0.8
CB 19	11812	0.27	0.42	15.1	30.5	2.40	0.27	**4.80**							
to									24	0.0020	0.013	3.23	**10.14**	28	0.1
CB 18	8200	0.19	0.43	15.5	30.6	2.40	0.19	**4.99**							
to									24	0.0020	0.013	3.23	**10.14**	5	0.0
STM MH 8							0.00	**4.99**							
to									24	0.0020	0.013	3.23	**10.14**	169	0.9
STM MH 7							0.00	**7.09**							
to									24	0.0020	0.013	3.23	**10.14**	12	0.1
CB 16	52092	1.20	0.36	22.3	31.6	2.40	1.05	**8.14**							
to									24	0.0020	0.013	3.23	**10.14**	38	0.2
Bioretention															
BY RCVR 14	9450	0.22	0.20	21.6	21.6	2.90	0.13	**0.13**							
to									6	0.0030	0.013	1.57	**0.31**	151	1.6
BY RCVR 13	6684	0.15	0.20	17.6	23.3	2.80	0.09	**0.21**							
to									6	0.0030	0.013	1.57	**0.31**	58	0.6

Project Name: Reserve Road Subdivision
Job Number: 18.077
Re: Storm Sewer Pipe Sizing Calculations
Calculated By: A. Pandolfe **Date:** 07/08/21
Checked By: **Date:**

STORM SEWER PIPE SIZING CALCULATIONS

INLET & STORM SEWER	TRIBUTARY AREA (A)		RUNOFF COEFF.	INLET TIME	TIME OF CONCEN.	INTENSITY i (10-yr)	RUNOFF Q DIRECT	RUNOFF Q SUM	PIPE DESIGN DIA	S		V	Q	PIPE FLOW L	PIPE FLOW TIME
BY RCVR 12															
BY RCVR 15	7917	0.18	0.20	21.7	21.7	2.90	0.11	**0.11**							
to									6	0.0050	0.013	2.03	**0.40**	99	0.8
BY RCVR 16	5730	0.13	0.20	21.4	22.5	2.90	0.08	**0.18**							
to									6	0.0050	0.013	2.03	**0.40**	80	0.7
BY RCVR 17	4113	0.09	0.20	19.1	23.2	2.80	0.05	**0.23**							
to									6	0.0050	0.013	2.03	**0.40**	75	0.6
BY RCVR 18	7634	0.18	0.20	21.6	23.8	2.80	0.10	**0.33**							
to									8	0.0020	0.013	1.55	**0.54**	139	1.5
STM MH 4							0.00	**0.45**							
to									8	0.0020	0.013	1.55	**0.54**	289	3.1
STM MH 5							0.00	**1.23**							
to									12	0.0020	0.013	2.03	**1.60**	338	2.8
STM MH 7															
CB 11	2042	0.05	0.39	16.8	16.8	3.30	0.06	**0.06**							
to									6	0.0030	0.013	1.57	**0.31**	28	0.3
CB 12	1737	0.04	0.42	12.1	17.1	3.20	0.05	**0.11**							
to									6	0.0030	0.013	1.57	**0.31**	5	0.1
STM MH 4															
CB 13	25477	0.58	0.34	24.3	24.3	2.80	0.55	**0.55**							
to									10	0.0020	0.013	1.80	**0.98**	28	0.3
CB 14	8392	0.19	0.43	15.6	24.6	2.80	0.23	**0.78**							
to									10	0.0020	0.013	1.80	**0.98**	5	0.0
STM MH 5															
CB 15	25559	0.59	0.36	23.0	23.0	2.90	0.61	**0.61**							
to									10	0.0020	0.013	1.80	**0.98**	26	0.2
STM MH 6															
CB 17	9854	0.23	0.38	20.9	20.9	3.00	0.26	**0.26**							
to									8	0.0020	0.013	1.55	**0.54**	26	0.3
STM MH 6							0.00	**0.87**							
to									10	0.0020	0.013	1.80	**0.98**	47	0.4
STM MH 7															


5S
Existing Site
1S
3P
Proposed Site - South
Detention - South
4S
5P
Proposed Site - West
Detention - West
Subcat
Reach
Pond
Link
Routing Diagram for 18.077 storm calcs
Prepared by HP Inc., Printed 7/19/2021
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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
356,030	74	>75% Grass cover, Good, HSG C (4S)
144,591	80	>75% Grass cover, Good, HSG D (1S)
89,282	98	Roads (1S, 4S)
88,000	98	Roofs, HSG D (1S, 4S)
18,701	98	Sidewalks (1S, 4S)
733,573	77	Woods, Good, HSG D (5S)
1,430,177	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
356,030	HSG C	4S
966,164	HSG D	1S, 4S, 5S
107,983	Other	1S, 4S
1,430,177		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	0	356,030	144,591	0	500,621	>75% Grass cover, Good	
0	0	0	0	89,282	89,282	Roads	
0	0	0	88,000	0	88,000	Roofs	
0	0	0	0	18,701	18,701	Sidewalks	
0	0	0	733,573	0	733,573	Woods, Good	
0	**0**	**356,030**	**966,164**	**107,983**	**1,430,177**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1S	0.00	0.00	497.0	0.0020	0.013	12.0	0.0	0.0
2	1S	0.00	0.00	304.0	0.0020	0.013	15.0	0.0	0.0
3	1S	0.00	0.00	325.0	0.0020	0.013	18.0	0.0	0.0
4	4S	0.00	0.00	209.0	0.0030	0.013	6.0	0.0	0.0
5	4S	0.00	0.00	144.0	0.0020	0.013	8.0	0.0	0.0
6	4S	0.00	0.00	28.0	0.0020	0.013	15.0	0.0	0.0
7	4S	0.00	0.00	780.0	0.0020	0.013	18.0	0.0	0.0
8	4S	0.00	0.00	252.0	0.0020	0.013	12.0	0.0	0.0
9	3P	737.25	737.17	16.0	0.0050	0.013	12.0	0.0	0.0
10	3P	737.28	737.25	6.0	0.0050	0.013	12.0	0.0	0.0
11	5P	736.57	736.45	39.0	0.0031	0.013	6.0	0.0	0.0
12	5P	736.61	736.57	15.0	0.0027	0.013	6.0	0.0	0.0

Time span=0.50-70.00 hrs, dt=0.04 hrs, 1739 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Proposed Site - South Runoff Area=211,948 sf 31.78% Impervious Runoff Depth=0.75"
Flow Length=1,290' Tc=38.6 min CN=86 Runoff=2.58 cfs 13,280 cf

Subcatchment4S: Proposed Site - West Runoff Area=484,656 sf 26.54% Impervious Runoff Depth=0.48"
Flow Length=1,538' Tc=33.0 min CN=80 Runoff=3.81 cfs 19,588 cf

Subcatchment5S: Existing Site Runoff Area=733,573 sf 0.00% Impervious Runoff Depth=0.38"
Flow Length=662' Slope=0.0100 '/' Tc=41.7 min CN=77 Runoff=3.46 cfs 23,242 cf

Pond 3P: Detention - South Peak Elev=738.16' Storage=2,639 cf Inflow=2.58 cfs 13,280 cf
Primary=1.62 cfs 13,280 cf Secondary=0.00 cfs 0 cf Outflow=1.62 cfs 13,280 cf

Pond 5P: Detention - West Peak Elev=738.21' Storage=6,849 cf Inflow=3.81 cfs 19,588 cf
Primary=0.81 cfs 19,588 cf Secondary=0.00 cfs 0 cf Outflow=0.81 cfs 19,588 cf

Total Runoff Area = 1,430,177 sf Runoff Volume = 56,110 cf Average Runoff Depth = 0.47"
86.30% Pervious = 1,234,194 sf 13.70% Impervious = 195,983 sf

Summary for Subcatchment 1S: Proposed Site - South

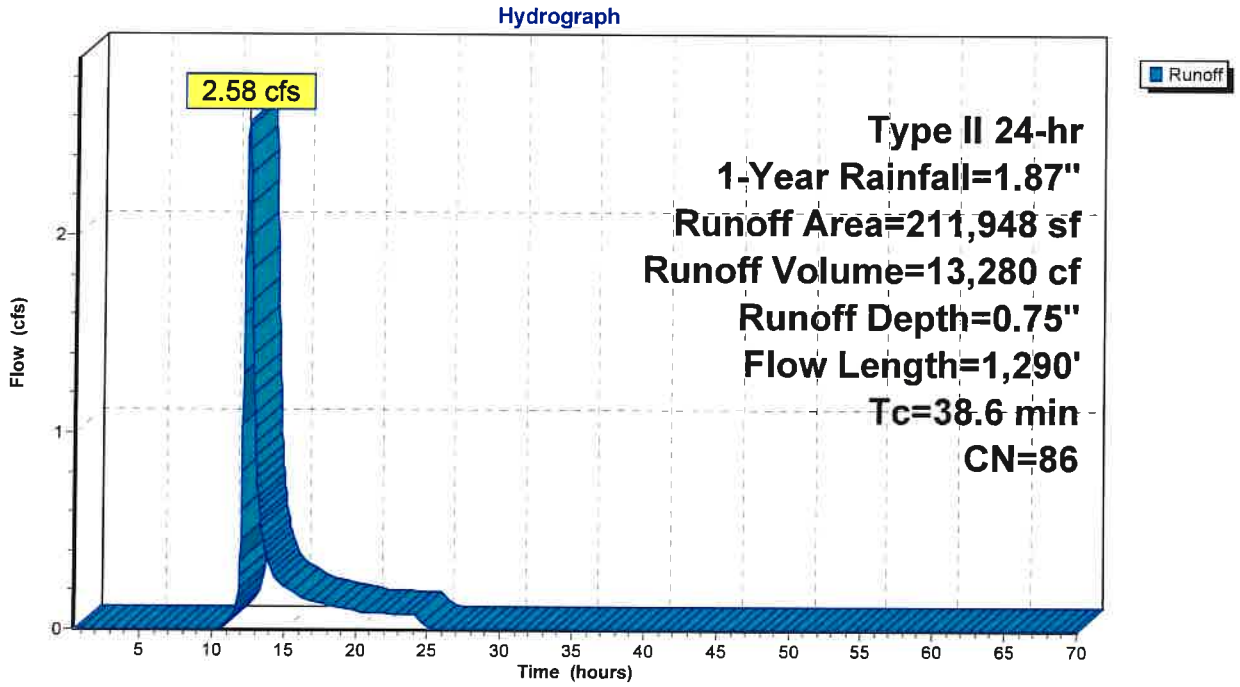
Runoff = 2.58 cfs @ 12.37 hrs, Volume= 13,280 cf, Depth= 0.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 1-Year Rainfall=1.87"

	Area (sf)	CN	Description
	144,591	80	>75% Grass cover, Good, HSG D
*	33,877	98	Roads
	28,000	98	Roofs, HSG D
*	5,480	98	Sidewalks
	211,948	86	Weighted Average
	144,591		68.22% Pervious Area
	67,357		31.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.1	100	0.0050	0.06		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
2.2	64	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	497	0.0020	2.03	1.59	**Pipe Channel, 12" Pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
2.2	304	0.0020	2.35	2.89	**Pipe Channel, 15" Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
2.0	325	0.0020	2.66	4.70	**Pipe Channel, 18" Pipe** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
38.6	1,290	Total			

Subcatchment 1S: Proposed Site - South



Summary for Subcatchment 4S: Proposed Site - West

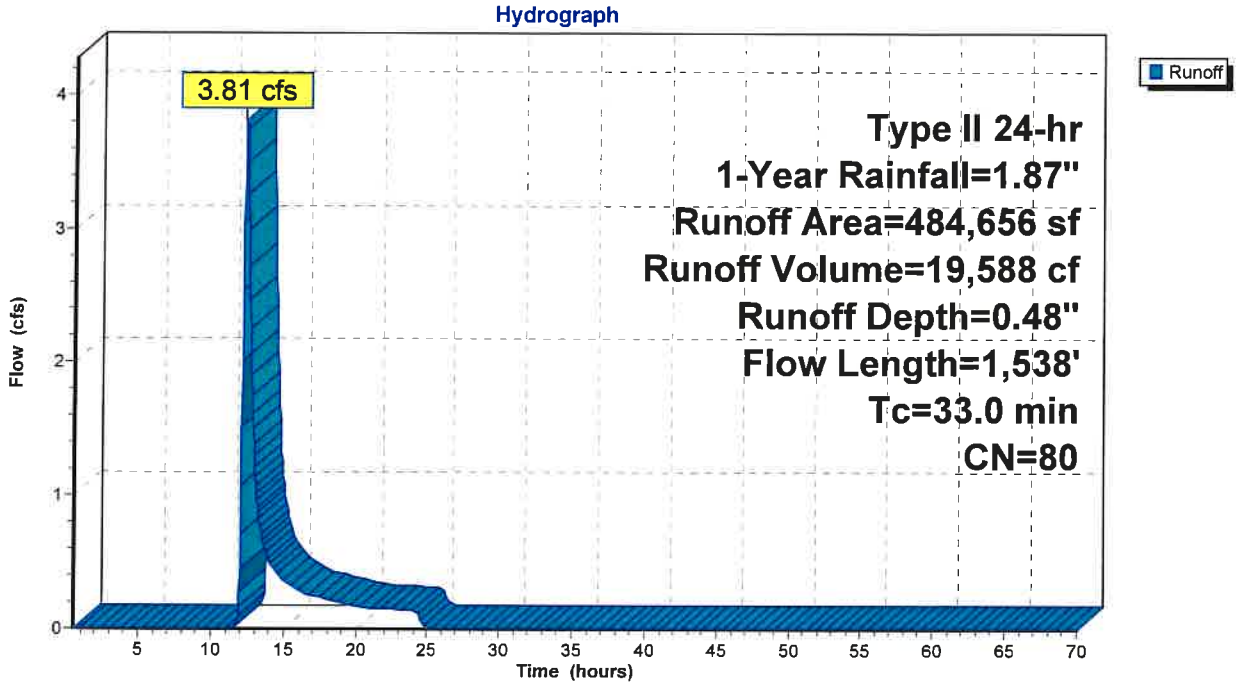
Runoff = 3.81 cfs @ 12.32 hrs, Volume= 19,588 cf, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 1-Year Rainfall=1.87"

	Area (sf)	CN	Description
	356,030	74	>75% Grass cover, Good, HSG C
*	55,405	98	Roads
	60,000	98	Roofs, HSG D
*	13,221	98	Sidewalks
	484,656	80	Weighted Average
	356,030		73.46% Pervious Area
	128,626		26.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
0.7	25	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.2	209	0.0030	1.57	0.31	**Pipe Channel, 6" Pipe** 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.013 Corrugated PE, smooth interior
1.6	144	0.0020	1.55	0.54	**Pipe Channel, 8" Pipe** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013 Corrugated PE, smooth interior
0.2	28	0.0020	2.35	2.89	**Pipe Channel, 15" Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
4.9	780	0.0020	2.66	4.70	**Pipe Channel, 18" Pipe** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
2.1	252	0.0020	2.03	1.59	**Pipe Channel, 24" Pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
33.0	1,538	Total			

Subcatchment 4S: Proposed Site - West



Summary for Subcatchment 5S: Existing Site

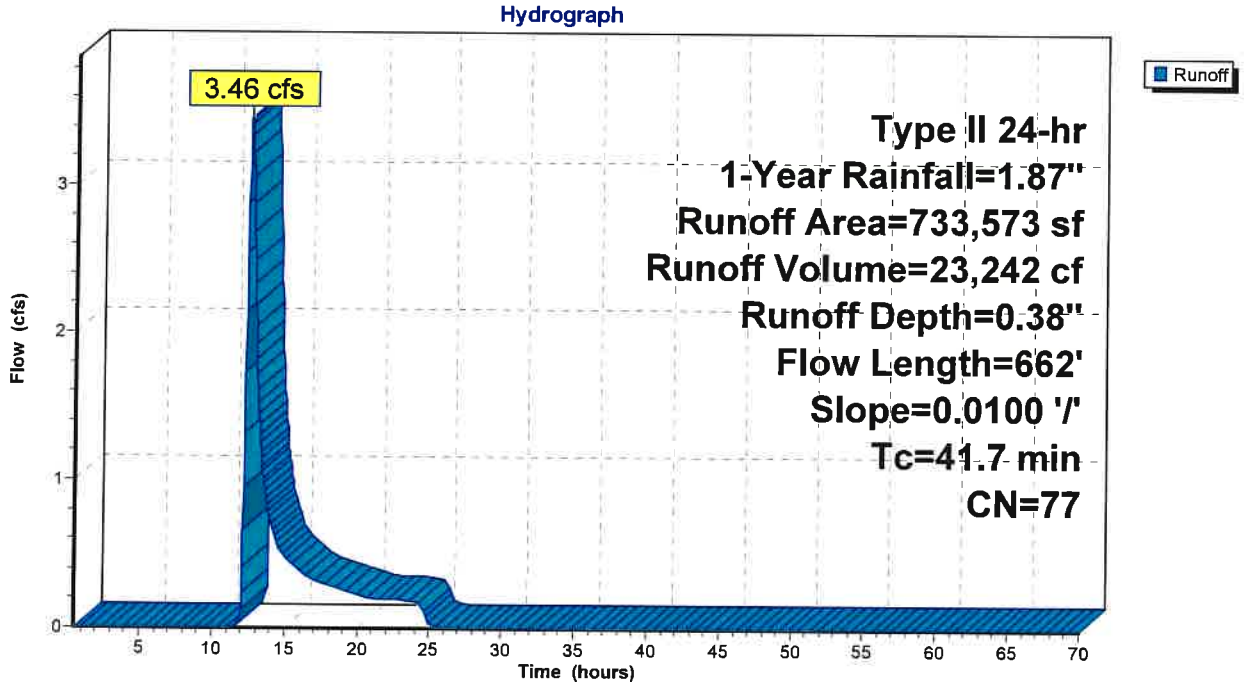
Runoff = 3.46 cfs @ 12.46 hrs, Volume= 23,242 cf, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 1-Year Rainfall=1.87"

Area (sf)	CN	Description
733,573	77	Woods, Good, HSG D
733,573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	150	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
12.2	512	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
41.7	662	Total			

Subcatchment 5S: Existing Site



Summary for Pond 3P: Detention - South

Inflow Area = 211,948 sf, 31.78% Impervious, Inflow Depth = 0.75" for 1-Year event
Inflow = 2.58 cfs @ 12.37 hrs, Volume= 13,280 cf
Outflow = 1.62 cfs @ 12.68 hrs, Volume= 13,280 cf, Atten= 37%, Lag= 18.5 min
Primary = 1.62 cfs @ 12.68 hrs, Volume= 13,280 cf
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Peak Elev= 738.16' @ 12.68 hrs Surf.Area= 5,190 sf Storage= 2,639 cf

Plug-Flow detention time= 24.3 min calculated for 13,272 cf (100% of inflow)
Center-of-Mass det. time= 24.3 min (899.7 - 875.4)

Volume	Invert	Avail.Storage	Storage Description
#1	737.28'	20,315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
737.28	0	0	0
738.00	5,050	1,818	1,818
739.00	5,920	5,485	7,303
740.00	6,840	6,380	13,683
740.80	9,740	6,632	20,315

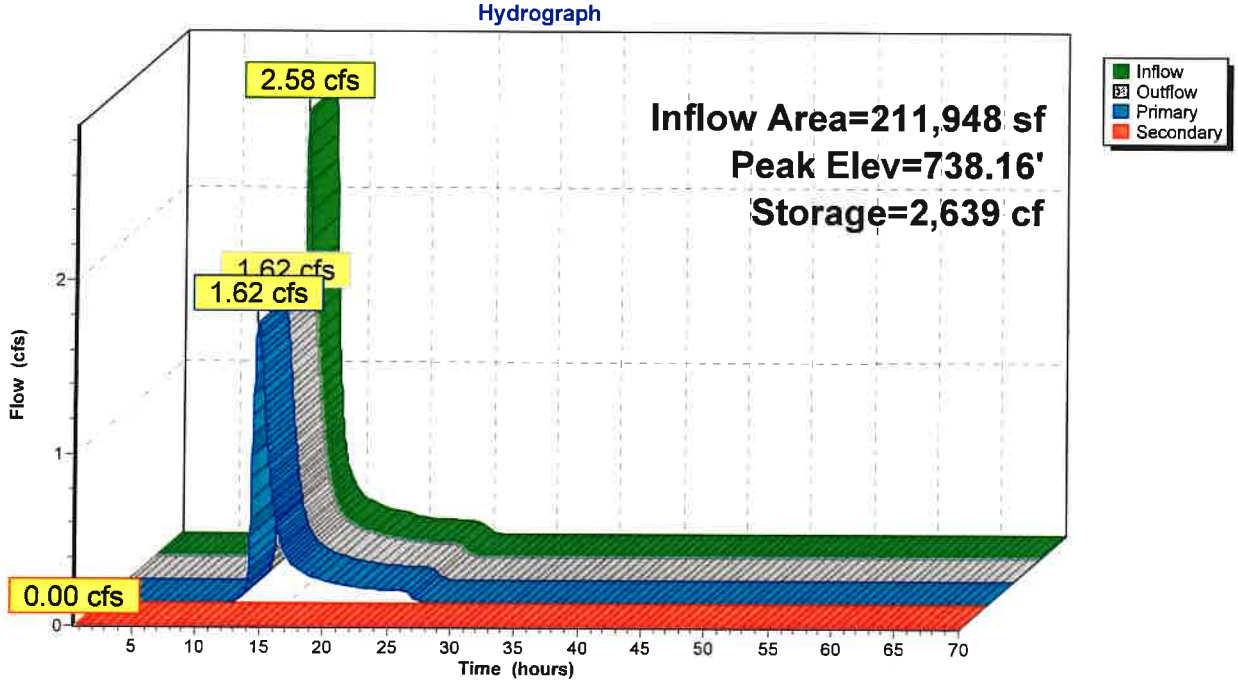
Device	Routing	Invert	Outlet Devices
#1	Primary	737.25'	**12.0" Round Culvert** L= 16.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 737.25' / 737.17' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	737.28'	**12.0" Round Culvert** L= 6.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 737.28' / 737.25' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 1	740.60'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	740.60'	**140.0 deg x 20.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=1.62 cfs @ 12.68 hrs HW=738.16' (Free Discharge)
└**1=Culvert** (Passes 1.62 cfs of 1.75 cfs potential flow)
  ├**2=Culvert** (Barrel Controls 1.62 cfs @ 2.95 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=737.28' (Free Discharge)
└**4=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 3P: Detention - South

Hydrograph



Summary for Pond 5P: Detention - West

Inflow Area = 484,656 sf, 26.54% Impervious, Inflow Depth = 0.48" for 1-Year event
Inflow = 3.81 cfs @ 12.32 hrs, Volume= 19,588 cf
Outflow = 0.81 cfs @ 13.26 hrs, Volume= 19,588 cf, Atten= 79%, Lag= 56.4 min
Primary = 0.81 cfs @ 13.26 hrs, Volume= 19,588 cf
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Peak Elev= 738.21' @ 13.26 hrs Surf.Area= 7,046 sf Storage= 6,849 cf

Plug-Flow detention time= 102.2 min calculated for 19,576 cf (100% of inflow)
Center-of-Mass det. time= 102.3 min (999.8 - 897.5)

Volume	Invert	Avail.Storage	Storage Description
#1	736.61'	85,179 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

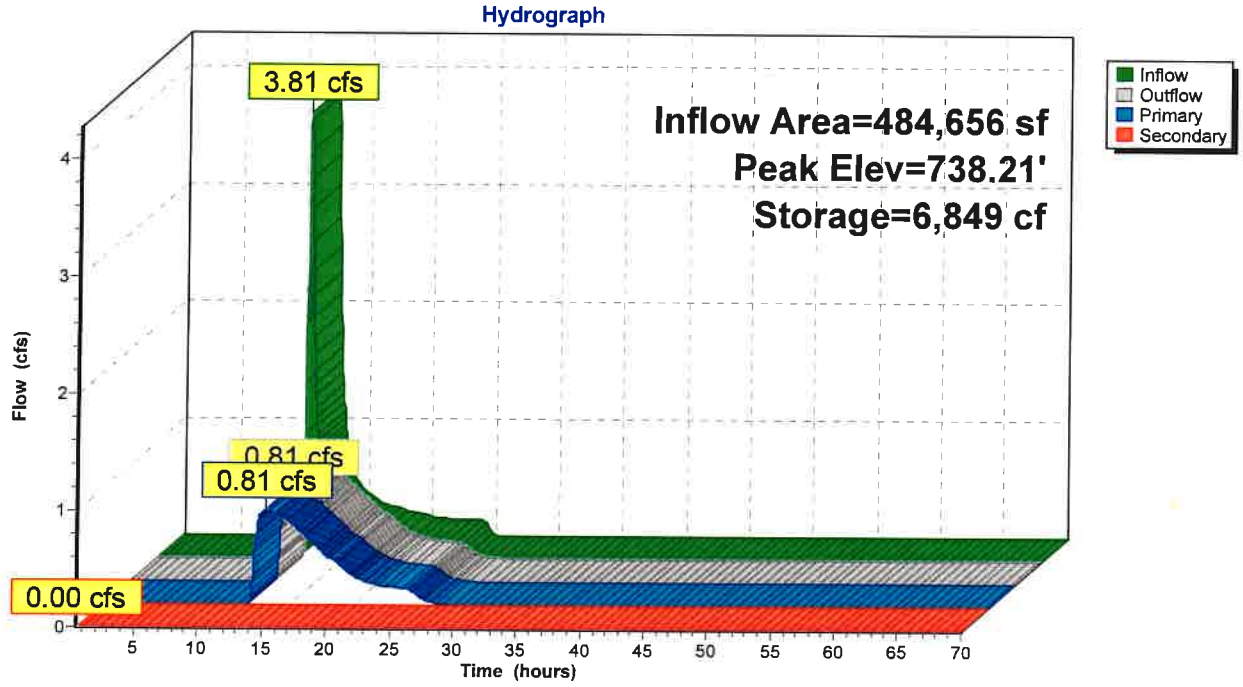
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
736.61	0	0	0
737.00	4,250	829	829
738.00	5,210	4,730	5,559
739.00	13,930	9,570	15,129
740.00	15,990	14,960	30,089
741.00	17,540	16,765	46,854
742.00	19,150	18,345	65,199
743.00	20,810	19,980	85,179

Device	Routing	Invert	Outlet Devices
#1	Primary	736.57'	**6.0" Round Culvert** L= 39.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 736.57' / 736.45' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	736.61'	**6.0" Round Culvert** L= 15.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 736.61' / 736.57' S= 0.0027 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	742.30'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	742.50'	**140.0 deg x 20.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=0.81 cfs @ 13.26 hrs HW=738.21' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.81 cfs @ 4.12 fps)
  ├**2=Culvert** (Passes 0.81 cfs of 0.97 cfs potential flow)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=736.61' (Free Discharge)
└**4=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 5P: Detention - West



Time span=0.50-70.00 hrs, dt=0.04 hrs, 1739 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Proposed Site - South Runoff Area=211,948 sf 31.78% Impervious Runoff Depth=1.78"
Flow Length=1,290' Tc=38.6 min CN=86 Runoff=6.34 cfs 31,493 cf

Subcatchment4S: Proposed Site - West Runoff Area=484,656 sf 26.54% Impervious Runoff Depth=1.36"
Flow Length=1,538' Tc=33.0 min CN=80 Runoff=11.99 cfs 54,764 cf

Subcatchment5S: Existing Site Runoff Area=733,573 sf 0.00% Impervious Runoff Depth=1.17"
Flow Length=662' Slope=0.0100 '/' Tc=41.7 min CN=77 Runoff=12.96 cfs 71,470 cf

Pond 3P: Detention - South Peak Elev=738.97' Storage=7,097 cf Inflow=6.34 cfs 31,493 cf
Primary=3.63 cfs 31,493 cf Secondary=0.00 cfs 0 cf Outflow=3.63 cfs 31,493 cf

Pond 5P: Detention - West Peak Elev=739.82' Storage=27,279 cf Inflow=11.99 cfs 54,764 cf
Primary=1.22 cfs 54,764 cf Secondary=0.00 cfs 0 cf Outflow=1.22 cfs 54,764 cf

Total Runoff Area = 1,430,177 sf Runoff Volume = 157,727 cf Average Runoff Depth = 1.32"
86.30% Pervious = 1,234,194 sf 13.70% Impervious = 195,983 sf

Summary for Subcatchment 1S: Proposed Site - South

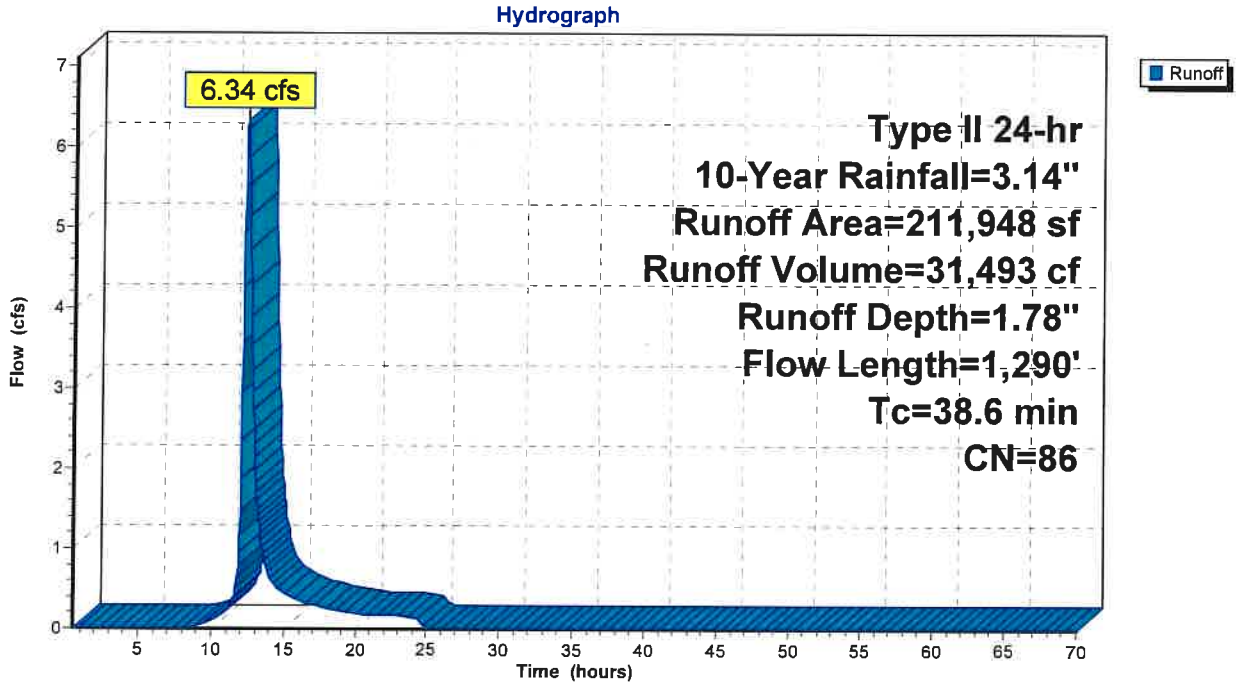
Runoff = 6.34 cfs @ 12.35 hrs, Volume= 31,493 cf, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 10-Year Rainfall=3.14"

	Area (sf)	CN	Description
	144,591	80	>75% Grass cover, Good, HSG D
*	33,877	98	Roads
	28,000	98	Roofs, HSG D
*	5,480	98	Sidewalks
	211,948	86	Weighted Average
	144,591		68.22% Pervious Area
	67,357		31.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.1	100	0.0050	0.06		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
2.2	64	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	497	0.0020	2.03	1.59	**Pipe Channel, 12" Pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
2.2	304	0.0020	2.35	2.89	**Pipe Channel, 15" Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
2.0	325	0.0020	2.66	4.70	**Pipe Channel, 18" Pipe** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
38.6	1,290	Total			

Subcatchment 1S: Proposed Site - South



Summary for Subcatchment 4S: Proposed Site - West

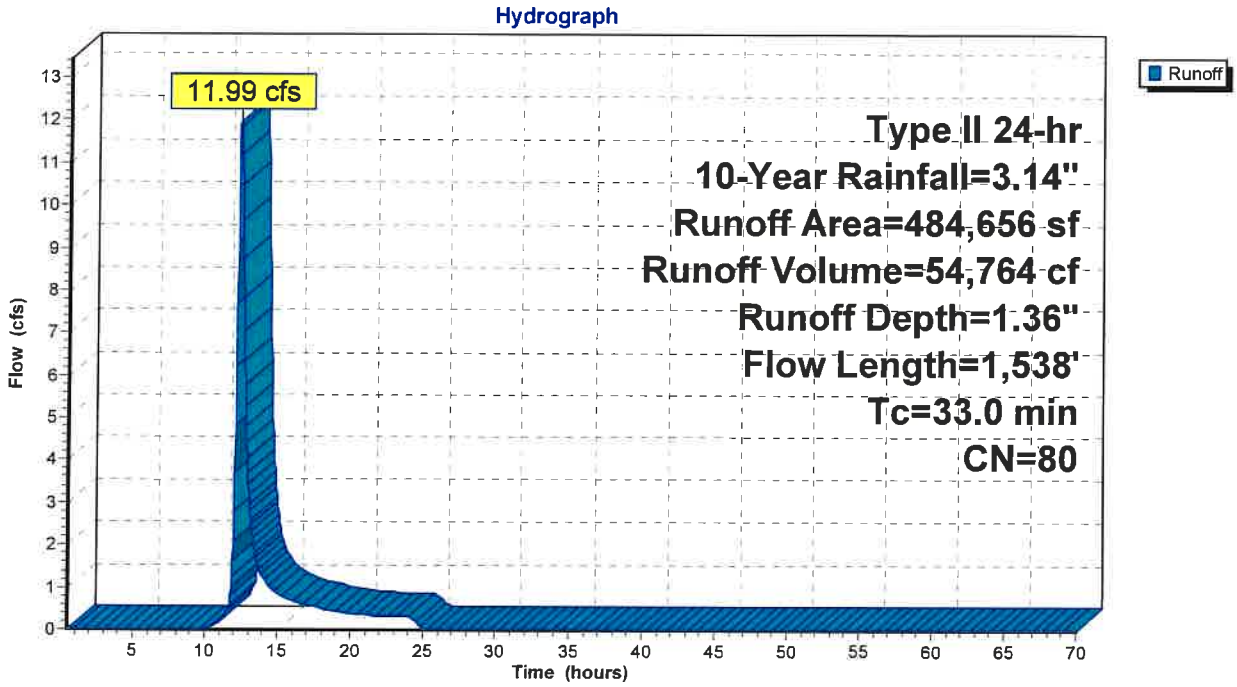
Runoff = 11.99 cfs @ 12.29 hrs, Volume= 54,764 cf, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 10-Year Rainfall=3.14"

	Area (sf)	CN	Description
	356,030	74	>75% Grass cover, Good, HSG C
*	55,405	98	Roads
	60,000	98	Roofs, HSG D
*	13,221	98	Sidewalks
	484,656	80	Weighted Average
	356,030		73.46% Pervious Area
	128,626		26.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
0.7	25	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.2	209	0.0030	1.57	0.31	**Pipe Channel, 6" Pipe** 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.013 Corrugated PE, smooth interior
1.6	144	0.0020	1.55	0.54	**Pipe Channel, 8" Pipe** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013 Corrugated PE, smooth interior
0.2	28	0.0020	2.35	2.89	**Pipe Channel, 15" Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
4.9	780	0.0020	2.66	4.70	**Pipe Channel, 18" Pipe** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
2.1	252	0.0020	2.03	1.59	**Pipe Channel, 24" Pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
33.0	1,538	Total			

Subcatchment 4S: Proposed Site - West



Summary for Subcatchment 5S: Existing Site

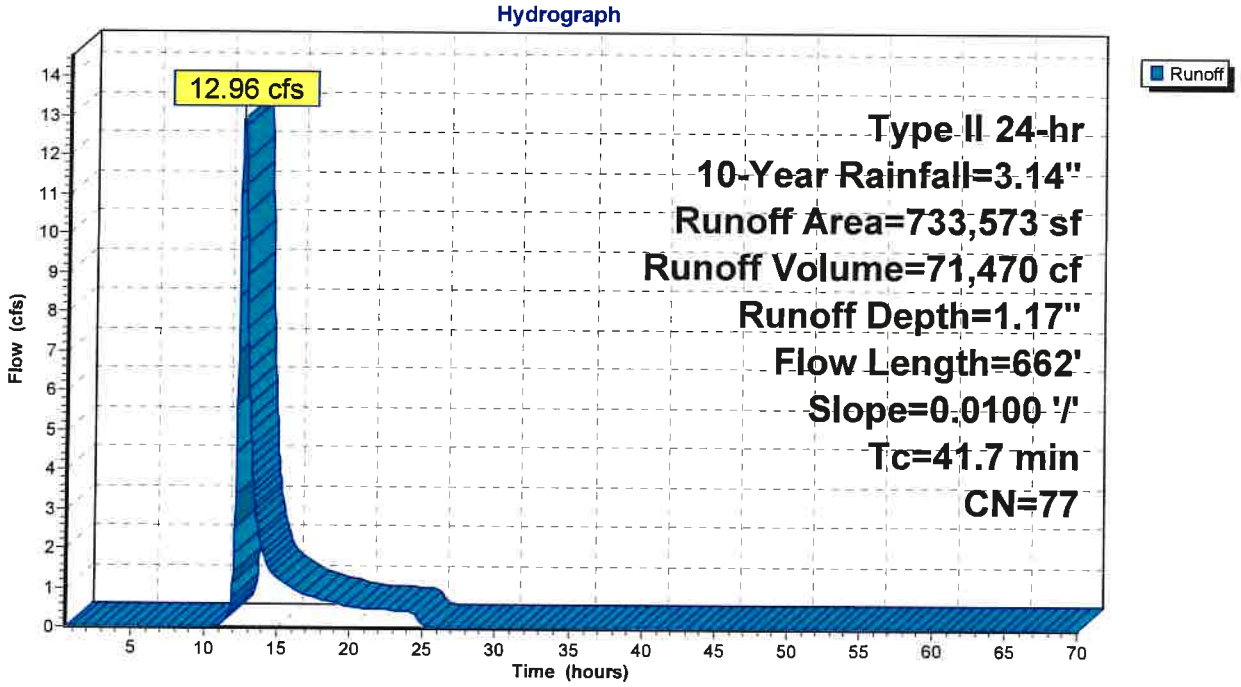
Runoff = 12.96 cfs @ 12.41 hrs, Volume= 71,470 cf, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 10-Year Rainfall=3.14"

Area (sf)	CN	Description
733,573	77	Woods, Good, HSG D
733,573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	150	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
12.2	512	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
41.7	662	Total			

Subcatchment 5S: Existing Site



Summary for Pond 3P: Detention - South

Inflow Area = 211,948 sf, 31.78% Impervious, Inflow Depth = 1.78" for 10-Year event
Inflow = 6.34 cfs @ 12.35 hrs, Volume= 31,493 cf
Outflow = 3.63 cfs @ 12.69 hrs, Volume= 31,493 cf, Atten= 43%, Lag= 20.5 min
Primary = 3.63 cfs @ 12.69 hrs, Volume= 31,493 cf
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Peak Elev= 738.97' @ 12.69 hrs Surf.Area= 5,890 sf Storage= 7,097 cf

Plug-Flow detention time= 26.9 min calculated for 31,475 cf (100% of inflow)
Center-of-Mass det. time= 26.9 min (877.4 - 850.5)

Volume	Invert	Avail.Storage	Storage Description
#1	737.28'	20,315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

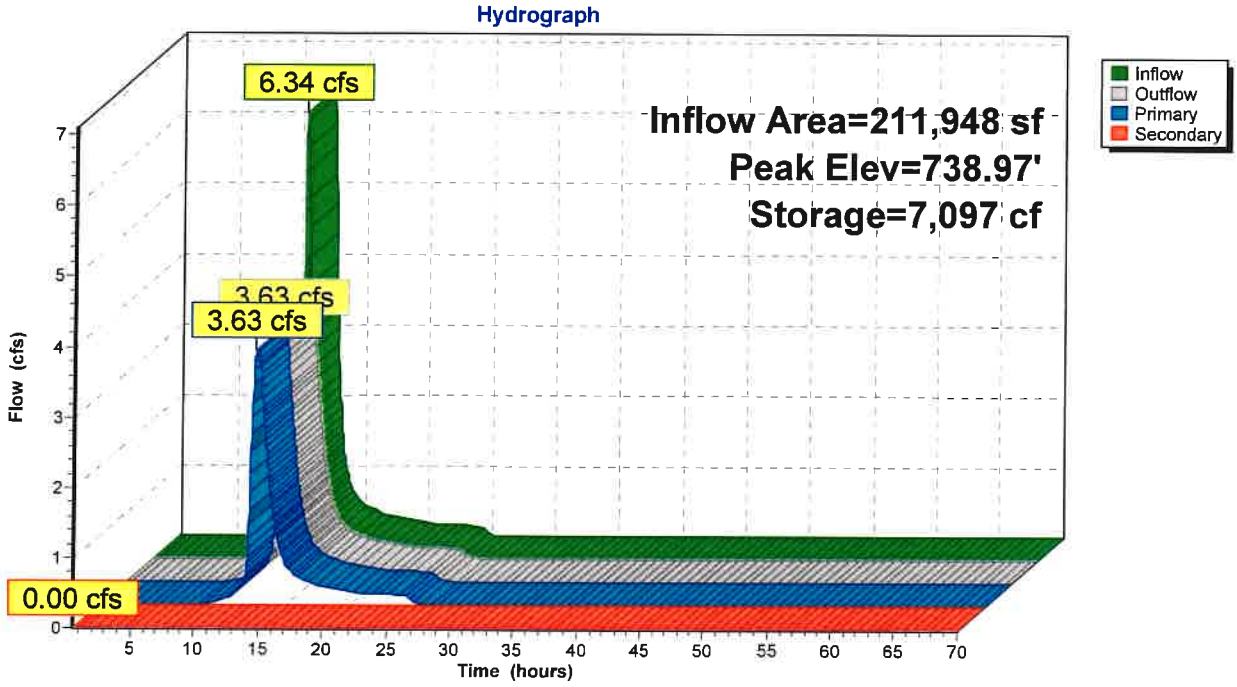
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
737.28	0	0	0
738.00	5,050	1,818	1,818
739.00	5,920	5,485	7,303
740.00	6,840	6,380	13,683
740.80	9,740	6,632	20,315

Device	Routing	Invert	Outlet Devices
#1	Primary	737.25'	**12.0" Round Culvert** L= 16.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 737.25' / 737.17' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	737.28'	**12.0" Round Culvert** L= 6.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 737.28' / 737.25' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 1	740.60'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	740.60'	**140.0 deg x 20.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=3.63 cfs @ 12.69 hrs HW=738.96' (Free Discharge)
↑**1=Culvert** (Passes 3.63 cfs of 3.68 cfs potential flow)
↑**2=Culvert** (Inlet Controls 3.63 cfs @ 4.62 fps)
3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=737.28' (Free Discharge)
↑**4=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 3P: Detention - South



Summary for Pond 5P: Detention - West

Inflow Area = 484,656 sf, 26.54% Impervious, Inflow Depth = 1.36" for 10-Year event
Inflow = 11.99 cfs @ 12.29 hrs, Volume= 54,764 cf
Outflow = 1.22 cfs @ 13.92 hrs, Volume= 54,764 cf, Atten= 90%, Lag= 98.0 min
Primary = 1.22 cfs @ 13.92 hrs, Volume= 54,764 cf
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Peak Elev= 739.82' @ 13.92 hrs Surf.Area= 15,624 sf Storage= 27,279 cf

Plug-Flow detention time= 259.1 min calculated for 54,733 cf (100% of inflow)
Center-of-Mass det. time= 259.2 min (1,124.7 - 865.5)

Volume	Invert	Avail.Storage	Storage Description
#1	736.61'	85,179 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

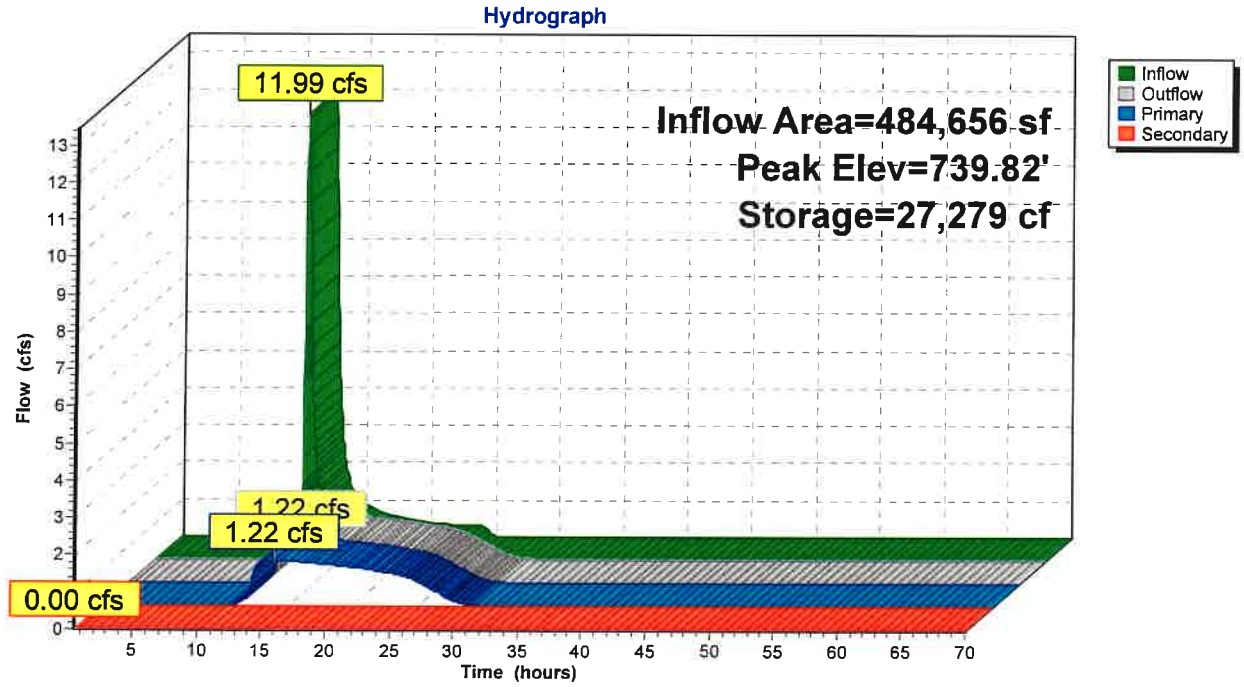
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
736.61	0	0	0
737.00	4,250	829	829
738.00	5,210	4,730	5,559
739.00	13,930	9,570	15,129
740.00	15,990	14,960	30,089
741.00	17,540	16,765	46,854
742.00	19,150	18,345	65,199
743.00	20,810	19,980	85,179

Device	Routing	Invert	Outlet Devices
#1	Primary	736.57'	**6.0" Round Culvert** L= 39.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 736.57' / 736.45' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	736.61'	**6.0" Round Culvert** L= 15.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 736.61' / 736.57' S= 0.0027 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	742.30'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	742.50'	**140.0 deg x 20.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=1.22 cfs @ 13.92 hrs HW=739.82' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.22 cfs @ 6.22 fps)
  ├**2=Culvert** (Passes 1.22 cfs of 1.44 cfs potential flow)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=736.61' (Free Discharge)
└**4=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 5P: Detention - West



Time span=0.50-70.00 hrs, dt=0.04 hrs, 1739 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Proposed Site - South Runoff Area=211,948 sf 31.78% Impervious Runoff Depth=2.40"
Flow Length=1,290' Tc=38.6 min CN=86 Runoff=8.55 cfs 42,422 cf

Subcatchment4S: Proposed Site - West Runoff Area=484,656 sf 26.54% Impervious Runoff Depth=1.91"
Flow Length=1,538' Tc=33.0 min CN=80 Runoff=17.15 cfs 77,149 cf

Subcatchment5S: Existing Site Runoff Area=733,573 sf 0.00% Impervious Runoff Depth=1.69"
Flow Length=662' Slope=0.0100 '/' Tc=41.7 min CN=77 Runoff=19.26 cfs 103,178 cf

Pond 3P: Detention - South Peak Elev=739.50' Storage=10,375 cf Inflow=8.55 cfs 42,422 cf
Primary=4.38 cfs 42,422 cf Secondary=0.00 cfs 0 cf Outflow=4.38 cfs 42,422 cf

Pond 5P: Detention - West Peak Elev=740.70' Storage=41,620 cf Inflow=17.15 cfs 77,149 cf
Primary=1.39 cfs 77,149 cf Secondary=0.00 cfs 0 cf Outflow=1.39 cfs 77,149 cf

Total Runoff Area = 1,430,177 sf Runoff Volume = 222,750 cf Average Runoff Depth = 1.87"
86.30% Pervious = 1,234,194 sf 13.70% Impervious = 195,983 sf

Summary for Subcatchment 1S: Proposed Site - South

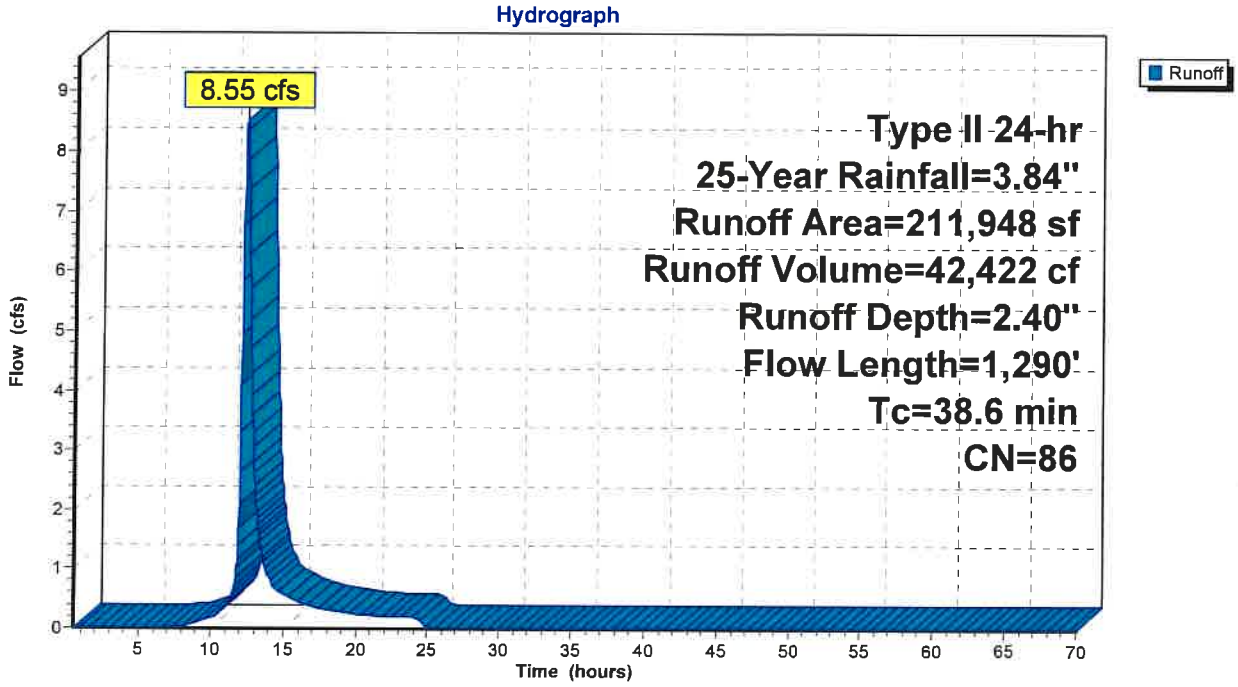
Runoff = 8.55 cfs @ 12.35 hrs, Volume= 42,422 cf, Depth= 2.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 25-Year Rainfall=3.84"

	Area (sf)	CN	Description
	144,591	80	>75% Grass cover, Good, HSG D
*	33,877	98	Roads
	28,000	98	Roofs, HSG D
*	5,480	98	Sidewalks
	211,948	86	Weighted Average
	144,591		68.22% Pervious Area
	67,357		31.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.1	100	0.0050	0.06		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
2.2	64	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	497	0.0020	2.03	1.59	**Pipe Channel, 12" Pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
2.2	304	0.0020	2.35	2.89	**Pipe Channel, 15" Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
2.0	325	0.0020	2.66	4.70	**Pipe Channel, 18" Pipe** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
38.6	1,290	Total			

Subcatchment 1S: Proposed Site - South



Summary for Subcatchment 4S: Proposed Site - West

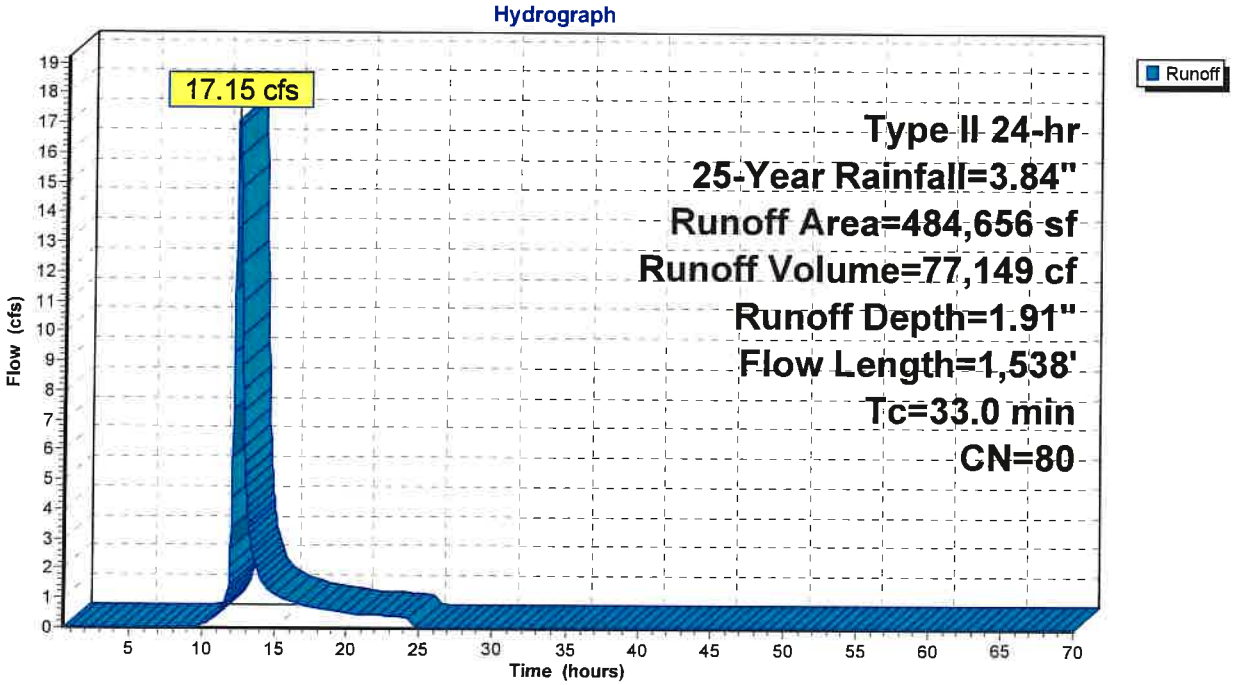
Runoff = 17.15 cfs @ 12.29 hrs, Volume= 77,149 cf, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 25-Year Rainfall=3.84"

	Area (sf)	CN	Description
	356,030	74	>75% Grass cover, Good, HSG C
*	55,405	98	Roads
	60,000	98	Roofs, HSG D
*	13,221	98	Sidewalks
	484,656	80	Weighted Average
	356,030		73.46% Pervious Area
	128,626		26.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
0.7	25	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.2	209	0.0030	1.57	0.31	**Pipe Channel, 6" Pipe** 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.013 Corrugated PE, smooth interior
1.6	144	0.0020	1.55	0.54	**Pipe Channel, 8" Pipe** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013 Corrugated PE, smooth interior
0.2	28	0.0020	2.35	2.89	**Pipe Channel, 15" Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
4.9	780	0.0020	2.66	4.70	**Pipe Channel, 18" Pipe** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
2.1	252	0.0020	2.03	1.59	**Pipe Channel, 24" Pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
33.0	1,538	Total			

Subcatchment 4S: Proposed Site - West



Summary for Subcatchment 5S: Existing Site

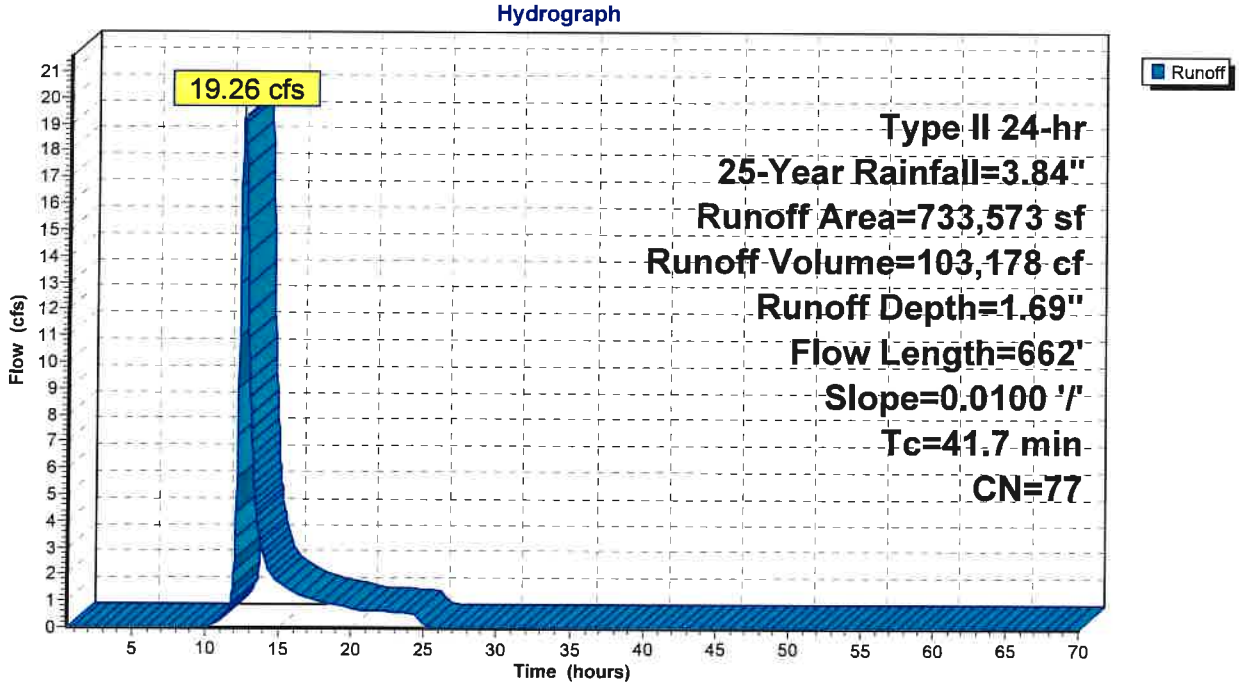
Runoff = 19.26 cfs @ 12.40 hrs, Volume= 103,178 cf, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 25-Year Rainfall=3.84"

Area (sf)	CN	Description
733,573	77	Woods, Good, HSG D
733,573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	150	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
12.2	512	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
41.7	662	Total			

Subcatchment 5S: Existing Site



Summary for Pond 3P: Detention - South

Inflow Area = 211,948 sf, 31.78% Impervious, Inflow Depth = 2.40" for 25-Year event
Inflow = 8.55 cfs @ 12.35 hrs, Volume= 42,422 cf
Outflow = 4.38 cfs @ 12.73 hrs, Volume= 42,422 cf, Atten= 49%, Lag= 23.2 min
Primary = 4.38 cfs @ 12.73 hrs, Volume= 42,422 cf
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Peak Elev= 739.50' @ 12.73 hrs Surf.Area= 6,380 sf Storage= 10,375 cf

Plug-Flow detention time= 29.7 min calculated for 42,422 cf (100% of inflow)
Center-of-Mass det. time= 29.5 min (871.5 - 842.0)

Volume	Invert	Avail.Storage	Storage Description
#1	737.28'	20,315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

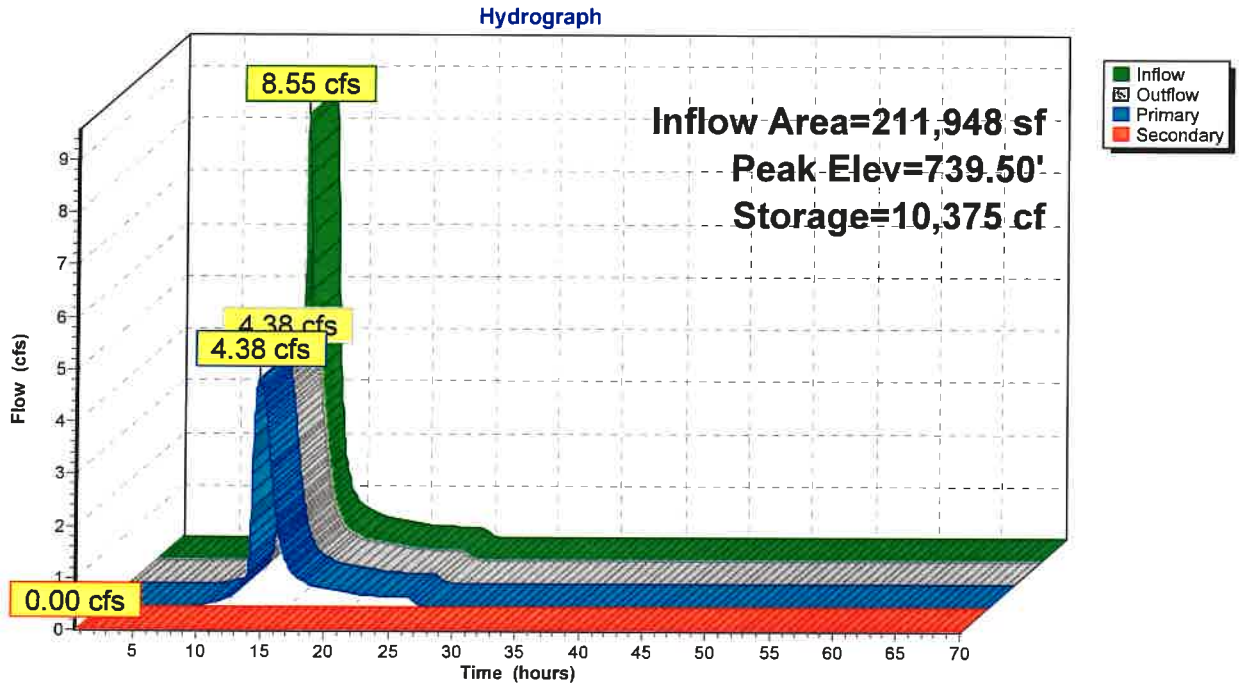
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
737.28	0	0	0
738.00	5,050	1,818	1,818
739.00	5,920	5,485	7,303
740.00	6,840	6,380	13,683
740.80	9,740	6,632	20,315

Device	Routing	Invert	Outlet Devices
#1	Primary	737.25'	**12.0" Round Culvert** L= 16.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 737.25' / 737.17' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	737.28'	**12.0" Round Culvert** L= 6.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 737.28' / 737.25' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 1	740.60'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	740.60'	**140.0 deg x 20.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=4.37 cfs @ 12.73 hrs HW=739.50' (Free Discharge)
└**1=Culvert** (Passes 4.37 cfs of 4.41 cfs potential flow)
  ├**2=Culvert** (Inlet Controls 4.37 cfs @ 5.57 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=737.28' (Free Discharge)
└**4=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 3P: Detention - South



Summary for Pond 5P: Detention - West

Inflow Area = 484,656 sf, 26.54% Impervious, Inflow Depth = 1.91" for 25-Year event
Inflow = 17.15 cfs @ 12.29 hrs, Volume= 77,149 cf
Outflow = 1.39 cfs @ 14.25 hrs, Volume= 77,149 cf, Atten= 92%, Lag= 117.9 min
Primary = 1.39 cfs @ 14.25 hrs, Volume= 77,149 cf
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Peak Elev= 740.70' @ 14.25 hrs Surf.Area= 17,071 sf Storage= 41,620 cf

Plug-Flow detention time= 350.5 min calculated for 77,105 cf (100% of inflow)
Center-of-Mass det. time= 350.7 min (1,206.3 - 855.6)

Volume	Invert	Avail.Storage	Storage Description
#1	736.61'	85,179 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

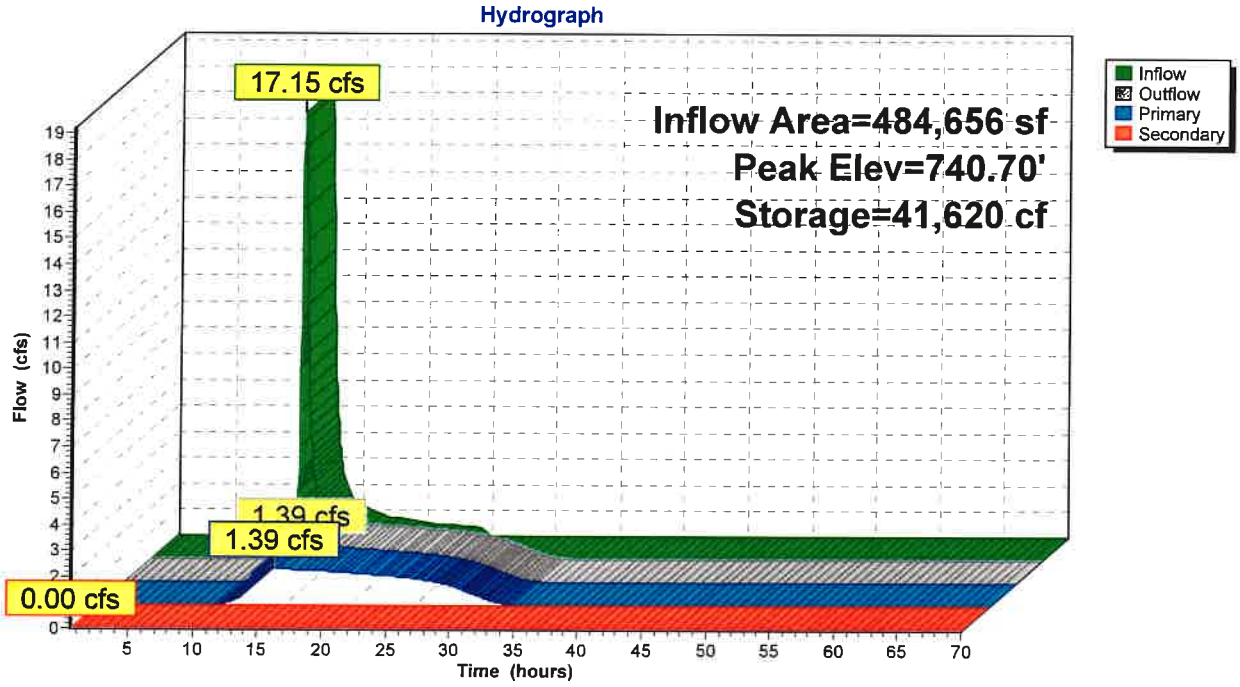
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
736.61	0	0	0
737.00	4,250	829	829
738.00	5,210	4,730	5,559
739.00	13,930	9,570	15,129
740.00	15,990	14,960	30,089
741.00	17,540	16,765	46,854
742.00	19,150	18,345	65,199
743.00	20,810	19,980	85,179

Device	Routing	Invert	Outlet Devices
#1	Primary	736.57'	**6.0" Round Culvert** L= 39.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 736.57' / 736.45' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	736.61'	**6.0" Round Culvert** L= 15.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 736.61' / 736.57' S= 0.0027 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	742.30'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	742.50'	**140.0 deg x 20.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=1.39 cfs @ 14.25 hrs HW=740.70' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.39 cfs @ 7.10 fps)
└**2=Culvert** (Passes 1.39 cfs of 1.63 cfs potential flow)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=736.61' (Free Discharge)
└**4=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 5P: Detention - West



Time span=0.50-70.00 hrs, dt=0.04 hrs, 1739 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Proposed Site - South Runoff Area=211,948 sf 31.78% Impervious Runoff Depth=3.68"
Flow Length=1,290' Tc=38.6 min CN=86 Runoff=13.03 cfs 65,036 cf

Subcatchment4S: Proposed Site - West Runoff Area=484,656 sf 26.54% Impervious Runoff Depth=3.09"
Flow Length=1,538' Tc=33.0 min CN=80 Runoff=28.02 cfs 124,979 cf

Subcatchment5S: Existing Site Runoff Area=733,573 sf 0.00% Impervious Runoff Depth=2.82"
Flow Length=662' Slope=0.0100 '/' Tc=41.7 min CN=77 Runoff=32.81 cfs 172,178 cf

Pond 3P: Detention - South Peak Elev=740.56' Storage=18,046 cf Inflow=13.03 cfs 65,036 cf
Primary=5.56 cfs 65,036 cf Secondary=0.00 cfs 0 cf Outflow=5.56 cfs 65,036 cf

Pond 5P: Detention - West Peak Elev=742.44' Storage=73,875 cf Inflow=28.02 cfs 124,979 cf
Primary=1.69 cfs 124,979 cf Secondary=0.00 cfs 0 cf Outflow=1.69 cfs 124,979 cf

Total Runoff Area = 1,430,177 sf Runoff Volume = 362,193 cf Average Runoff Depth = 3.04"
86.30% Pervious = 1,234,194 sf 13.70% Impervious = 195,983 sf

Summary for Subcatchment 1S: Proposed Site - South

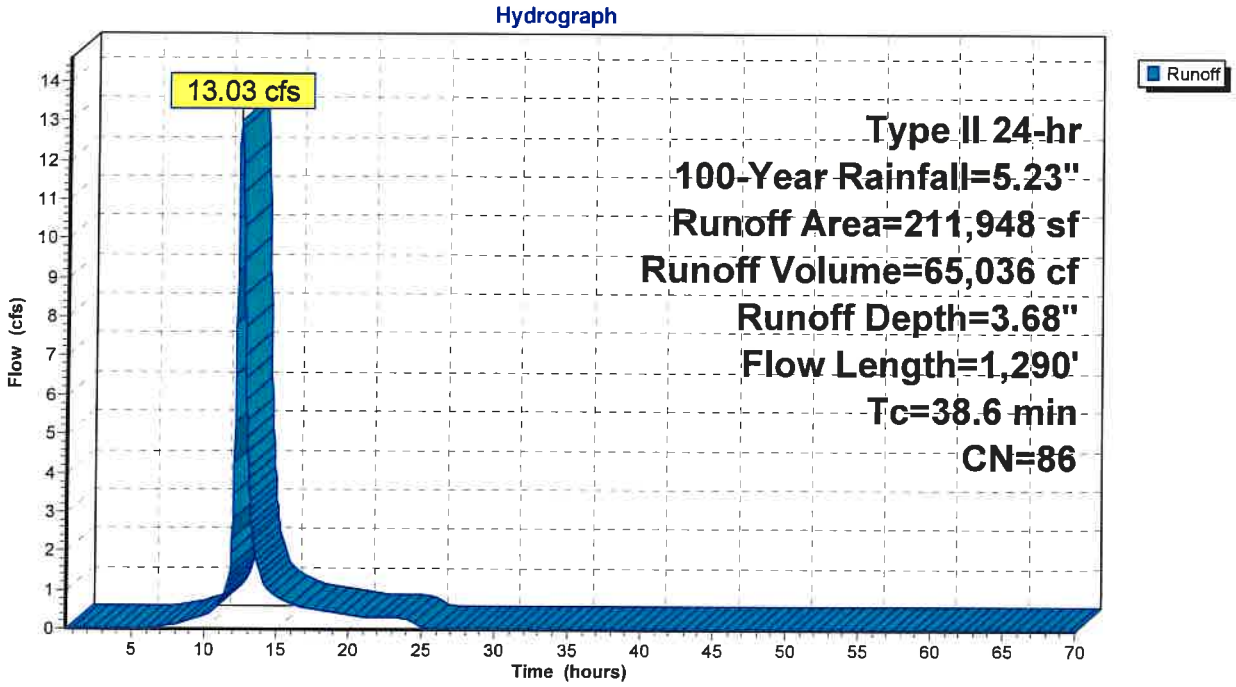
Runoff = 13.03 cfs @ 12.34 hrs, Volume= 65,036 cf, Depth= 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 100-Year Rainfall=5.23"

	Area (sf)	CN	Description
	144,591	80	>75% Grass cover, Good, HSG D
*	33,877	98	Roads
	28,000	98	Roofs, HSG D
*	5,480	98	Sidewalks
	211,948	86	Weighted Average
	144,591		68.22% Pervious Area
	67,357		31.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.1	100	0.0050	0.06		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
2.2	64	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	497	0.0020	2.03	1.59	**Pipe Channel, 12" Pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
2.2	304	0.0020	2.35	2.89	**Pipe Channel, 15" Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
2.0	325	0.0020	2.66	4.70	**Pipe Channel, 18" Pipe** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
38.6	1,290	Total			

Subcatchment 1S: Proposed Site - South



Summary for Subcatchment 4S: Proposed Site - West

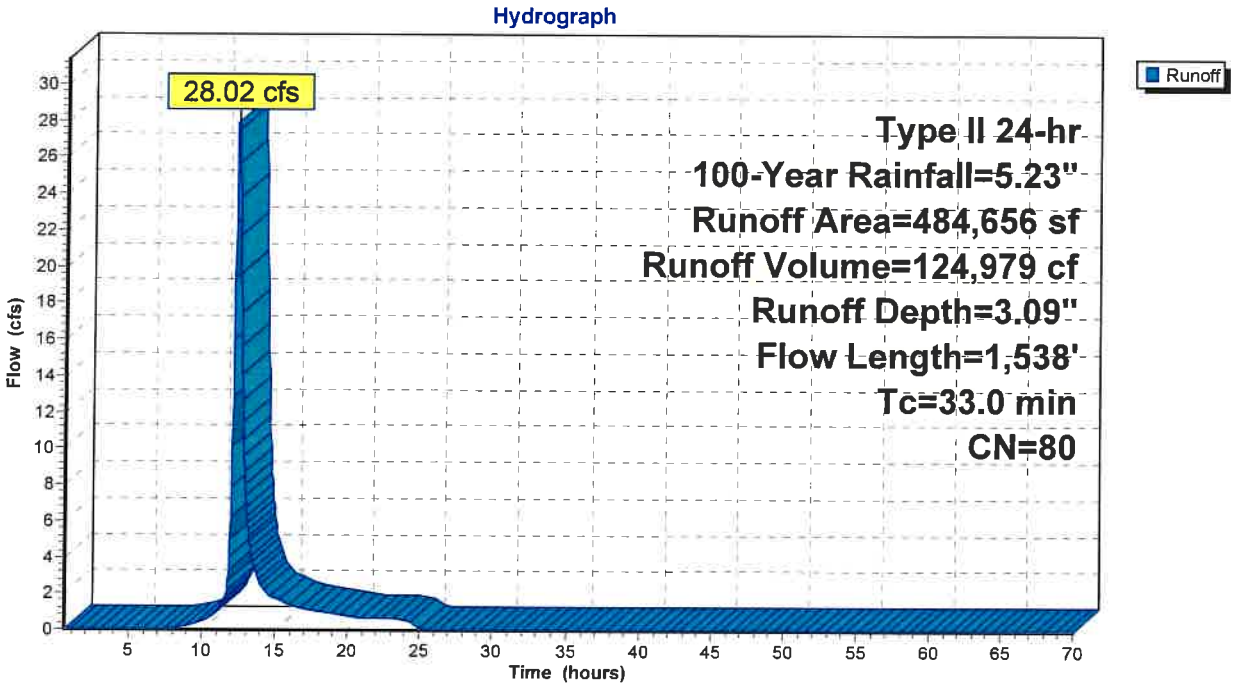
Runoff = 28.02 cfs @ 12.28 hrs, Volume= 124,979 cf, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 100-Year Rainfall=5.23"

	Area (sf)	CN	Description
	356,030	74	>75% Grass cover, Good, HSG C
*	55,405	98	Roads
	60,000	98	Roofs, HSG D
*	13,221	98	Sidewalks
	484,656	80	Weighted Average
	356,030		73.46% Pervious Area
	128,626		26.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
0.7	25	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.2	209	0.0030	1.57	0.31	**Pipe Channel, 6" Pipe** 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.013 Corrugated PE, smooth interior
1.6	144	0.0020	1.55	0.54	**Pipe Channel, 8" Pipe** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013 Corrugated PE, smooth interior
0.2	28	0.0020	2.35	2.89	**Pipe Channel, 15" Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
4.9	780	0.0020	2.66	4.70	**Pipe Channel, 18" Pipe** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
2.1	252	0.0020	2.03	1.59	**Pipe Channel, 24" Pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
33.0	1,538	Total			

Subcatchment 4S: Proposed Site - West



Summary for Subcatchment 5S: Existing Site

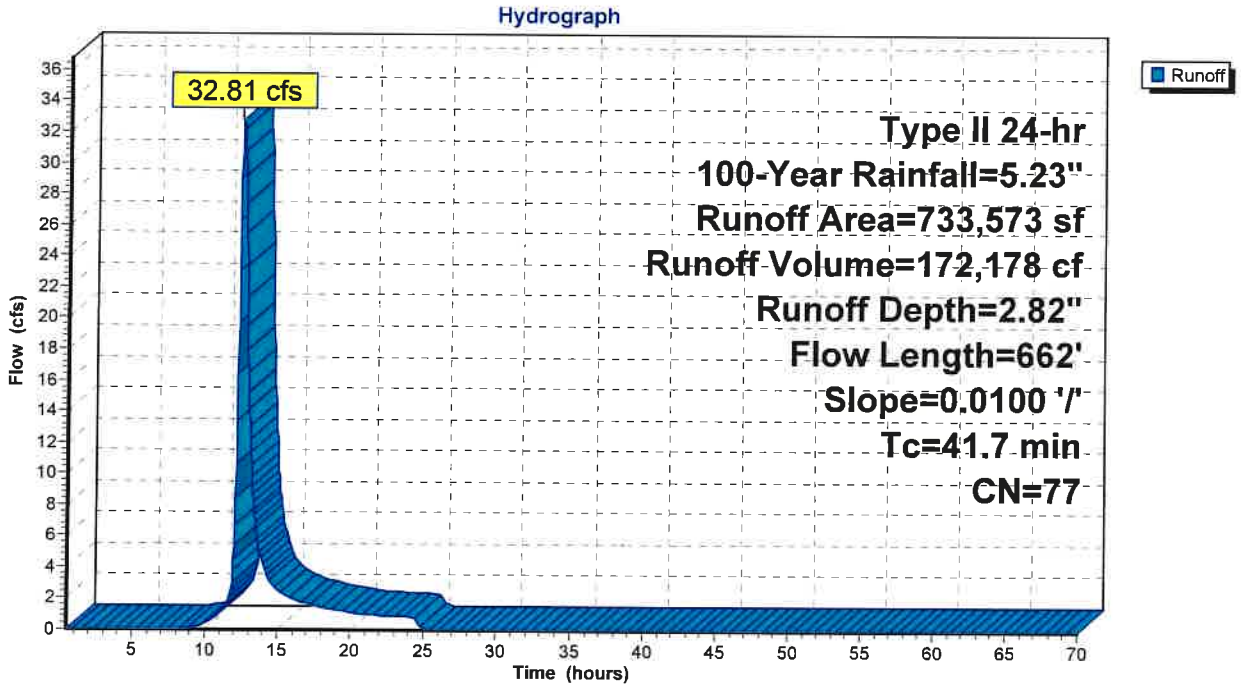
Runoff = 32.81 cfs @ 12.39 hrs, Volume= 172,178 cf, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Type II 24-hr 100-Year Rainfall=5.23"

Area (sf)	CN	Description
733,573	77	Woods, Good, HSG D
733,573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	150	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.50"
12.2	512	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
41.7	662	Total			

Subcatchment 5S: Existing Site



Summary for Pond 3P: Detention - South

Inflow Area = 211,948 sf, 31.78% Impervious, Inflow Depth = 3.68" for 100-Year event
Inflow = 13.03 cfs @ 12.34 hrs, Volume= 65,036 cf
Outflow = 5.56 cfs @ 12.80 hrs, Volume= 65,036 cf, Atten= 57%, Lag= 27.9 min
Primary = 5.56 cfs @ 12.80 hrs, Volume= 65,036 cf
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Peak Elev= 740.56' @ 12.80 hrs Surf.Area= 8,856 sf Storage= 18,046 cf

Plug-Flow detention time= 35.8 min calculated for 64,999 cf (100% of inflow)
Center-of-Mass det. time= 35.8 min (865.6 - 829.9)

Volume	Invert	Avail.Storage	Storage Description
#1	737.28'	20,315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

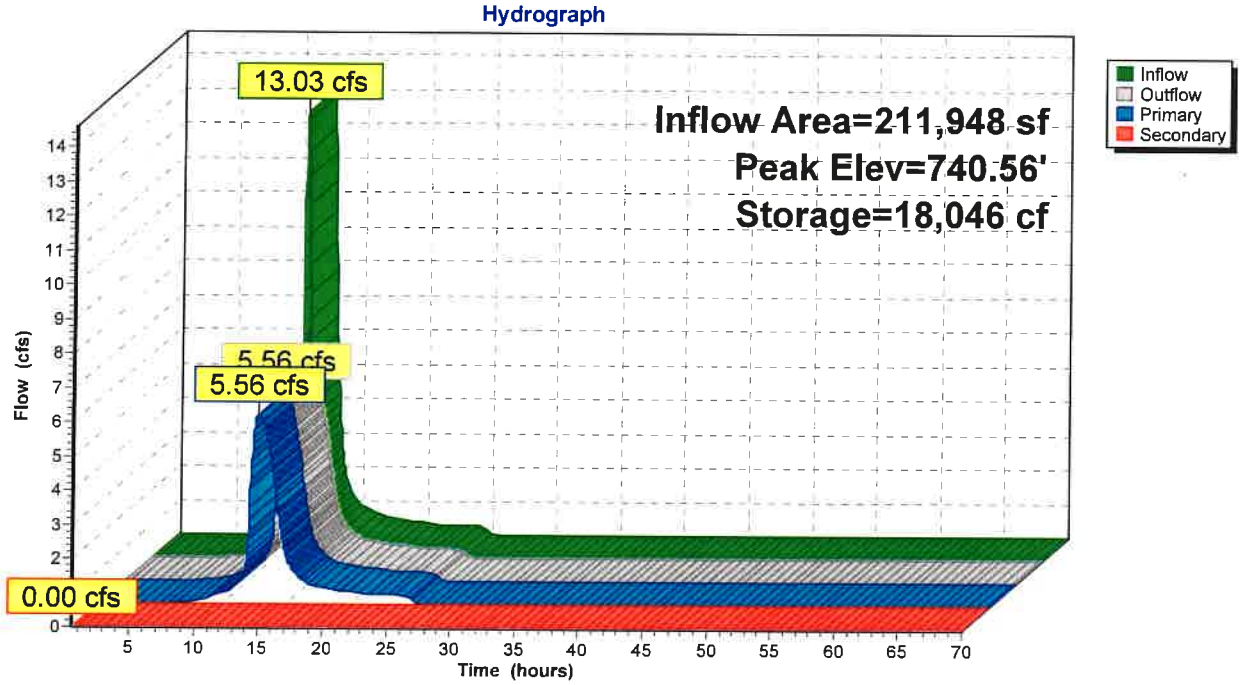
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
737.28	0	0	0
738.00	5,050	1,818	1,818
739.00	5,920	5,485	7,303
740.00	6,840	6,380	13,683
740.80	9,740	6,632	20,315

Device	Routing	Invert	Outlet Devices
#1	Primary	737.25'	**12.0" Round Culvert** L= 16.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 737.25' / 737.17' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	737.28'	**12.0" Round Culvert** L= 6.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 737.28' / 737.25' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 1	740.60'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	740.60'	**140.0 deg x 20.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=5.56 cfs @ 12.80 hrs HW=740.56' (Free Discharge)
└**1=Culvert** (Passes 5.56 cfs of 5.59 cfs potential flow)
  ├**2=Culvert** (Inlet Controls 5.56 cfs @ 7.08 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=737.28' (Free Discharge)
└**4=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 3P: Detention - South



Summary for Pond 5P: Detention - West

Inflow Area = 484,656 sf, 26.54% Impervious, Inflow Depth = 3.09" for 100-Year event
Inflow = 28.02 cfs @ 12.28 hrs, Volume= 124,979 cf
Outflow = 1.69 cfs @ 14.96 hrs, Volume= 124,979 cf, Atten= 94%, Lag= 160.8 min
Primary = 1.69 cfs @ 14.96 hrs, Volume= 124,979 cf
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.50-70.02 hrs, dt= 0.04 hrs
Peak Elev= 742.44' @ 14.96 hrs Surf.Area= 19,888 sf Storage= 73,875 cf

Plug-Flow detention time= 511.5 min calculated for 124,907 cf (100% of inflow)
Center-of-Mass det. time= 511.8 min (1,353.6 - 841.8)

Volume	Invert	Avail.Storage	Storage Description
#1	736.61'	85,179 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

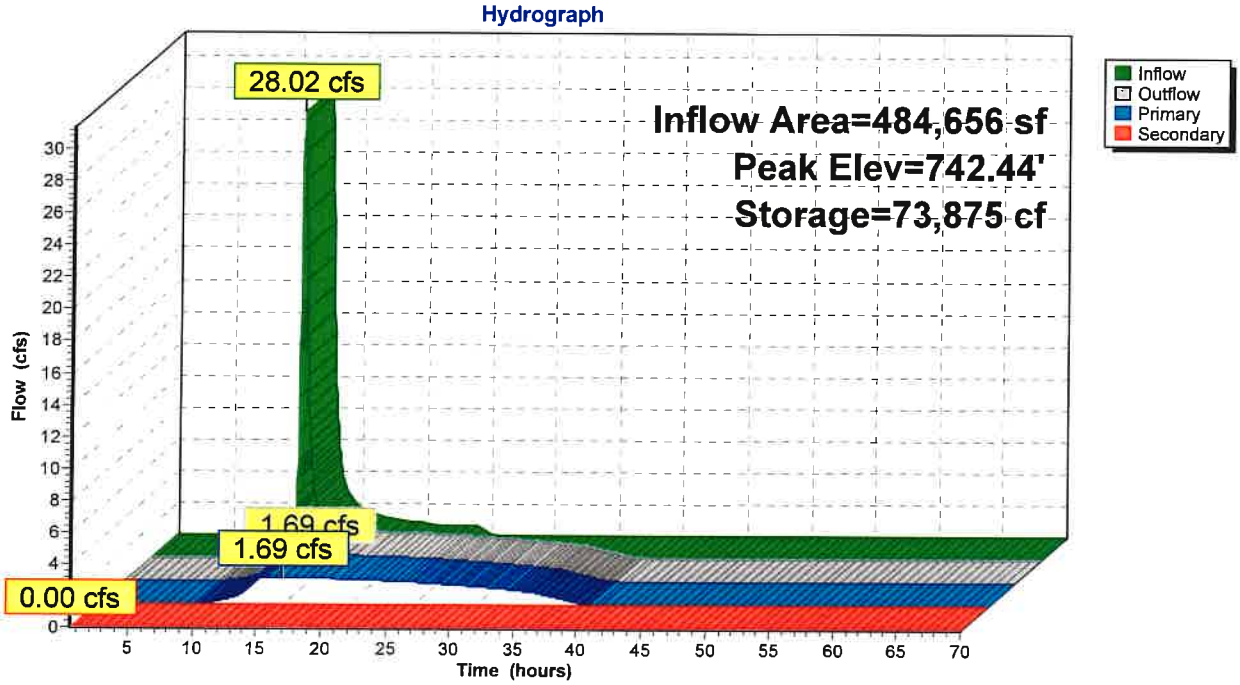
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
736.61	0	0	0
737.00	4,250	829	829
738.00	5,210	4,730	5,559
739.00	13,930	9,570	15,129
740.00	15,990	14,960	30,089
741.00	17,540	16,765	46,854
742.00	19,150	18,345	65,199
743.00	20,810	19,980	85,179

Device	Routing	Invert	Outlet Devices
#1	Primary	736.57'	**6.0" Round Culvert** L= 39.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 736.57' / 736.45' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	736.61'	**6.0" Round Culvert** L= 15.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 736.61' / 736.57' S= 0.0027 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	742.30'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	742.50'	**140.0 deg x 20.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=1.69 cfs @ 14.96 hrs HW=742.44' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.69 cfs @ 8.60 fps)
  ├**2=Culvert** (Passes < 1.97 cfs potential flow)
  └**3=Orifice/Grate** (Passes < 1.44 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=736.61' (Free Discharge)
└**4=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

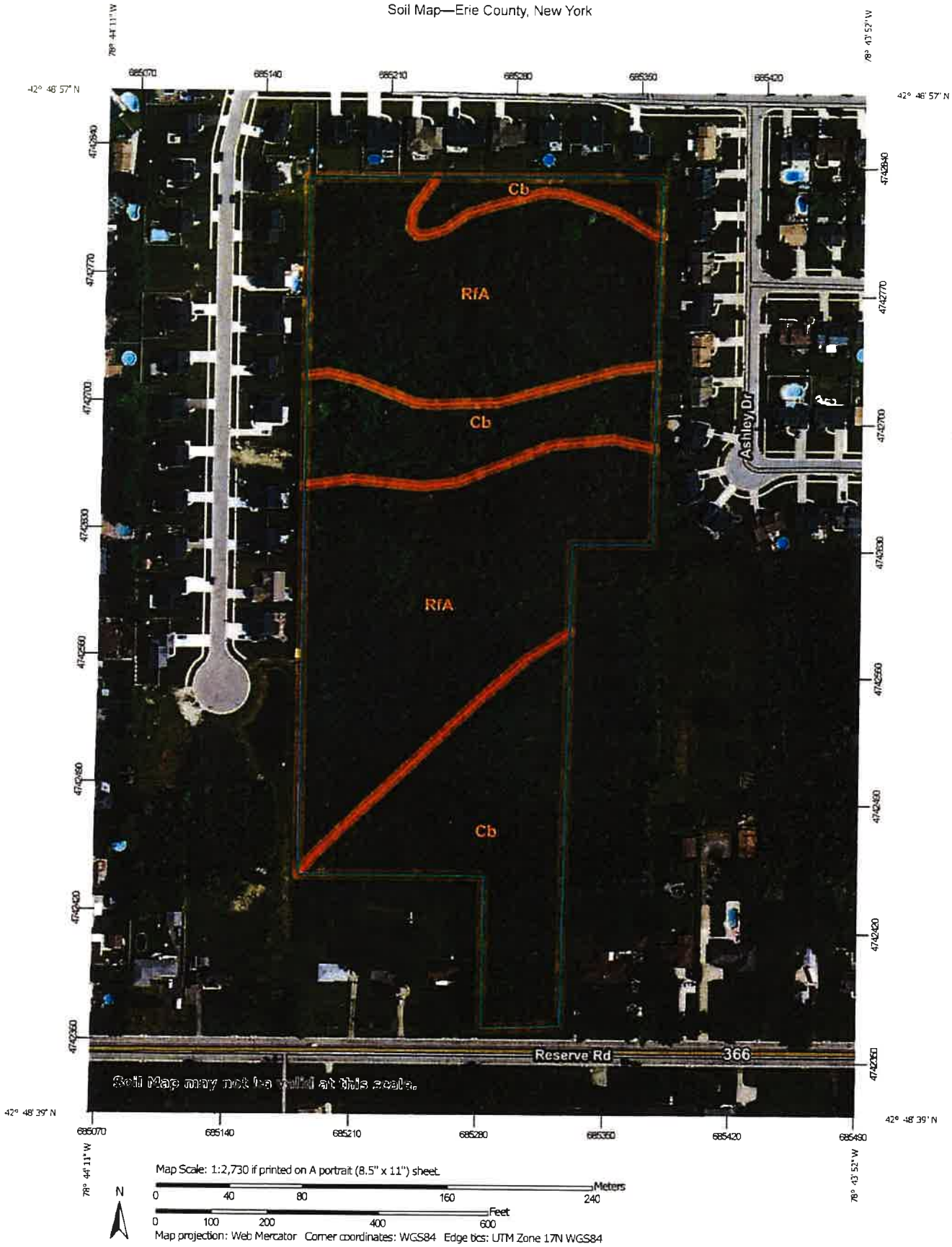
Pond 5P: Detention - West



Appendix E

Soil Information

Soil Map—Erie County, New York



MAP LEGEND

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

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Erie County, New York
Survey Area Data: Version 20, Jun 11, 2020

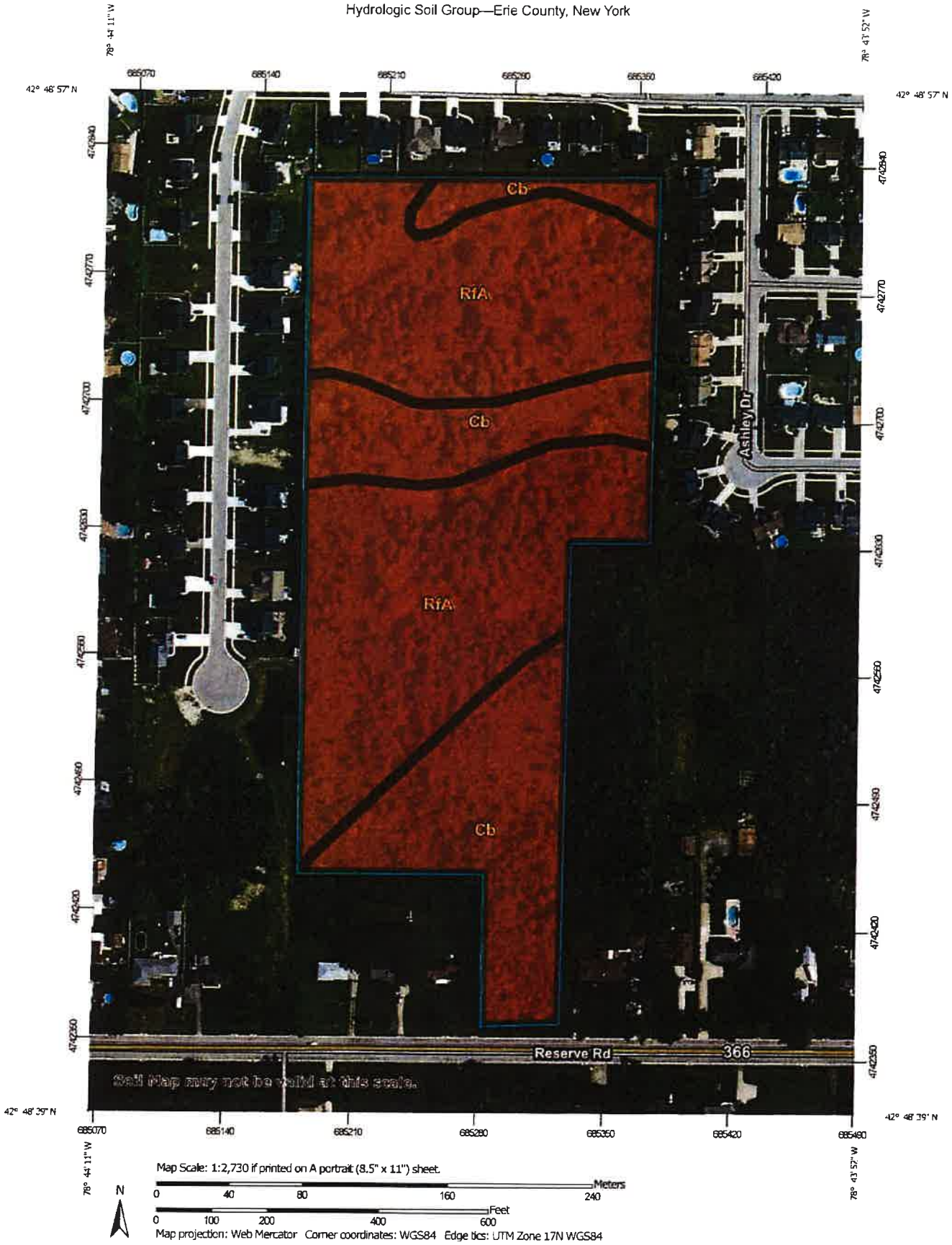
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 14, 2019—Jul 27, 2019

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cb	Canadice silt loam, channery till substratum	6.2	35.8%
RfA	Remsen silty clay loam, 0 to 3 percent slopes	11.1	64.2%
Totals for Area of Interest		**17.3**	**100.0%**


78° 44' 11" W
78° 43' 52" W
42° 48' 57" N
42° 48' 39" N
685070
685140
685210
685280
685350
685420
685480
4742840
4742770
4742700
4742630
4742560
4742490
4742420
4742350
Cb
RfA
Cb
RfA
Cb
Ashley Dr
Reserve Rd
366
Soil map may not be valid at this scale.
Map Scale: 1:2,730 if printed on A portrait (8.5" x 11") sheet.
Meters
0
40
80
160
240
N
Feet
0
100
200
400
600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

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

Soils

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Erie County, New York
Survey Area Data: Version 20, Jun 11, 2020

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

Date(s) aerial images were photographed: Jul 14, 2019—Jul 27, 2019

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Cb	Canadice silt loam, channery till substratum	D	6.2	35.8%
RfA	Remsen silty clay loam, 0 to 3 percent slopes	D	11.1	64.2%
Totals for Area of Interest			**17.3**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix E

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

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

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

Authorized Signature

1-23-20

Date

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

PREFACE

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

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

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

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

Table of Contents

Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

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

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

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

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

B. Effluent Limitations Applicable to Discharges from Construction Activities

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

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

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

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

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

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

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

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

   (v) *Minimize* sediment *discharges* from the site;

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

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

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

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

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

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

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

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

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

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

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

e. **Prohibited *Discharges*.** The following *discharges* are prohibited:

(i) Wastewater from washout of concrete;

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

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

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

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

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

C. Post-construction Stormwater Management Practice Requirements

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

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

a. Sizing Criteria for New Development

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

c. Sizing Criteria for Redevelopment Activity

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

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

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

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

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

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

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

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

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

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

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

D. Maintaining Water Quality

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

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

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

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

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

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

E. Eligibility Under This General Permit

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

d. Documentation that:

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

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

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

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

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

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

B. Notice of Intent (NOI) Submittal

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

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

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

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

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

C. Permit Authorization

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

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

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

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

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

c. the final SWPPP has been prepared, and

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

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

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

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

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

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

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

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

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

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

D. General Requirements For Owners or Operators With Permit Coverage

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

F. Change of Owner or Operator

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

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

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

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

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

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

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

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

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

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

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

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

d. to document the final construction conditions.

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

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

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

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

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

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

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

B. Required SWPPP Contents

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

e. Infiltration test results, when required; and

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

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

C. Required SWPPP Components by Project Type

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

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

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

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

B. Contractor Maintenance Inspection Requirements

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

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

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

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

C. Qualified Inspector Inspection Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

a. Date and time of inspection;

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

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

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

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

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

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

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

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

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

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

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

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

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

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

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

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

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

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

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

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

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

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

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

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

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

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

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

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

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

B. Addresses

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

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

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

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

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

B. Continuation of the Expired General Permit

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

C. Enforcement

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

D. Need to Halt or Reduce Activity Not a Defense

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

E. Duty to Mitigate

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

F. Duty to Provide Information

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

G. Other Information

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

H. Signatory Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

I. Property Rights

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

J. Severability

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

K. Requirement to Obtain Coverage Under an Alternative Permit

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

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

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

L. Proper Operation and Maintenance

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

M. Inspection and Entry

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

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

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

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

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

N. Permit Actions

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

O. Definitions

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

P. Re-Opener Clause

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

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

Q. Penalties for Falsification of Forms and Reports

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

R. Other Permits

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

APPENDIX A – Acronyms and Definitions

Acronyms

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

Definitions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX B – Required SWPPP Components by Project Type

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

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

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

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

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

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

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

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

Table 2

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

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

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

Table 2 (Continued)

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

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

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

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

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

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

Figure 1 - New York City Watershed East of the Hudson

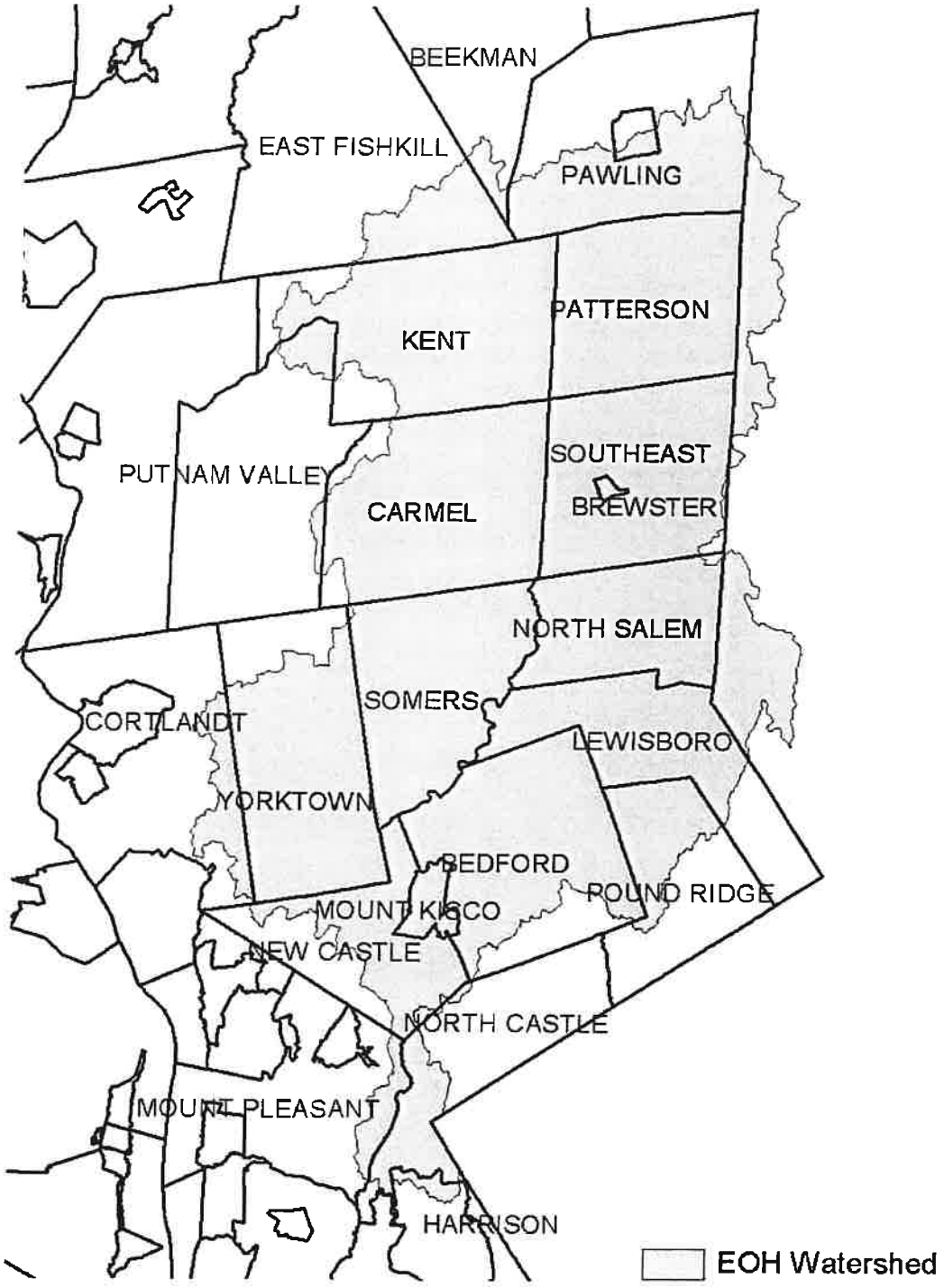


Figure 2 - Onondaga Lake Watershed

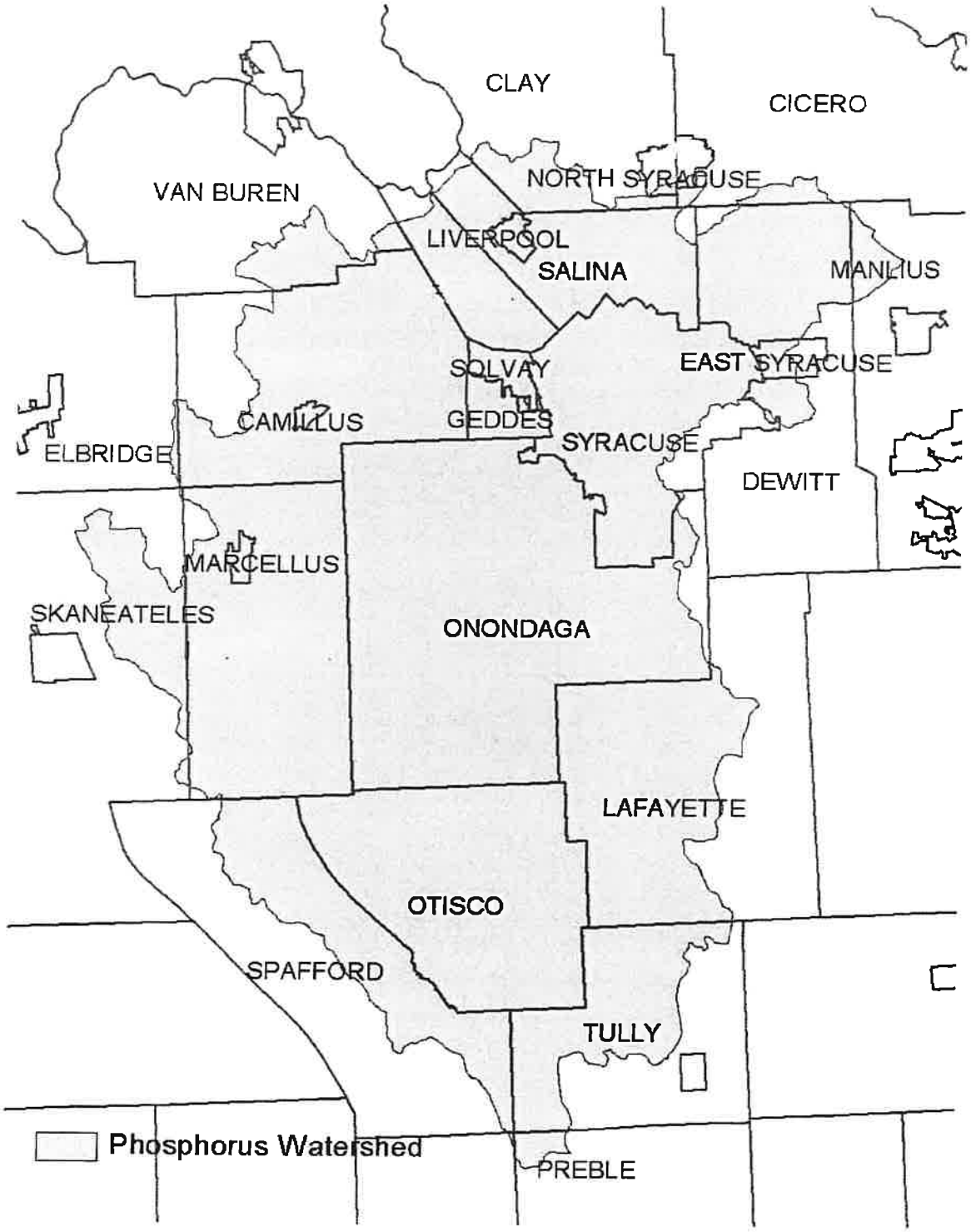


Figure 3 - Greenwood Lake Watershed

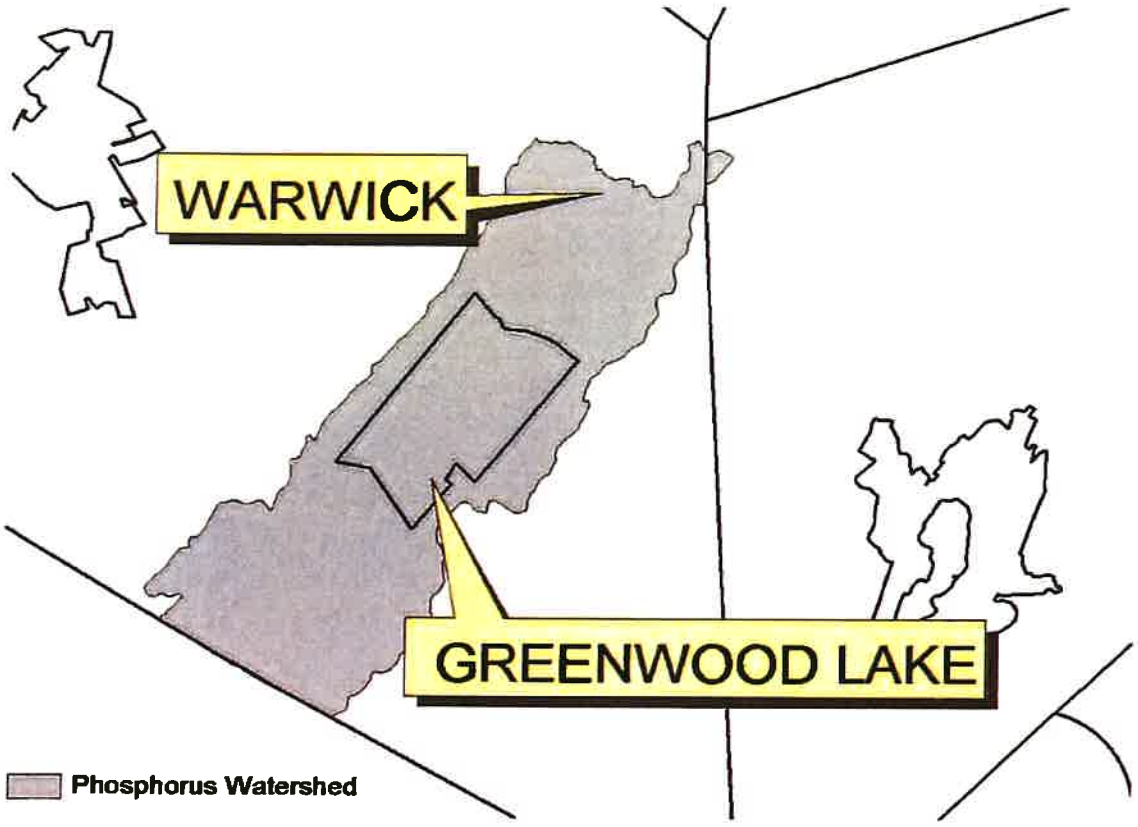


Figure 4 - Oscawana Lake Watershed

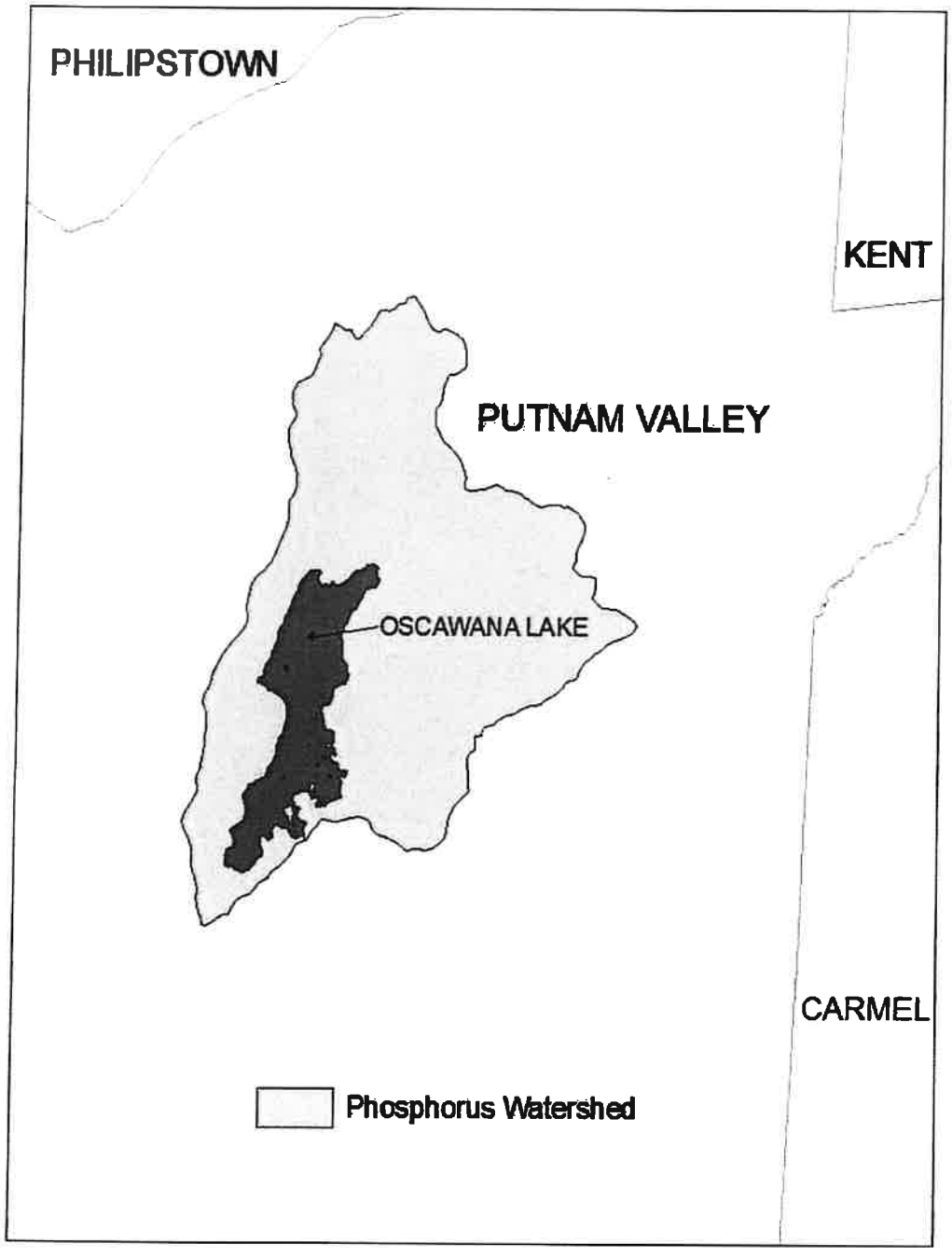
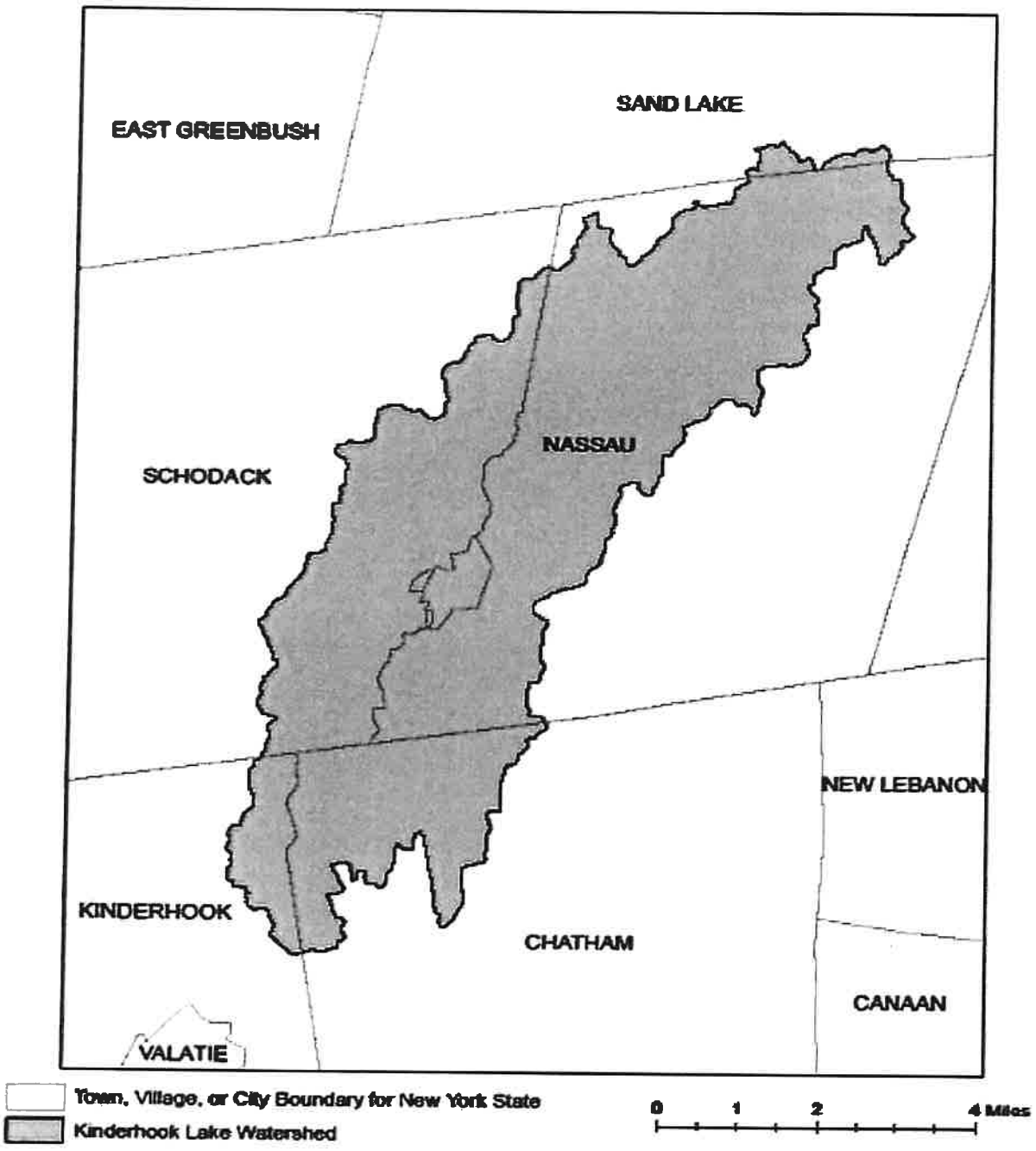


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX F – List of NYS DEC Regional Offices

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

Appendix F

Forms

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION STATEMENT

Reserve Road Subdivision

CONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge storm water. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for storm water discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards."

Note: The contractor shall have at least one NYSDEC trained individual onsite at all times when earthwork and other SWPPP associated work is being performed from each contractor(s) and subcontractor(s). Each contractor(s) and subcontractor(s) shall provide copies of these individuals' certifications to the Town of West Seneca.

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Trained Individual(s) Responsible for Implementation: _____

This form must be signed by a responsible corporate officer or other party meeting the "Signatory Requirements" of the NYSDEC SPDES General Permit

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

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

Project/Site Name: Reserve Road Subdivision

eNOI Submission Number: HP7-GGVC-GRE36

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

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

Owner/Operator First Name M.I. Last Name

Signature

3/26/21

Date

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

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

Project Site Information

Project/Site Name

Reserve Road Subdivision

Owner/Operator Information

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

Nexgen Development II, LLC

Certification Statement – SWPPP Preparer

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

Anthony	J	Pandolfe
First name	MI	Last Name

Signature

3/26/21

Date

Revised: January 2020

Appendix G

NYSDEC Notice of Termination (NOT)

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

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

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a. Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

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

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

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

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

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

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

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

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

Printed Name:	
Title/Position:	
Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued	
VII. Qualified Inspector Certification - Final Stabilization:	
I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.	
Printed Name:	
Title/Position:	
Signature:	Date:
VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):	
I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.	
Printed Name:	
Title/Position:	
Signature:	Date:
IX. Owner or Operator Certification	
I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.	
Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

Appendix H

Construction Documents

Reserve Road Subdivision

Reserve Road

West Seneca, New York

AGENCIES

ENGINEERING DEPT./SANITARY SEWER
NAME/TITLE: STEVEN TANNER, P.E., TOWN ENGINEER
COMPANY/DEPT.: TOWN OF WEST SENECA ENGINEERING DEPT.
ADDRESS: 1250 UNION ROAD
WEST SENECA, NEW YORK 14224
TELEPHONE 716-558-3220

CODE ENFORCEMENT DEPT.
NAME/TITLE: JEFFREY SCHIEBER, CODE ENFORCEMENT OFFICER
COMPANY/DEPT.: TOWN OF WEST SENECA CODE ENFORCEMENT DEPT.
ADDRESS: 1250 UNION ROAD
WEST SENECA, NEW YORK 14224
TELEPHONE 716-558-3237

ECDOH
NAME/TITLE:
COMPANY/DEPT.: ERIE COUNTY DEPARTMENT OF HEALTH
ADDRESS: 503 KENSINGTON AVE
BUFFALO, NEW YORK 14214
TELEPHONE 716-961-6854

NYSDEC
NAME/TITLE:
COMPANY/DEPT: NEW YORK STATE DEPT. OF ENVIRONMENTAL CONSERVATION
ADDRESS: 270 MICHIGAN AVENUE
BUFFALO, NEW YORK 14203
TELEPHONE 716-851-7070

UTILITIES

NATURAL GAS
NAME/TITLE: DAVID KOZLOWSKI
COMPANY/DEPT.: NATIONAL FUEL GAS
ADDRESS: ORCHARD PARK, NEW YORK 14127
TELEPHONE 716-667-5503

TELEPHONE COMPANY
NAME/TITLE: JIM MURPHY
COMPANY/DEPT: VERIZON
ADDRESS: 65 FRANKLIN STREET RM 601
BUFFALO, NEW YORK 14202
TELEPHONE 716-840-8698

ELECTRIC
NAME/TITLE: DAN LOSEL
COMPANY/DEPT.: NEW YORK STATE ELECTRIC & GAS
ADDRESS: HAMBURG, NEW YORK 14075
TELEPHONE 716-649-5556

WATER
NAME/TITLE: RUSS STOLL
COMPANY/DEPT.: ERIE COUNTY WATER AUTHORITY
ADDRESS: 3030 UNION ROAD
CHEEKTOWAGA, NEW YORK 14227
TELEPHONE 716-684-1510

DIG SAFELY NEW YORK
TELEPHONE 811

DESIGN CONSULTANTS

PROJECT SURVEYOR
NAME/TITLE:
COMPANY/DEPT.: MILLARD, MACKAY & DELLES LAND SURVEYORS, LLP
ADDRESS: 150 AERO DRIVE
BUFFALO, NEW YORK 14225
TELEPHONE 716-631-5140

OWNER/DEVELOPER

NAME: NEXGEN DEVELOPMENT II, LLC
ADDRESS 500 BUFFALO ROAD
EAST AURORA, NEW YORK 14052
CONTACT: JIM MILKS & MARK KOLLER
TELEPHONE (716) 818-4504 / (716) 250-8132

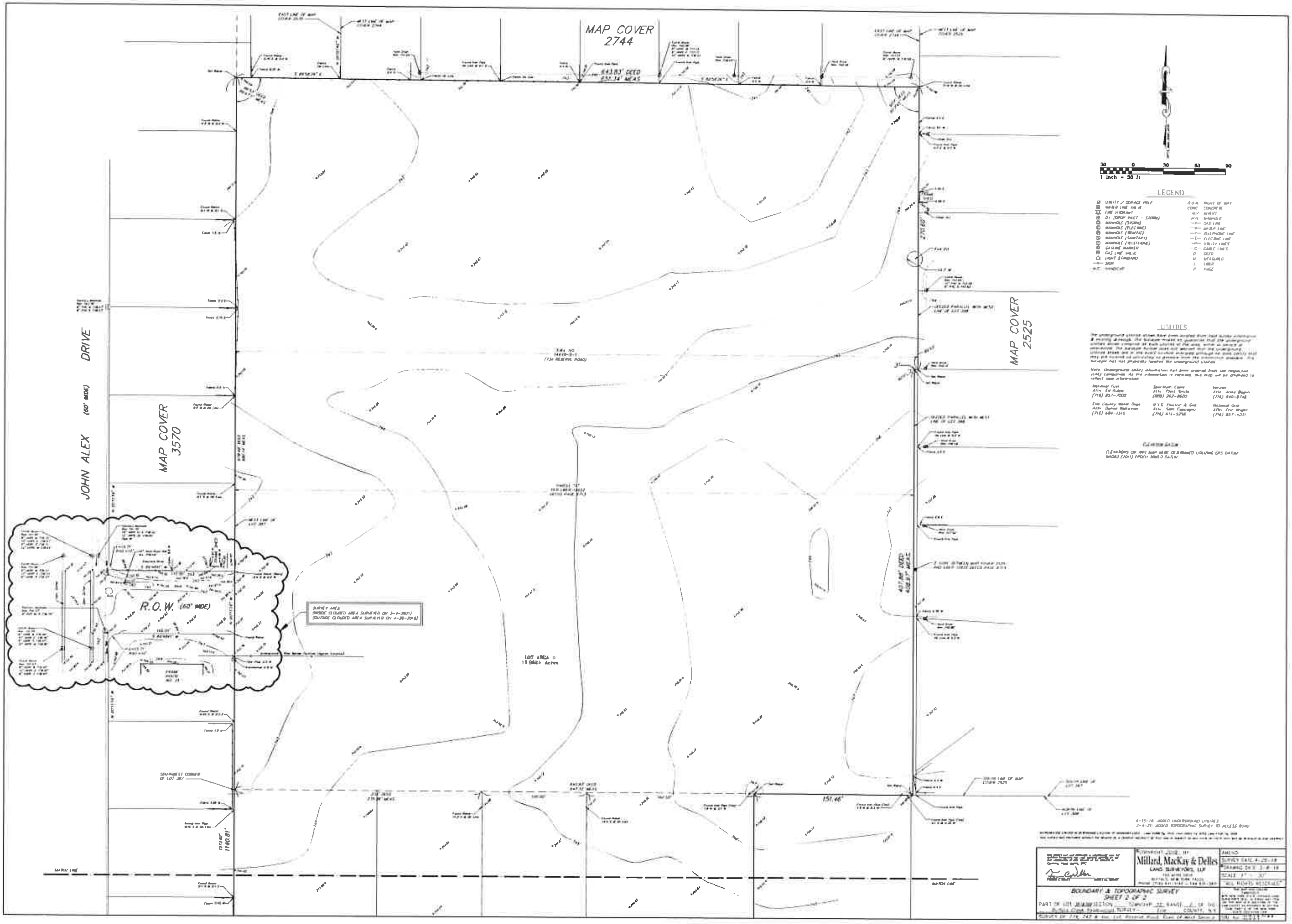
LOCATION MAP
NOT TO SCALE

Carmina • Wood • Morris DPC
467 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3405
F 716.842.0263

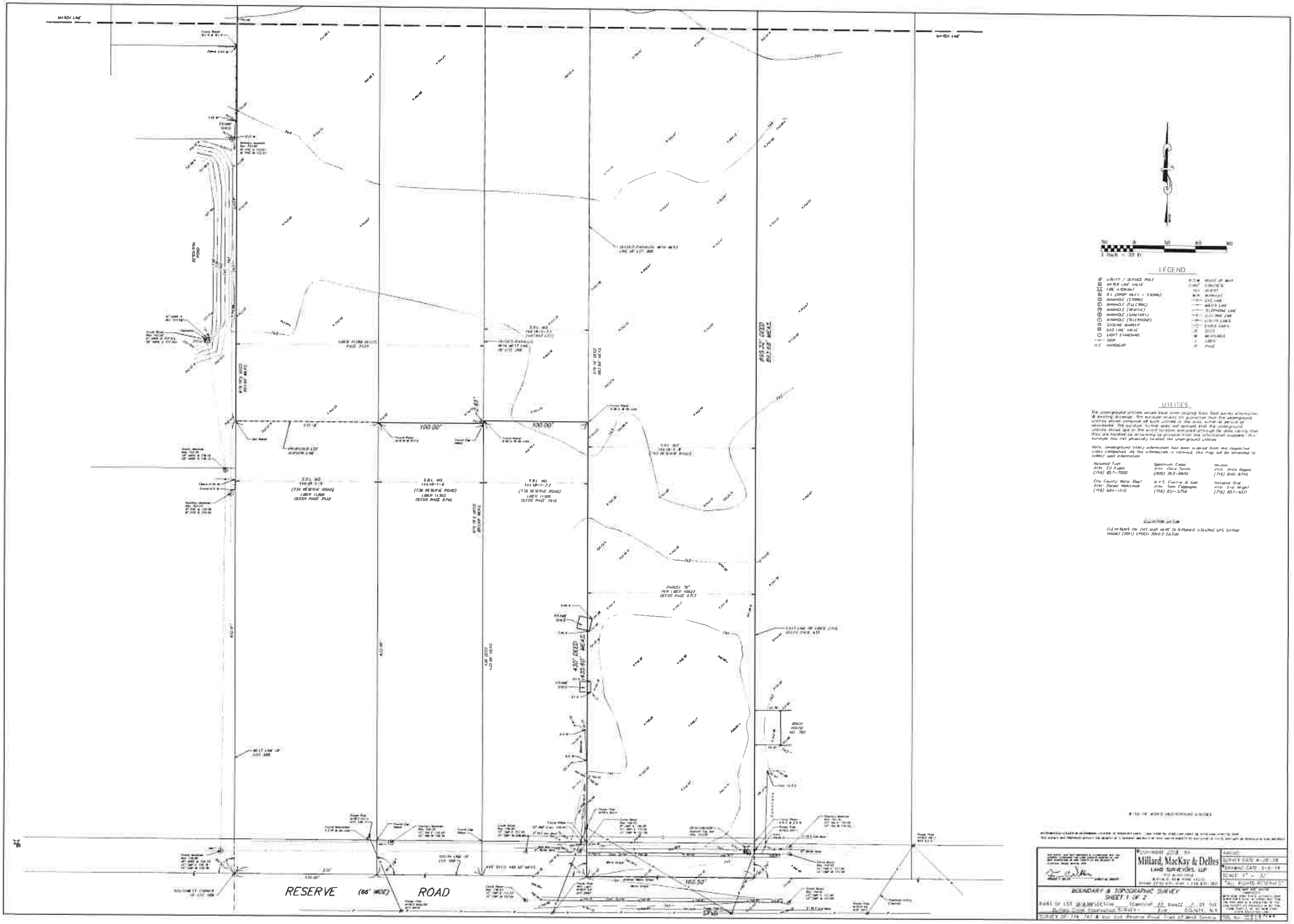
March 2021

REVISED JULY 2021

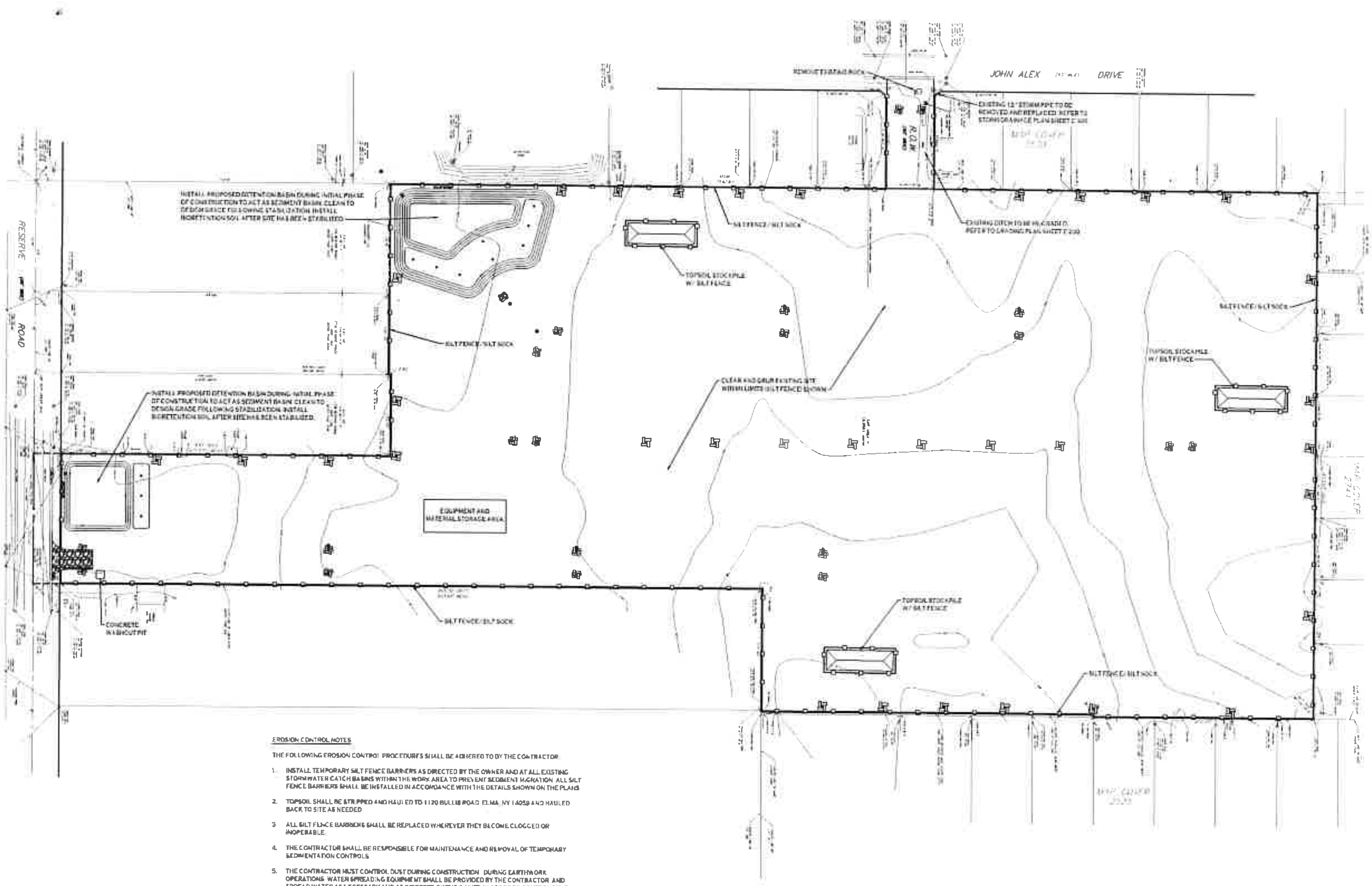
DRAWING NO.	DRAWING TITLE
C-1	COVER SHEET
–	BOUNDARY & TOPOGRAPHIC SURVEY (Prepared by MMD)
–	BOUNDARY & TOPOGRAPHIC SURVEY (Prepared by MMD)
C-001	DEMOLITION & EROSION CONTROL PLAN
C-100	SITE PLAN – OVERALL
C-101	SITE PLAN – SOUTH
C-102	SITE PLAN – NORTH
C-200	GRADING PLAN – SOUTH
C-201	GRADING PLAN – NORTH
C-300	STORM DRAINAGE PLAN – SOUTH
C-301	STORM DRAINAGE PLAN – NORTH
C-302	PAVING & DRAINAGE PROFILES
C-303	PAVING & DRAINAGE PROFILES
C-304	STORM DRAINAGE DETAILS
C-400	UTILITY PLAN – SOUTH
C-401	UTILITY PLAN – NORTH
C-402	UTILITY PROFILES
C-403	UTILITY PROFILES
L-100	LANDSCAPE PLAN
–	WEST SENECA EROSION AND SEDIMENT CONTROL DETAILS
–	WEST SENECA PAVING DETAILS
–	WEST SENECA STORM SEWER DETAILS
–	WEST SENECA SANITARY SEWER DETAILS
–	WEST SENECA WATER LINE DETAILS



MAP COVER
2744
MAP COVER
2525
MAP COVER
3570
JOHN ALEX (60' WIDE) DRIVE
843.83' DEED
851.34' MEAS
407.86' DEED
408.97' MEAS
151.46'
R.O.W. (60' WIDE)
LOT AREA =
18.9621 Acres
SURVEY AREA
(INSIDE CLOUDED AREA SURVEYED ON 3-4-2021)
(OUTSIDE CLOUDED AREA SURVEYED ON 4-28-2016)
MATCH LINE
1 inch = 30 ft
LEGEND
UTILITIES
ELEVATION DATUM
6-15-18 ADDED UNDERGROUND UTILITIES
3-4-21 ADDED TOPOGRAPHIC SURVEY TO ACCESS ROAD
Millard, MacKay & Delles
LAND SURVEYORS, LLP
BOUNDARY & TOPOGRAPHIC SURVEY
SHEET 2 OF 2
AMEND
"ALL RIGHTS RESERVED"



MATCH LINE
LEGEND
UTILITIES
RESERVE (66' WIDE) ROAD
100.00'
100.00'
430' DEED
435.60' MEAS.
893.32' DEED
160.50'
BRICK HOUSE
Millard, MacKay & Delles
LAND SURVEYORS, LLP
BOUNDARY & TOPOGRAPHIC SURVEY
SHEET 1 OF 2
COUNTY, N.Y.



DEMO & EROSION CONTROL PLAN

SCALE: 1"=60'

EROSION CONTROL NOTES

THE FOLLOWING EROSION CONTROL PROCEDURES SHALL BE ADHERED TO BY THE CONTRACTOR

1. INSTALL TEMPORARY SILT FENCE BARRIERS AS DIRECTED BY THE OWNER AND AT ALL EXISTING STORMWATER CATCH BASINS WITHIN THE WORK AREA TO PREVENT SEDIMENT MIGRATION. ALL SILT FENCE BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS
2. TOPSOIL SHALL BE STRIPPED AND HAULED TO 1120 BULLIS ROAD, ELMA, NY 14059 AND HAULED BACK TO SITE AS NEEDED
3. ALL SILT FENCE BARRIERS SHALL BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS
5. THE CONTRACTOR MUST CONTROL DUST DURING CONSTRUCTION. DURING EARTHWORK OPERATIONS, WATER SPREADING EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR AND SPREAD WATER AS NECESSARY AND AS DIRECTED BY THE OWNER IN ORDER TO CONTROL DUST.
6. DIRT OR DEBRIS LEFT ON LOCAL PUBLIC ROADS AS A RESULT OF THIS CONSTRUCTION PROJECT SHALL BE REMOVED AND ROAD SURFACES CLEANED BY THE CONTRACTOR ON A DAILY BASIS
7. ALL DISTURBED AREAS (EXCEPT AREAS TO BE PAVED OR BUILT UPON) SHALL BE TOPSOILED TO A MINIMUM 6" DEPTH AND SEEDED IMMEDIATELY AFTER FINE GRADING TAKES PLACE AND AS SOON AS PHYSICALLY POSSIBLE
8. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF DOWNSTREAM STORM SEWERS, DITCHES, AND CULVERTS. SILT BUILDUP FOUND TO BE A RESULT OF THIS SITE CONSTRUCTION WORK SHALL BE REMOVED FROM DOWNSTREAM CULVERTS BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER OR THE TOWN/CITY.
9. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES AND MATERIALS SHALL BE IN PLACE PRIOR TO BEGINNING EARTHWORK OPERATIONS AND SHALL BE MAINTAINED UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING AND/OR SLOPE PROTECTION AS DIRECTED BY THE ENGINEER
10. INSTALL TEMPORARY SILT FENCE AROUND THE BASE OF STOCKPILES.
11. THE PROFESSIONAL CERTIFYING COMPLIANCE TO NYSDEC PHASE II STORMWATER REGULATION REQUIREMENTS MUST INSPECT AT A MINIMUM WEEKLY AND SHALL PROVIDE THESE INSPECTION REPORT WITH A WRITTEN CERTIFICATION OF CONSTRUCTION COMPLIANCE TO THE TOWN OF WEST SENECA WEEKLY
12. THE ENGINEER OF RECORD FOR THIS PROJECT CERTIFIES THAT THESE DESIGN PLANS MEET THE REQUIREMENTS AND ARE IN COMPLIANCE WITH THE NEW YORK STORMWATER MANAGEMENT DESIGN MANUAL AND NYSDEC PHASE II STORMWATER REGULATION REQUIREMENTS. DUE TO SOIL DISTURBANCE BEING GREATER THAN ONE ACRE, A NYSDEC SPDES PERMIT MUST BE OBTAINED BEFORE ANY ONSITE DISTURBANCE IS MADE

NOTES

1. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT THOSE ITEMS TO REMAIN, SUCH AS TREES, PROPERTY CORNER PINS, UTILITY POLES, VALVES, HYDRANTS, CURBS, MANHOLES, AND CATCH BASINS
2. TEMPORARY SILT FENCE AND STRAW BALES TO BE INSTALLED AS DIRECTED BY THE OWNERS FIELD REPRESENTATIVE. MAINTAIN UNTIL VEGETATION IS ESTABLISHED AND PAVEMENT IS INSTALLED
3. FOR THOSE STRUCTURES TO BE DEMOLISHED, ALL EXISTING UTILITY SERVICES SHALL BE ABANDONED IN ACCORDANCE WITH LOCAL REGULATIONS. ALL METERS SHALL BE RETURNED TO PROPER OWNERS
4. THE CONTRACTOR SHALL INSTALL STABILIZED CONSTRUCTION ENTRANCES WHERE ACCESSING THE SITE FROM PAVED ROADWAYS
5. THE CONTRACTOR SHALL INSTALL TEMPORARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH NYS M.U.T.C.D. STANDARDS PRIOR TO STARTING WORK

DEMO & EROSION CONTROL LEGEND:

(inlet protection symbol)	INSTALL STORM DRAINAGE INLET PROTECTION
(silt fence line symbol)	PROPOSED SILT FENCE / SILT SOCK

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

60' 60 0 60 120ft

Carmina Wood Morris DPC

REVISIONS:

No.	Description	Date
1	Revised per Engineering Comments	7/20/21

PROJECT NAME:

New Construction

Proposed Subdivision

Reserve Rd
West Seneca, New York

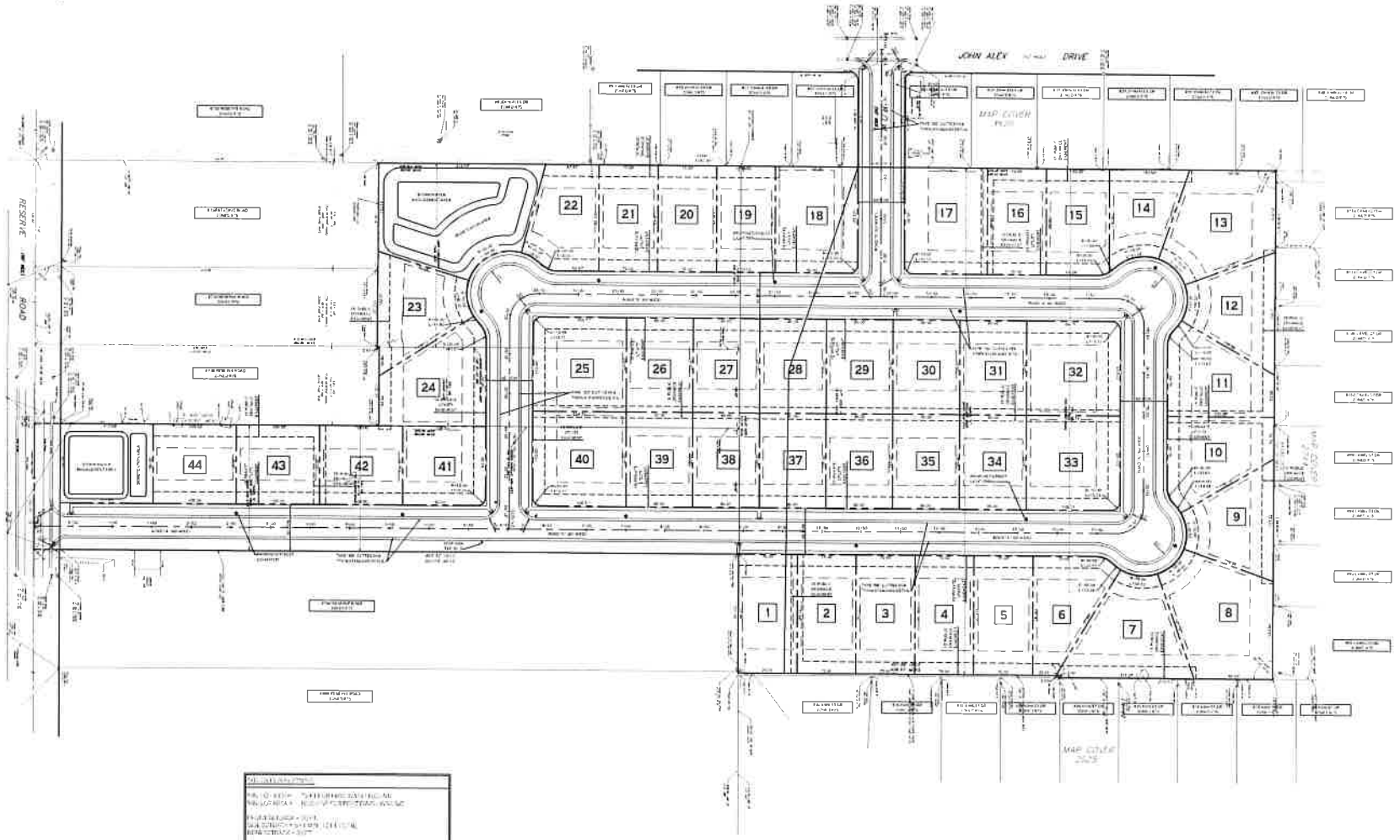
DRAWING NAME:

Demo & Erosion Control Plan

DRAWING NO.

C-001

Project no.: 18.077



SITE PLAN - OVERALL

SCALE 1"=60'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

60 0 60 120ft

Carmina Wood Morris DPC

REVISIONS		
No.	Description	Date

PROJECT NAME:

New Construction

Proposed Subdivision

Reserve Rd

West Seneca, New York

Issued for Construction	
Municipality Submission	07.19.21
Drawn by	C. Wood
Scale	As Noted

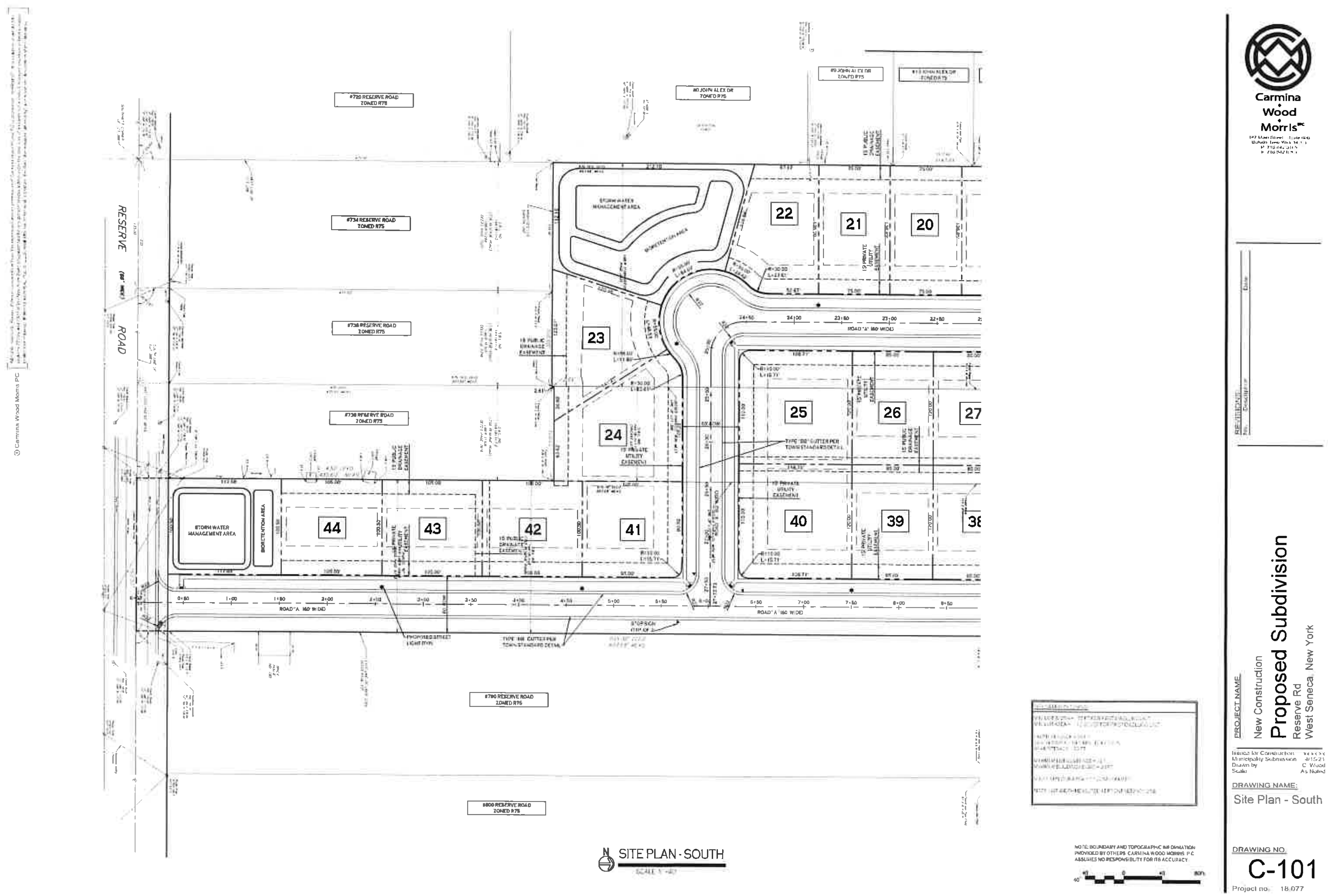
DRAWING NAME:

Site Plan - Overall

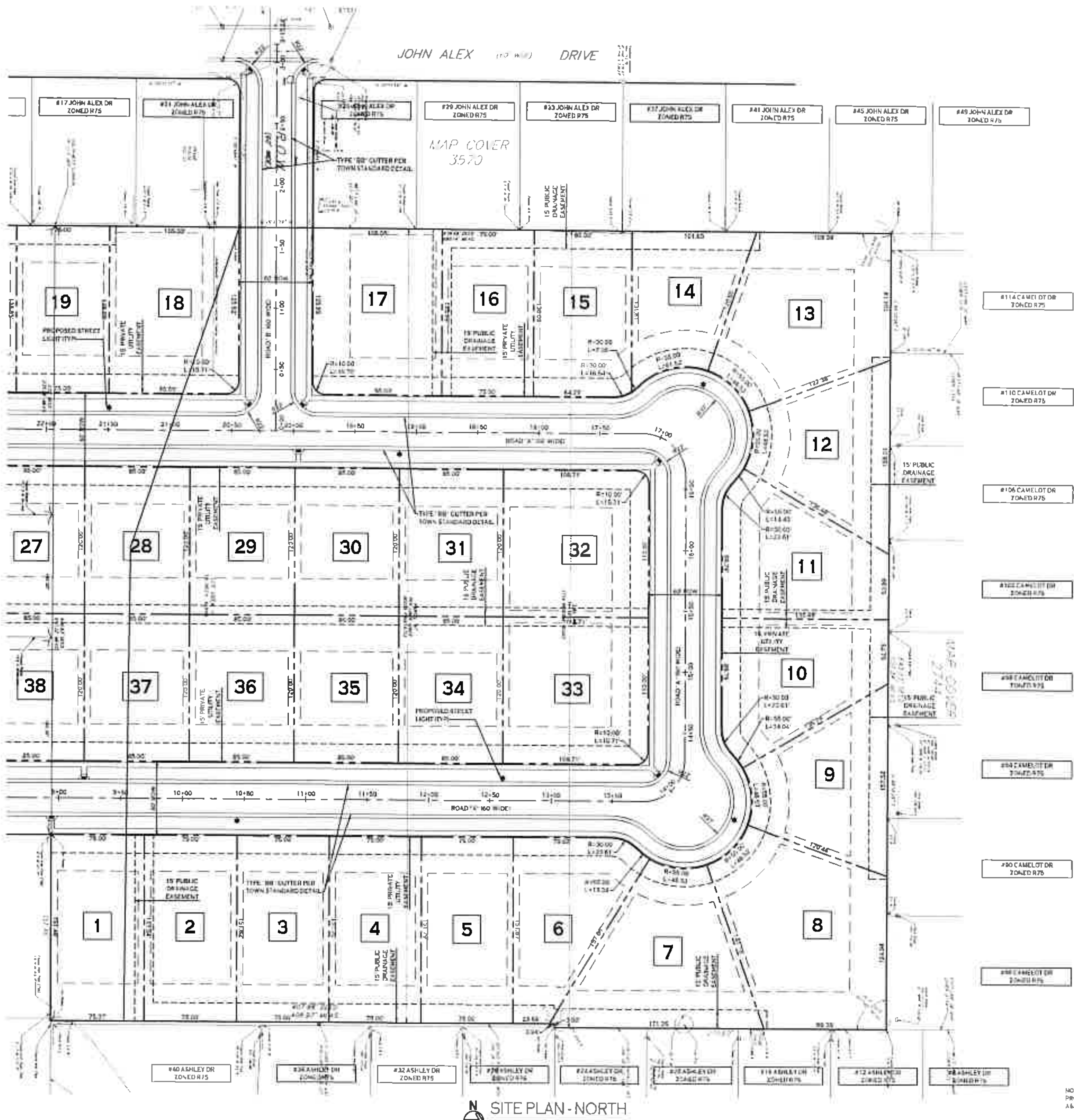
DRAWING NO.

C-100

Project no. 18.077



#720 RESERVE ROAD ZONED R75
#734 RESERVE ROAD ZONED R75
#738 RESERVE ROAD ZONED R75
#738 RESERVE ROAD ZONED R75
#790 RESERVE ROAD ZONED R75
#800 RESERVE ROAD ZONED R75
#0 JOHN ALEX DR ZONED R75
#9 JOHN ALEX DR ZONED R75
#13 JOHN ALEX DR ZONED R75
RESERVE (66' WIDE) ROAD
STORMWATER MANAGEMENT AREA
BIORETENTION AREA
ROAD 'A' (60' WIDE)
15' PUBLIC DRAINAGE EASEMENT
15' PRIVATE UTILITY EASEMENT
TYPE 'BB' GUTTER PER TOWN STANDARD DETAIL
PROPOSED STREET LIGHT (TYP)
STOP SIGN (TYP OF 2)
20
21
22
23
24
25
26
27
38
39
40
41
42
43
44
SITE PLAN - SOUTH
NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.
Carmina Wood Morris PC
REVISIONS
No. Description Date
PROJECT NAME
New Construction
Proposed Subdivision
Reserve Rd
West Seneca, New York
Municipality Submission 4/15/21
Drawn by C Wood
Scale As Noted
DRAWING NAME:
Site Plan - South
DRAWING NO.
C-101
Project no. 18.077
© Carmina Wood Morris PC



SITE PLAN - NORTH

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

Carmina Wood Morris

REVISIONS:

PROJECT NAME:

New Construction

Proposed Subdivision

Reserve Rd

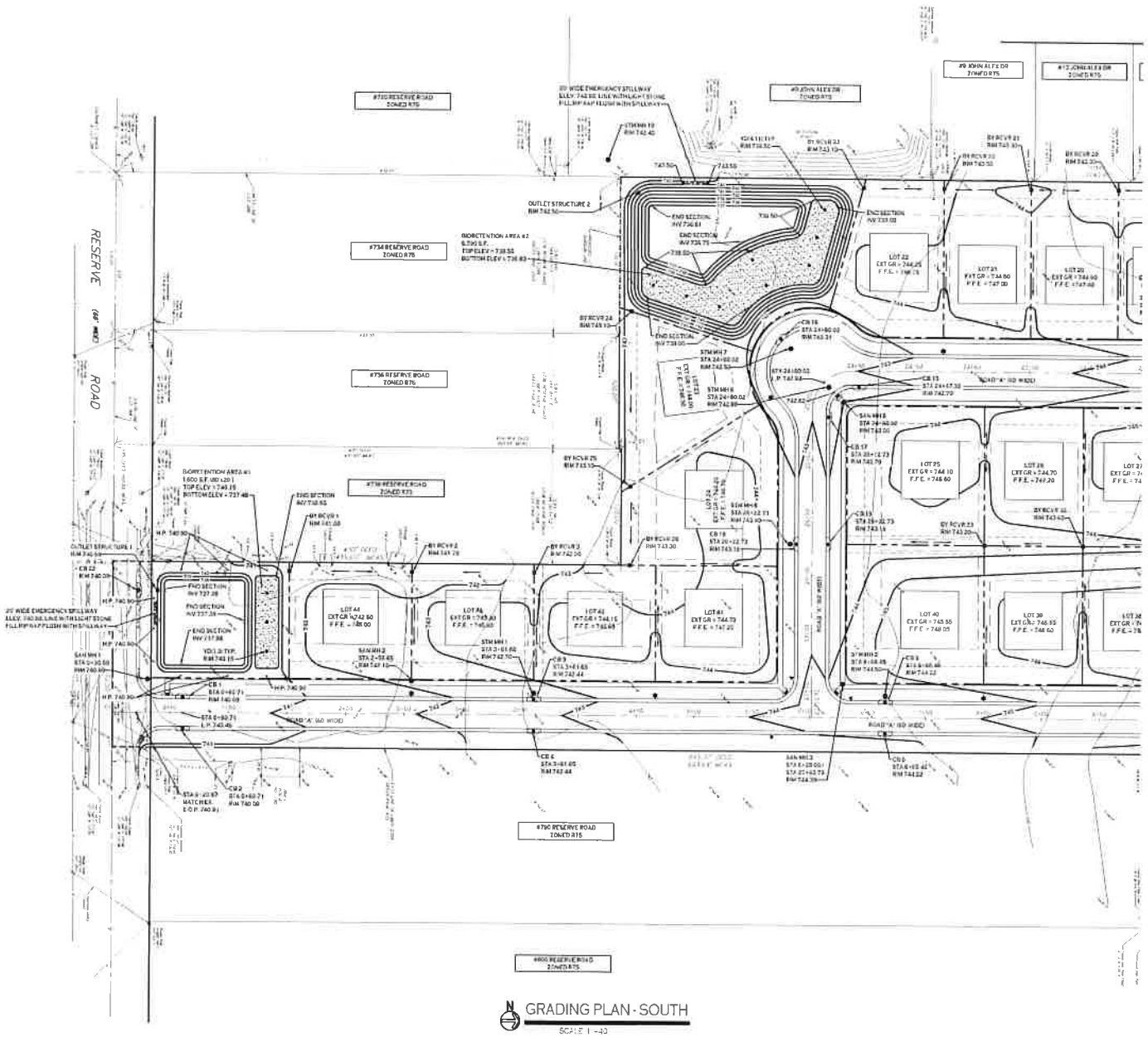
West Seneca, New York

DRAWING NAME:

Site Plan - North

DRAWING NO.

C-102



GRADING PLAN - SOUTH

SCALE 1" = 40'

GRADING NOTES

1. IN GENERAL LBT FFE FOR THE PROPOSED HOUSES SHALL BE 2.5' ABOVE HIGHEST ELEVATION OR GRADE ELEVATION
2. IN GENERAL TOP OF WALL ELEVATION SHALL BE 1.5' ABOVE HIGHEST EXTERIOR GRADE ELEVATION
3. SANITARY SEWER INVERT AT THE PROPOSED HOUSE SHALL BE 1.5' ABOVE THE BASEMENT FLOOR ELEVATION. BASEMENT FLOOR ELEVATION IS 9' BELOW THE 1ST FFE.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

40' 40 0 40 80FT.

Carmina Wood Morris

REVISIONS:		
No.	Description	Date
1	Removed per Engineering comments	11/5/21

PROJECT NAME:

New Construction

Proposed Subdivision

Reserve Rd

West Seneca New York

Issued for Construction 11/5/21
Municipality Submission 4/15/21
Drawn by A. Piontelli
Scale As Noted

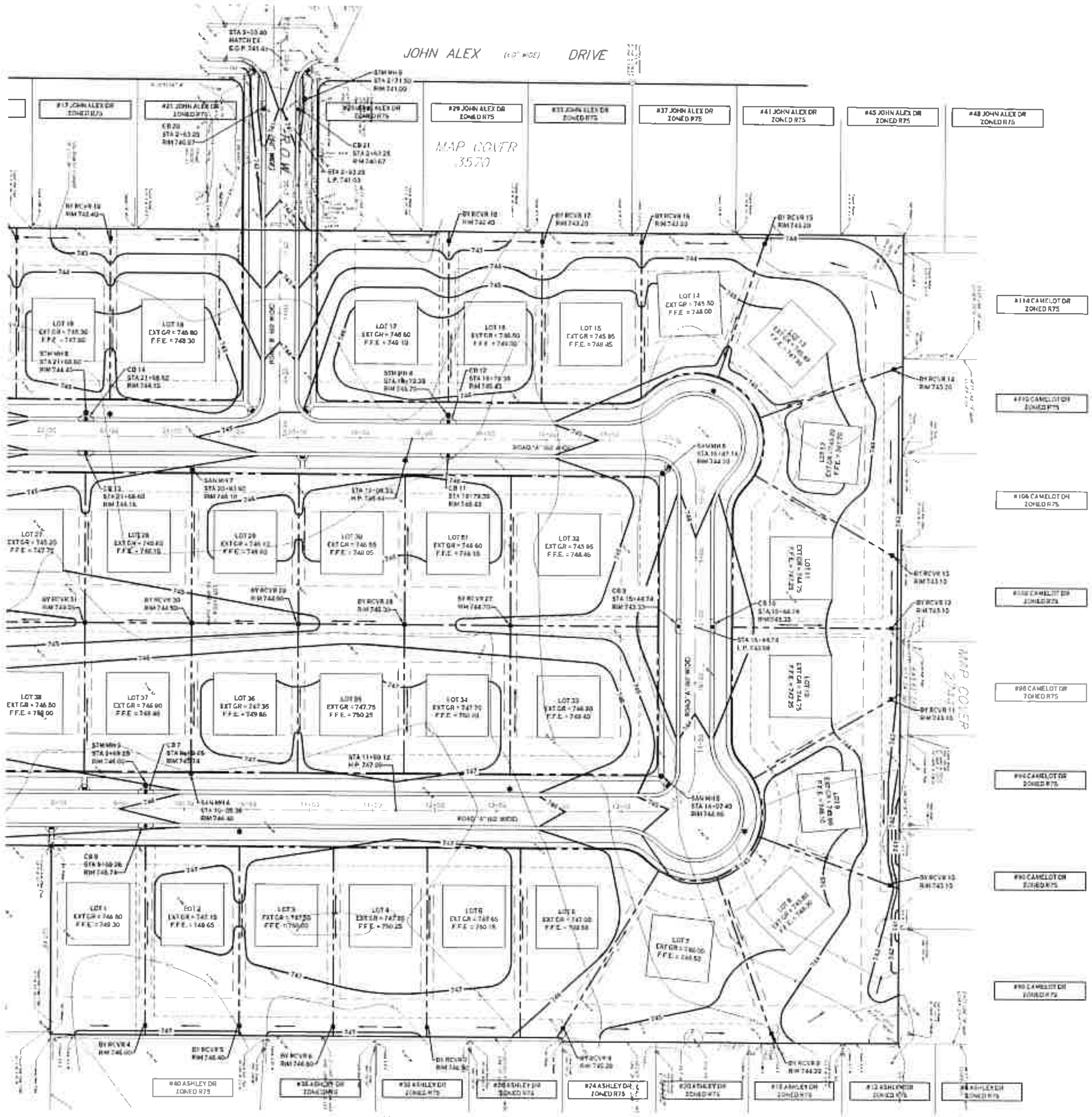
DRAWING NAME:

Grading Plan - South

DRAWING NO.

C-200

Project no.: 18.077



GRADING PLAN - NORTH

SCALE 1"=40'

GRADING NOTES:

1. IN GENERAL, 1ST FFE FOR THE PROPOSED HOUSES SHALL BE 2.5' ABOVE HIGHEST EXTERIOR GRADE ELEVATION
2. IN GENERAL, TOP OF WALL ELEVATION SHALL BE 1.5' ABOVE HIGHEST EXTERIOR GRADE ELEVATION
3. SANITARY SEWER INVERT AT THE PROPOSED HOUSE SHALL BE 1.0' ABOVE THE BASEMENT FLOOR ELEVATION. BASEMENT FLOOR ELEVATION IS 9' BELOW THE 1ST FFE.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY

40' 40 0 40 80FT

Carmina Wood Morris

REVISIONS

No.	Description	Date
1	Revised per Engineering comments	7/23/21

PROJECT NAME:

New Construction

Proposed Subdivision

Reserve Rd

West Seneca, New York

Issued for Construction	xx.xx.xx
Municipality Submission	4.15.21
Drawn by	A. Pandolfo
Scale	As Noted

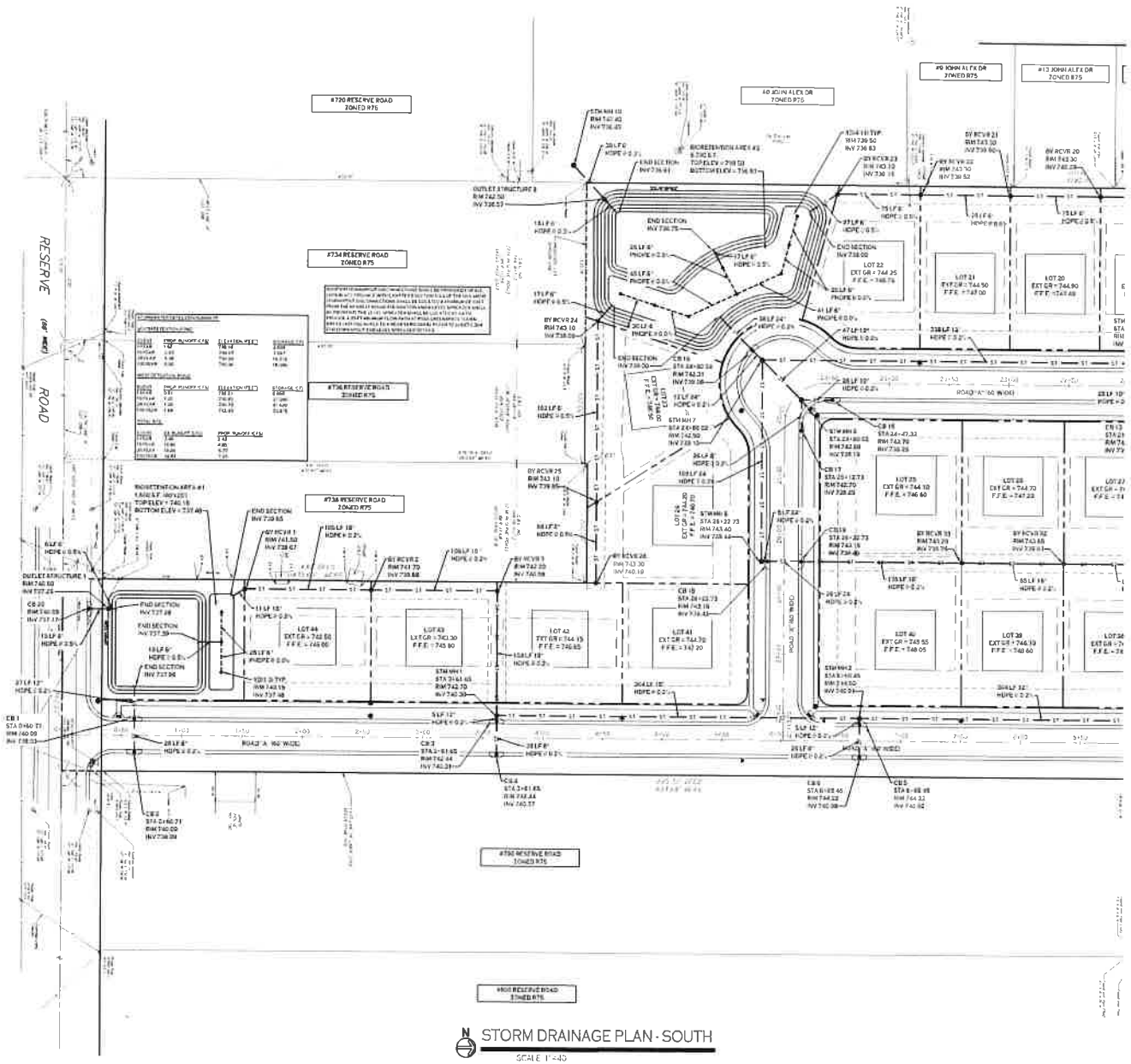
DRAWING NAME:

Grading Plan - North

DRAWING NO.

C-201

Project no. 18.077



STORM DRAINAGE PLAN - SOUTH

SCALE 1" = 40'

PROPOSED UTILITY LEGEND

- PROPOSED STORM SEWER — ST
- PROPOSED SANITARY SEWER — SA
- PROPOSED WATERLINE — W
- PROPOSED CATCH BASIN ■ CB
- PROPOSED YARD DRAIN ● YD
- PROPOSED MANHOLE ● MH
- PROPOSED HYDRANT ASSEMBLY
- PROPOSED GATE VALVE ● GV

NOTE: FOR PROPOSED VALVE BOXES, CLEANOUTS, ETC. INSTALL A 2,000 PSI CONCRETE COLLAR AROUND THE ITEM AT GRADE. THE COLLAR SHALL BE A MINIMUM OF 6" WIDER THAN THE BOX, CLEANOUT, ETC. THE COLLAR SHALL BE A MINIMUM OF 24" THICK.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY

40' 0 40' 80'

Carmina Wood Morris PC

REVISIONS:

No.	Description	Date
1	Revised per Engineering Comments	7/29/21

PROJECT NAME:

New Construction

Proposed Subdivision

Reserve Rd

West Seneca New York

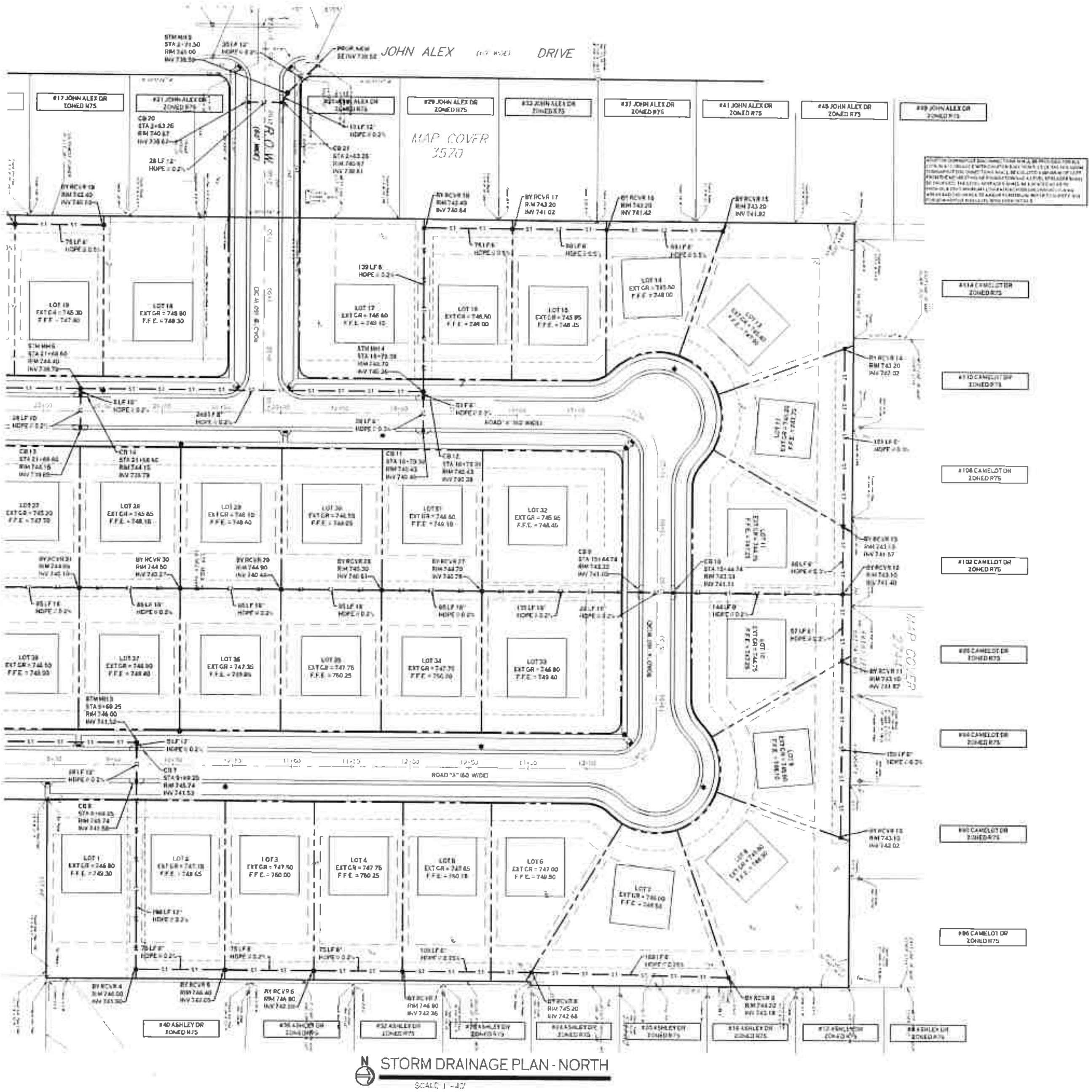
DRAWING NAME:

Storm Drainage Plan - South

DRAWING NO.

C-300

Project no. 18.077



STORM DRAINAGE PLAN - NORTH

SCALE 1" = 40'

PROPOSED UTILITY LEGEND

PROPOSED STORM SEWER	— ST —
PROPOSED SANITARY SEWER	— SA —
PROPOSED WATERLINE	— W —
PROPOSED CATCH BASIN	■ CB
PROPOSED YARD DRAIN	● YD
PROPOSED MANHOLE	● MH
PROPOSED HYDRANT ASSEMBLY	▲
PROPOSED GATE VALVE	● GV

NOTE: FOR PROPOSED VALVE BOXES, CLEANOUTS, ETC. INSTALL A 3,000 PSI CONCRETE COLLAR AROUND THE ITEM AT GRADE. THE COLLAR SHALL BE A MINIMUM OF 6" WIDER ON ALL SIDES THAN THE BOX, CLEANOUT, ETC. THE COLLAR SHALL BE A MINIMUM OF 8" THICK.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

Carmina • Wood • Morris

REVISIONS

No.	Description	Date
1	Revised per Engineering comments	7/25/21

PROJECT NAME

New Construction

Proposed Subdivision

Reserve Rd

West Seneca, New York

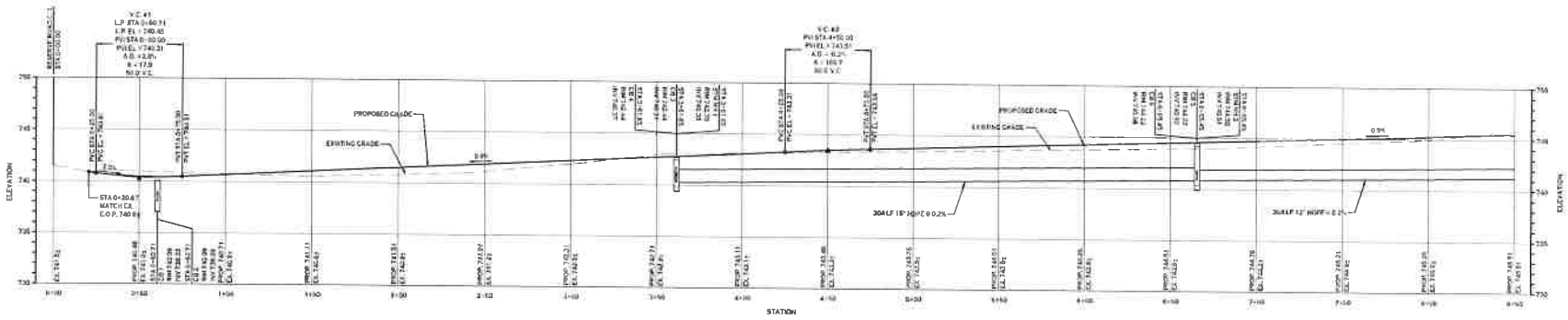
DRAWING NAME:

Storm Drainage Plan - North

DRAWING NO.

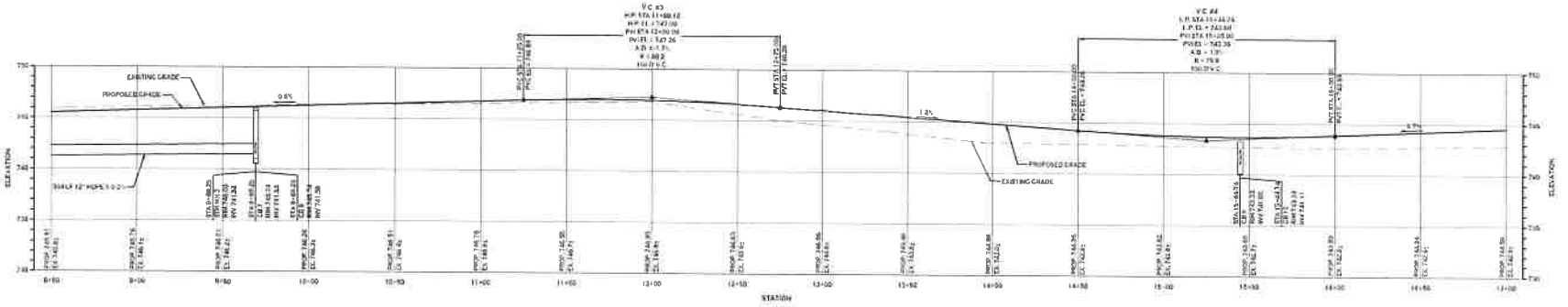
C-301

Project no. 18.077



PAVING & DRAINAGE PROFILE ROAD "A" STA 0+00 - 8+50

HORZ SCALE: 1"=30
VERT SCALE 1"=5'



PAVING & DRAINAGE PROFILE ROAD "A" STA 8+50 - 17+00

HORZ SCALE 1"=30
VERT SCALE 1"=5

Carmina Wood Morris PC

REVISIONS:

No.	Description	Date
1	Revised per Engineering comments	7/25/21

PROJECT NAME

New Construction
Proposed Subdivision
Reserve Rd
West Seneca, New York

Issued for Construction
Municipality Submission
Drawn by
Scale

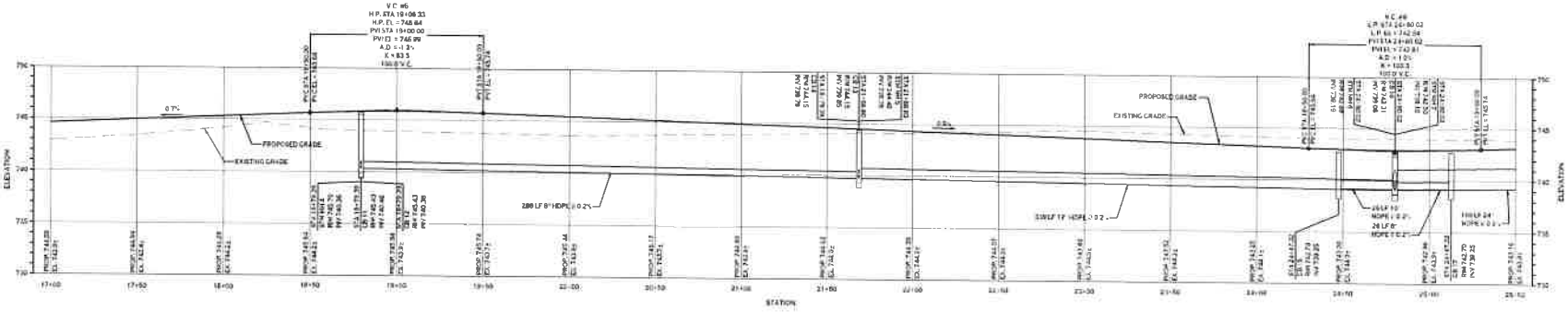
DRAWING NAME:

Paving & Drainage Profiles

DRAWING NO.

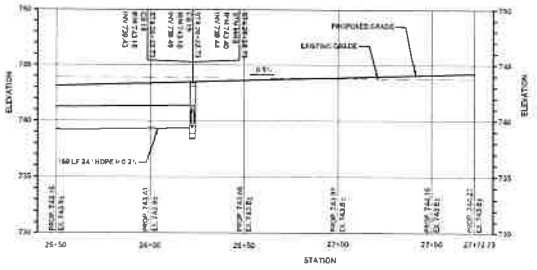
C-302

Project no. 18.077



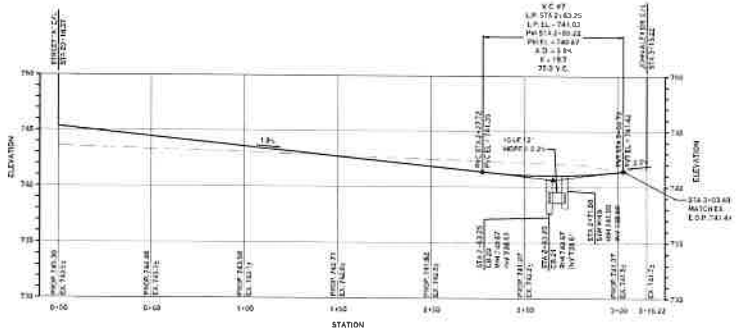
PAVING & DRAINAGE PROFILE ROAD "A" STA 17+00 - 25+50

HORZ SCALE 1" = 50'
VERT SCALE 1" = 5'



PAVING & DRAINAGE PROFILE ROAD "A" STA 25+50 - 27+72.73

HORZ SCALE 1" = 50'
VERT SCALE 1" = 5'



PAVING & DRAINAGE PROFILE ROAD "B" STA 0+00 - 3+15.22

HORZ SCALE 1" = 50'
VERT SCALE 1" = 5'

Carmina Wood Morris DPC

REVISIONS:		
No.	Description	Date
1	Revised per Engineering Comments	1-25-21

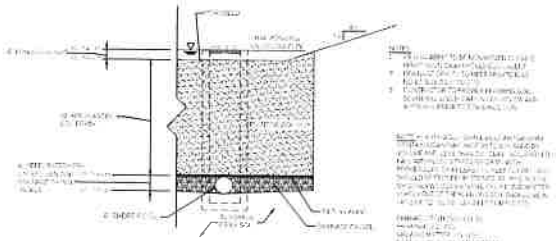
PROJECT NAME:
New Construction
Proposed Subdivision
Reserve Rd
West Seneca, New York

Issued for Construction 12-15-20
Municipality Submission 1-15-21
Drawn by A. Furdyna
Scale As Noted

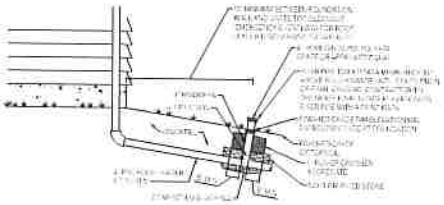
DRAWING NAME:
Paving & Drainage Profiles

DRAWING NO.
C-303

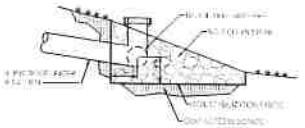
Project no. 18.077



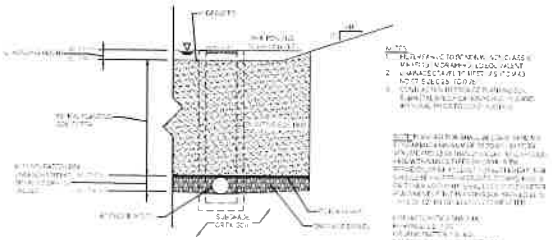
BIORETENTION AREA #1 - TYPICAL SECTION



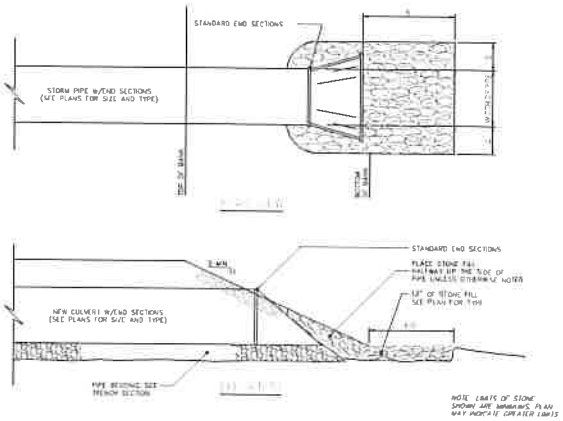
ROOF LEADER DOWNSPOUT DISCHARGE DETAIL



TYPICAL LEVEL SPREADER DETAIL



BIORETENTION AREA #2 - TYPICAL SECTION



TYPICAL PIPE OUTLET W/END SECTION & RIP RAP

NOT TO SCALE

Carmina Wood Morris PC

REVISIONS:

No.	Description	Date
1	Revised per Engineering comments	7/25/21

PROJECT NAME:

New Construction

Proposed Subdivision

Reserve Rd

West Seneca, New York

Issued for Construction 4/16/21

Municipality Submission 4/16/21

Drawn by A. Pandolfo

Scale As Noted

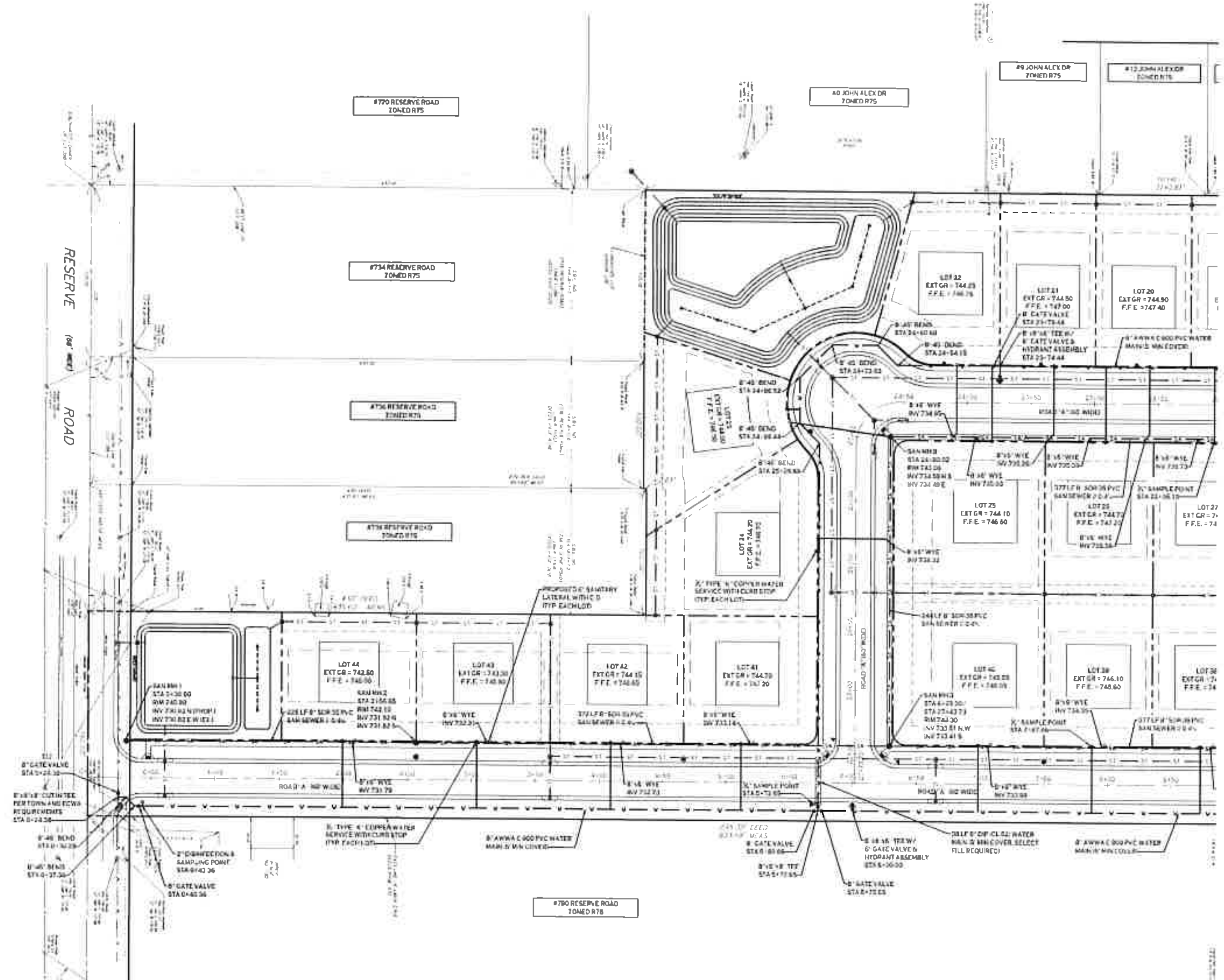
DRAWING NAME:

Storm Drainage Details

DRAWING NO.

C-304

Project no. 18.077



UTILITY PLAN - SOUTH

SCALE: 1"=40'

UTILITY NOTES

1. P.V.C. (POLYVINYL CHLORIDE) SANITARY SEWER SHALL CONFORM TO A.S.T.M. SDR-35 SPECIFICATIONS OR APPROVED EQUAL.
2. ALL WATERLINE SERVICE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF WEST SENECA AND ERIE COUNTY WATER AUTHORITY REQUIREMENTS.
3. P.V.C. (POLYVINYL CHLORIDE) WATERLINE PIPE SHALL CONFORM TO A.W.W.A. C-900 SPECIFICATIONS OR APPROVED EQUAL.
4. D.I.P. (DUCTILE IRON PIPE) WATERLINE SHALL CONFORM TO ANSI/AWWA C151/A21.51 SPECIFICATIONS CLASS 52. HYDRANT BRANCHES TO BE CLASS 53 D.I.P.
5. THE MAXIMUM DEGREE OF DEFLECTION AT WATERLINE JOINTS IS ONE HALF (1/2) OF THE PIPE MANUFACTURER'S RECOMMENDED DEGREE OF DEFLECTION, WHICH SHALL MEET & SATISFY THE ECWA STANDARDS. ANY DEVIATION FROM THIS STANDARD PROCEDURE WILL REQUIRE THE INSTALLATION OF BENDS W/ RESTRAINED JOINTS.
6. FIELD CONDITIONS MAY REQUIRE MINOR ALIGNMENT & BEND LOCATION ADJUSTMENTS WHICH WILL BE PERMITTED AS LONG AS ALL MINIMUM OFFSETS FROM OTHER UTILITIES & MAXIMUM ALLOWABLE JOINT DEFLECTIONS ARE MAINTAINED.
7. CHLORINATION & TESTING SHALL BE DONE IN ACCORDANCE WITH A.W.W.A. SPECIFICATIONS C-600 AND ALL CURRENT ECWA STANDARDS.
8. ALL WATERLINE CROSSINGS W/ SANITARY & STORM SEWERS TO HAVE MIN. 1 1/2 MIN. OF SEPARATION. INSTALL BENDS, BLOCKING & PIPE RESTRAINTS AS REQUIRED.
9. SANITARY SEWER SERVICE CONNECTION SHALL BE IN APPROXIMATELY THE 10 O CLOCK / 2 O CLOCK POSITION. CONTRACTOR SHALL MAKE SLIGHT ADJUSTMENTS AS NECESSARY TO AVOID CONFLICTS W/ OTHER UTILITIES WHILE MAINTAINING BOTH A MINIMUM OF 2% SLOPE & MINIMUM OF 4 FEET OF COVER. 1% SLOPE IS ALLOWED UNDER PRE APPROVED CIRCUMSTANCES.

PROPOSED UTILITY LEGEND

PROPOSED STORM SEWER	— —
PROPOSED SANITARY SEWER	— SA —
PROPOSED WATERLINE	— V —
PROPOSED CATCH BASIN	■ CB
PROPOSED YARD DRAIN	● YD
PROPOSED MANHOLE	● MH
PROPOSED HYDRANT ASSEMBLY	
PROPOSED GATE VALVE	● GV

NOTE: FOR PROPOSED VALVE BOXES, CLEANOUTS, ETC. INSTALL A 3,000 PSI CONCRETE COLLAR AROUND THE ITEM AT GRADE. THE COLLAR SHALL BE A MINIMUM OF 6" WIDER ON ALL SIDES THAN THE BOX, CLEANOUT, ETC. THE COLLAR SHALL BE A MINIMUM OF 6" THICK.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

40' 0 40 80 FT.

Carmina Wood Morris PC

REVISIONS:

No.	Description	Date

PROJECT NAME:

New Construction

Proposed Subdivision

Reserve Rd

West Seneca, New York

Issued For Construction
Municipality Submission
Drawn by: A. Pandolfo
Scale: As Noted

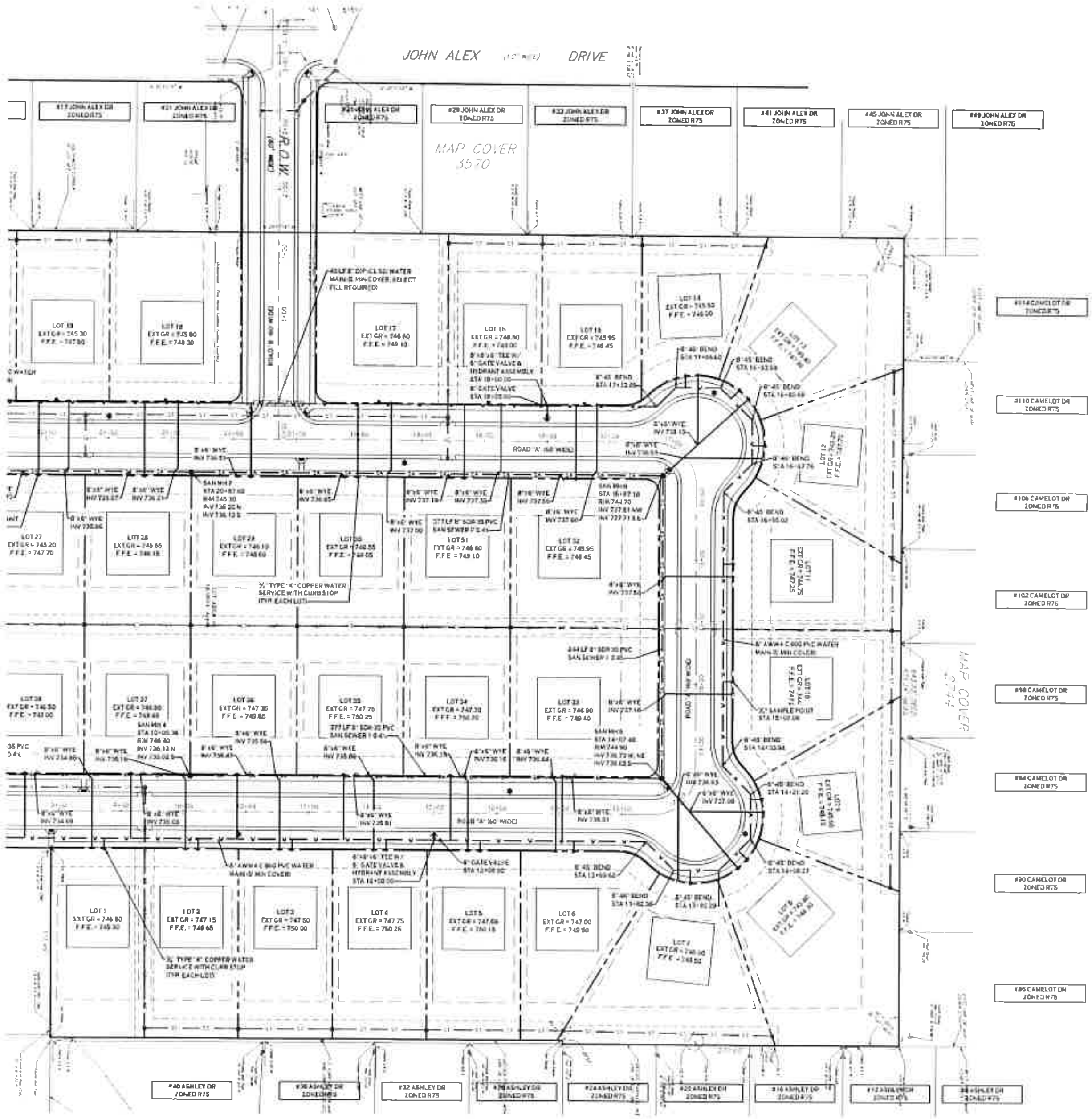
DRAWING NAME:

Utility Plan - South

DRAWING NO.

C-400

Project no.: 18.077



UTILITY PLAN - NORTH

SCALE 1"=40'

UTILITY NOTES

1. P.V.C. (POLYVINYL CHLORIDE) SANITARY SEWER SHALL CONFORM TO A.S.T.M. SDR 35 SPECIFICATIONS OR APPROVED EQUAL.
2. ALL WATERLINE SERVICE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF WEST SENECA AND ERIE COUNTY WATER AUTHORITY REQUIREMENTS.
3. P.V.C. (POLYVINYL CHLORIDE) WATERLINE PIPE SHALL CONFORM TO A.W.W.A. C 900 SPECIFICATIONS OR APPROVED EQUAL.
4. D.I.P. (DUCTILE IRON PIPE) WATERLINE SHALL CONFORM TO ANSI/AWWA C151/A21.51 SPECIFICATIONS (CLASS 52). HYDRANT BRANCHES TO BE CLASS 53 D.I.P.
5. THE MAXIMUM DEGREE OF DEFLECTION AT WATERLINE JOINTS IS ONE HALF (1/2) OF THE PIPE MANUFACTURERS RECOMMENDED DEGREE OF DEFLECTION, WHICH SHALL MEET & SATISFY THE ECWA STANDARDS. ANY DEVIATION FROM THIS STANDARD PROCEDURE WILL REQUIRE THE INSTALLATION OF BENDS W/ RESTRAINED JOINTS.
6. FIELD CONDITIONS MAY REQUIRE MINOR ALIGNMENT & BEND LOCATION ADJUSTMENTS WHICH WILL BE PERMITTED AS LONG AS ALL MINIMUM OFFSETS FROM OTHER UTILITIES & MAXIMUM ALLOWABLE JOINT DEFLECTIONS ARE MAINTAINED.
7. CHLORINATION & TESTING SHALL BE DONE IN ACCORDANCE WITH A.W.W.A. SPECIFICATIONS C 600 AND ALL CURRENT ECWA STANDARDS.
8. ALL WATERLINE CROSSINGS W/ SANITARY & STORM SEWERS TO HAVE MIN. 1 1/2' MIN. OF SEPARATION. INSTALL BENDS, BLOCKING, & PIPE RESTRAINTS AS REQUIRED.
9. SANITARY SEWER SERVICE CONNECTION SHALL BE IN APPROXIMATELY THE 10 O'CLOCK / 2 O'CLOCK POSITION. CONTRACTOR SHALL MAKE SLIGHT ADJUSTMENTS AS NECESSARY TO AVOID CONFLICTS W/ OTHER UTILITIES WHILE MAINTAINING BOTH A MINIMUM OF 2% SLOPE & MINIMUM OF 4' FEET OF COVER. 1% SLOPE IS ALLOWED UNDER PRE-APPROVED CIRCUMSTANCES.

PROPOSED UTILITY LEGEND

PROPOSED STORM SEWER	— ST —
PROPOSED SANITARY SEWER	— SA —
PROPOSED WATERLINE	— W —
PROPOSED CATCH BASIN	■ CB
PROPOSED YARD DRAIN	● YD
PROPOSED MANHOLE	● MH
PROPOSED HYDRANT ASSEMBLY	(hydrant symbol)
PROPOSED GATE VALVE	● GV

NOTE: FOR PROPOSED VALVE BOXES, CLEANOUTS, ETC. INSTALL A 3,000 PSI CONCRETE COLLAR AROUND THE ITEM AT GRADE. THE COLLAR SHALL BE A MINIMUM OF 6" WIDER ON ALL SIDES THAN THE BOX, CLEANOUT, ETC. THE COLLAR SHALL BE A MINIMUM OF 6" THICK.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

40' 40 0 40 80ft

Carmina Wood Morris PC

REVISIONS

No. | Description | Date

PROJECT NAME

New Construction

Proposed Subdivision

Reserve Rd
West Seneca, New York

Issued for Construction	xx.xx.xx
Municipality Submission	4/15/21
Drawn by	A. Pandolfo
Scale	As Noted

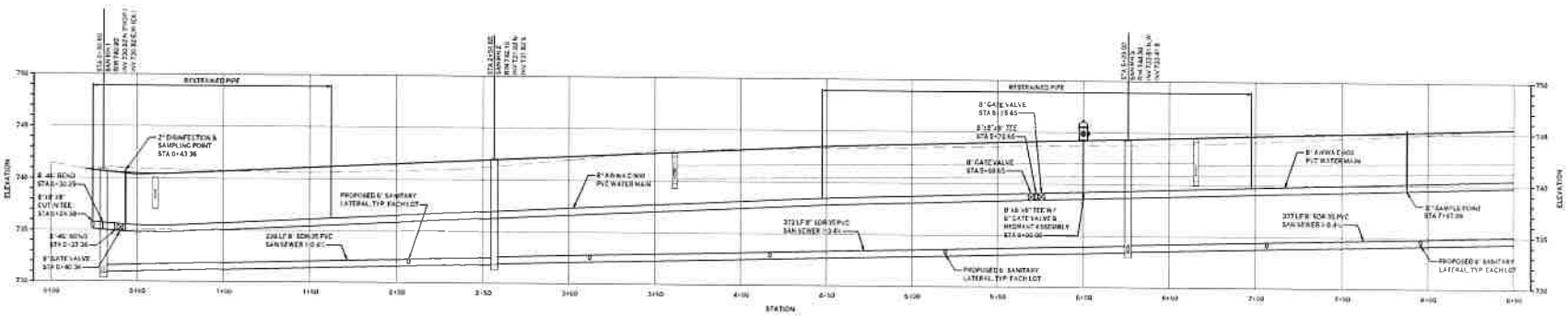
DRAWING NAME

Utility Plan - North

DRAWING NO.

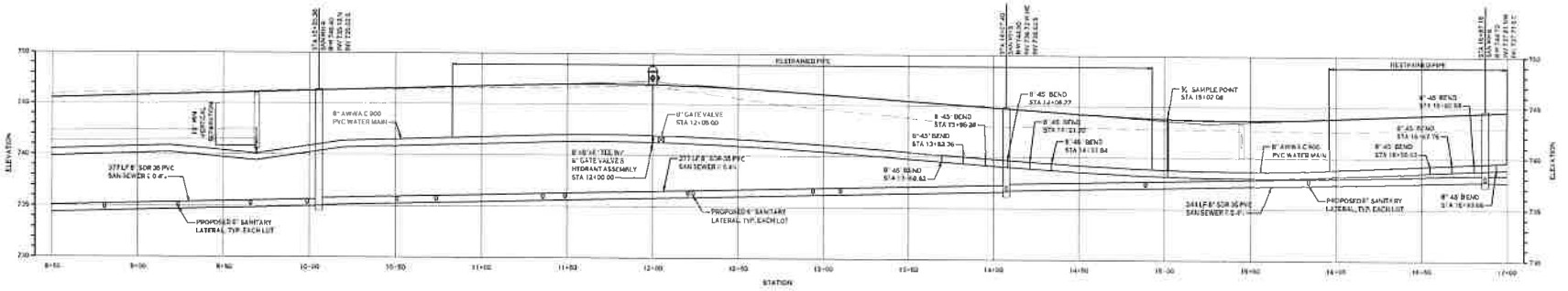
C-401

Project no. 18.077



UTILITY PROFILE ROAD "A" STA 0+00 - 8+50

HORZ SCALE 1" =50'
VERT SCALE 1"=5'



UTILITY PROFILE ROAD "A" STA 8+50 - 17+00

HORZ SCALE 1" =50'
VERT SCALE 1"=5'

Carmina Wood Morris DPC

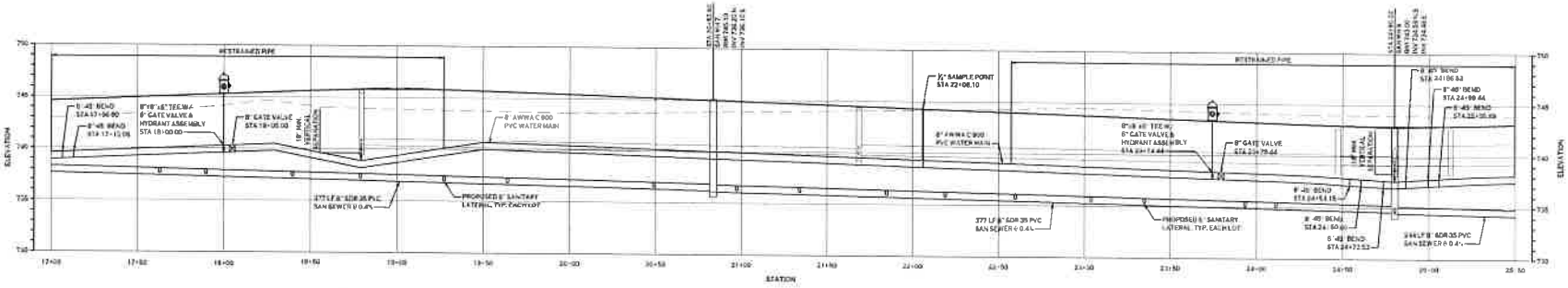
REVISIONS:

PROJECT NAME:
New Construction
Proposed Subdivision
Reserve Rd
West Seneca New York

DRAWING NAME:
Utility Profiles

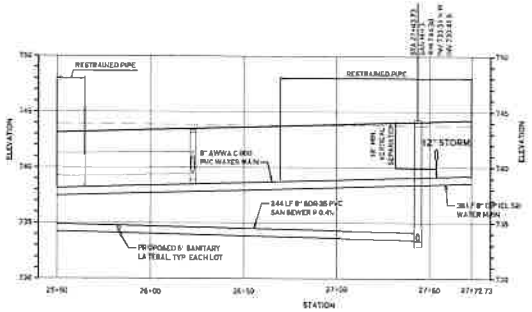
DRAWING NO.
C-402

Project no. 18.077



UTILITY PROFILE ROAD "A" STA 17+00 - 25+50

HORZ SCALE 1" = 30'
VERT SCALE 1" = 5'



UTILITY PROFILE ROAD "A" STA 25+50 - 27+72.73

HORZ SCALE 1" = 30'
VERT SCALE 1" = 5'

Carmina Wood Morris PC

REVISIONS
No. Description Date

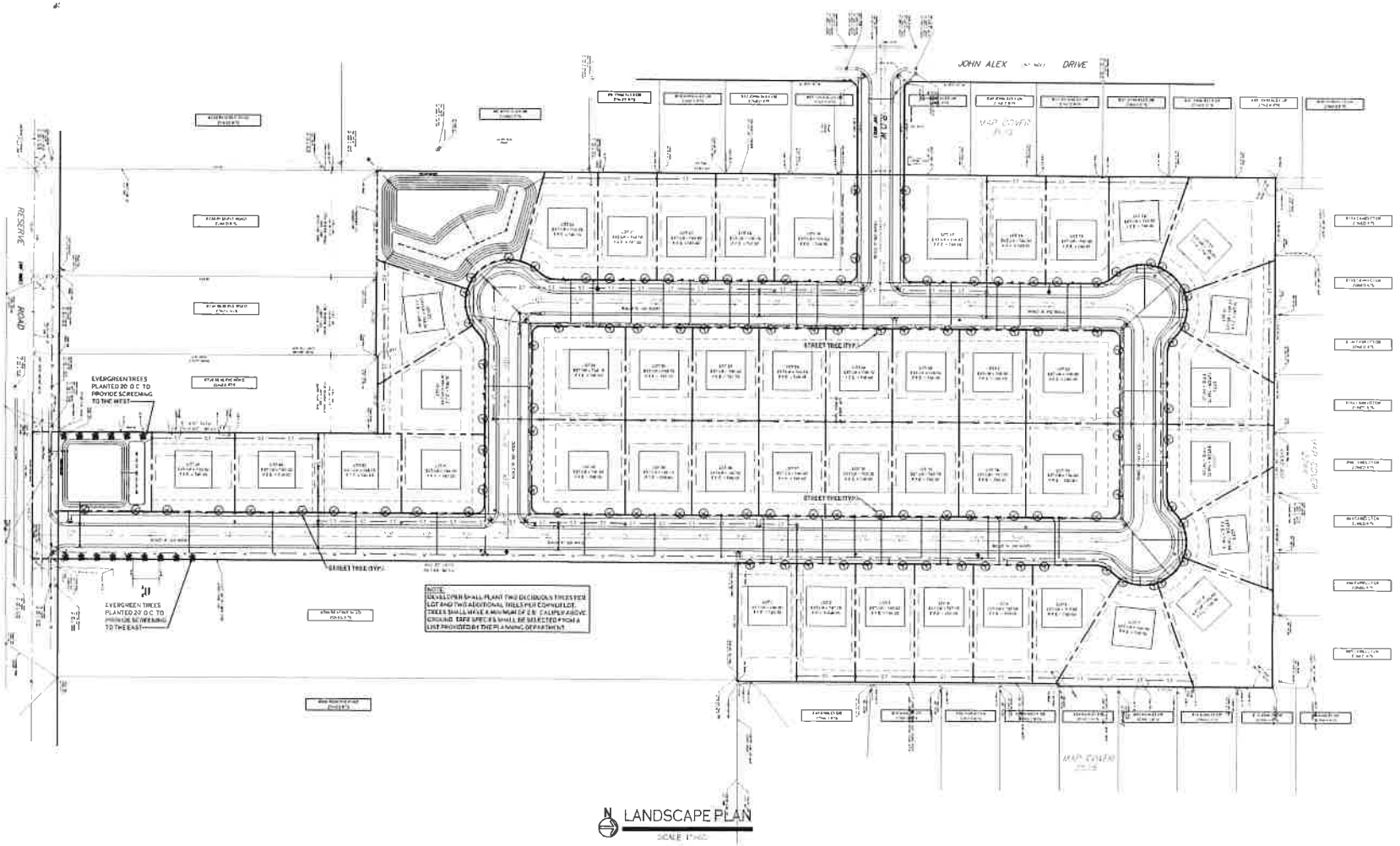
PROJECT NAME
New Construction
Proposed Subdivision
Reserve Rd
West Seneca, New York

Issued for Construction
Municipality Submission
Drawn by
Scale

DRAWING NAME:
Utility Profiles

DRAWING NO.
C-403

Project no. 18.077



LANDSCAPE PLAN

SCALE: 1"=40'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY

Carmina Wood Morris

REVISIONS

No.	Description	Date

PROJECT NAME:

New Construction

Proposed Subdivision

Reserve Rd

West Seneca, New York

Issued for Construction
Municipality Submission 9.15.21
Drawn by A. Pandolfo
Scale As Noted

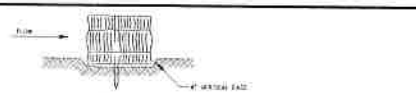
DRAWING NAME:

Landscape Plan

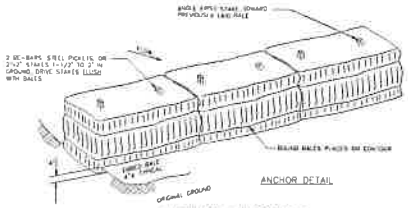
DRAWING NO.

L-100

Project no. 18.077



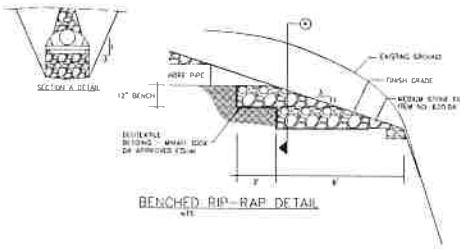
STANDARD SYMBOL — SBD — DRAINAGE AREA NO MORE THAN 1/4 AC PER 100 FEET OF STRAW BALE DIKE FOR SLOPE LESS THAN 3%

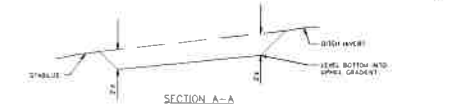


CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF FOUR (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO (2) STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE

FIGURE 5A.8
STRAW BALE DIKE DETAILS (SBD)

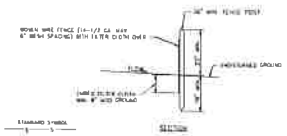


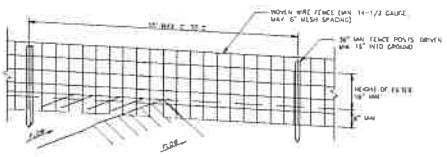


CONSTRUCTION SPECIFICATIONS

1. THE SWALE SEDIMENT TRAP SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DIMENSIONS PROVIDED ON THE PLANS OR DRAWINGS OR SIZED TO PROVIDE THE MINIMUM STORAGE NECESSARY, 1800 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA
2. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE
3. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN EVENT, AND REPAIRS MADE AS NEEDED
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED
5. THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE CONSTRUCTED DRAINAGE AREA HAS BEEN PROPERLY STABILIZED
6. THE SWALE SEDIMENT TRAP WILL BE PROPERLY BACKFILLED AND THE SWALE OR DITCH RECONSTRUCTED

FIGURE 5A.20
SWALE OUTLET SEDIMENT TRAP: ST-IV





CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION
3. WHEN TWO (2) SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX (6) INCHES AND FOLDED
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE

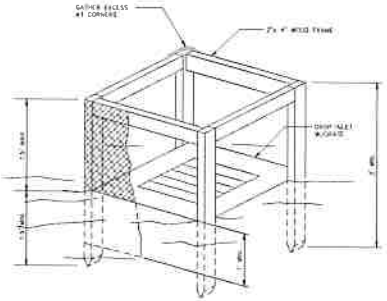
POSTS: SOLID EITHER 1 OR U TYPE OR 2"x2" HARDWOOD

FENCE: WOVEN WIRE, 14-1/2 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X WOVEN GEOTEXTILE FABRIC OR APPROVED EQUAL

PREFABRICATED UNIT: SILTSACK, SUPERSILT FENCE, OR APPROVED EQUAL

FIGURE 5A.9
SILT FENCE DETAILS (SF)



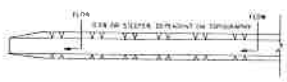
CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85 (SUPERAF 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. STAKES GREATER THAN 3 FEET MAY BE DROPPED 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

MAXIMUM DRAINAGE AREA 1 ACRE

FIGURE 5A.13
FILTER FABRIC DROP INLET PROTECTION DETAIL

FFIP



CONSTRUCTION SPECIFICATIONS

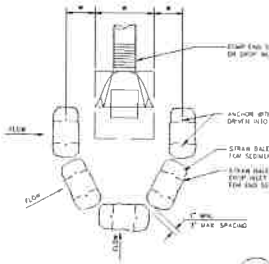
1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW
6. FILL SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED ON CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE CHART BELOW

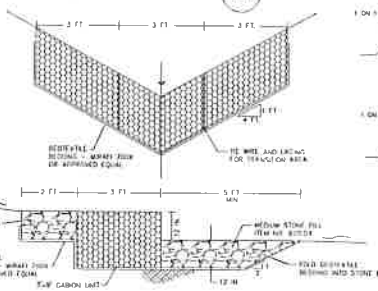
FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC OR LESS)	B (5 AC – 10AC)
1	0.5-3%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED WITH JUTE OR EXCELSIOR
3	5.1-8.0%	SEED WITH JUTE OR EXCELSIOR, SOD	LINED RIP-RAP 4-6" RECYCLED CONCRETE EQUIVALENT
4	8.1-12%	LINED 4-6" RIP-RAP	ENGINEERED DESIGN

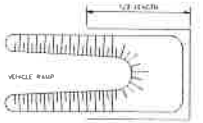
9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RUN EVENT

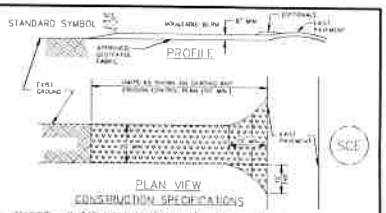
FIGURE 5A.2
TEMPORARY SWALE DETAIL





TOPSOIL STOCKPILE DETAILS





CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT
2. LENGTH – AS REQD, BUT 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 – TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE FILTER WILL NOT BE REQD ON A SINGLE FAMILY RESIDENCE LOT
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE IF PIPING IS IMPRACTICAL A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQ'D, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RUN EVENT

FIGURE 5A.3B
STABILIZED CONSTRUCTION ENTRANCE DETAILS

SEQUENCE OF CONSTRUCTION

1. NOTIFY SEDIMENT CONTROL INSPECTOR 24 HOURS PRIOR TO START OF CONSTRUCTION
2. SURVEY AND STAKEOUT FOR CLEARING, STRIPPING AND EROSION CONTROL ACTIVITIES
3. PERFORM CLEARING, GRUBBING, STRIPPING AND SEDIMENT CONTROL AS PER TOWN REQUIREMENTS. NOTIFY SEDIMENT CONTROL INSPECTOR AND OBTAIN APPROVAL BEFORE PROCEEDING FURTHER
4. PERFORM THE NECESSARY WORK TO ENSURE PROPER SURFACE DRAINAGE WHILE MAINTAINING EROSION AND SEDIMENT CONTROL AS REQUIRED BY TOWN SPECIFICATIONS AND EROSION ORDINANCE. SITE PREPARATION AND CONSTRUCTION SHALL NOT IRREVERSIBLY AFFECT THE FREE FLOW OF STORM RUNOFF OR WATER COURSES
5. PREPARATION OF RIGHT OF WAY SHALL INCLUDE ALL INFRASTRUCTURE CONSTRUCTION AS SHOWN ON THE APPROVED PLANS AND/OR AS DIRECTED BY THE TOWN ENGINEER. THE WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, PAVEMENT, SANITARY AND STORM SEWERS, UTILITIES AND VARIOUS APPURTENANCES
6. UPON COMPLETION OF PAVEMENT AND UTILITY INSTALLATION, RESTORATION WITHIN THE RIGHT OF WAY SHALL COMMENCE. THIS WORK WILL CONSIST OF THE RESTORATION OF ALL RIGHT OF WAY AREAS DISTURBED DURING CONSTRUCTION PLUS ANY AREA OUTSIDE OF THE RIGHT OF WAY THAT WAS DISTURBED DURING THE COURSE OF CONSTRUCTION. SUCH WORK SHALL BE APPROVED IN WRITING BY THE TOWN ENGINEER BEFORE ANY INDIVIDUAL SUBLOT CAN BE BUILT OR DEVELOPED
7. AFTER RECEIVING WRITTEN APPROVAL INDIVIDUAL SUBLOTS CAN BE DEVELOPED. THE WORK SHALL INCLUDE BUILDING CONSTRUCTION, UTILITY SERVICE INSTALLATION, GRADING LANDSCAPING AND THE CONTINUOUS PROTECTION OF EROSION AND SEDIMENT CONTROL
8. EROSION AND SEDIMENT CONTROL ARE TO BE REMOVED AS THEIR USEFULNESS DIMINISH AT ALL INSTANCES, NOTIFY THE SEDIMENT CONTROL INSPECTOR AND OBTAIN WRITTEN APPROVAL BEFORE REMOVAL OF ANY EROSION AND SEDIMENT CONTROL DEVICE OR MECHANISM

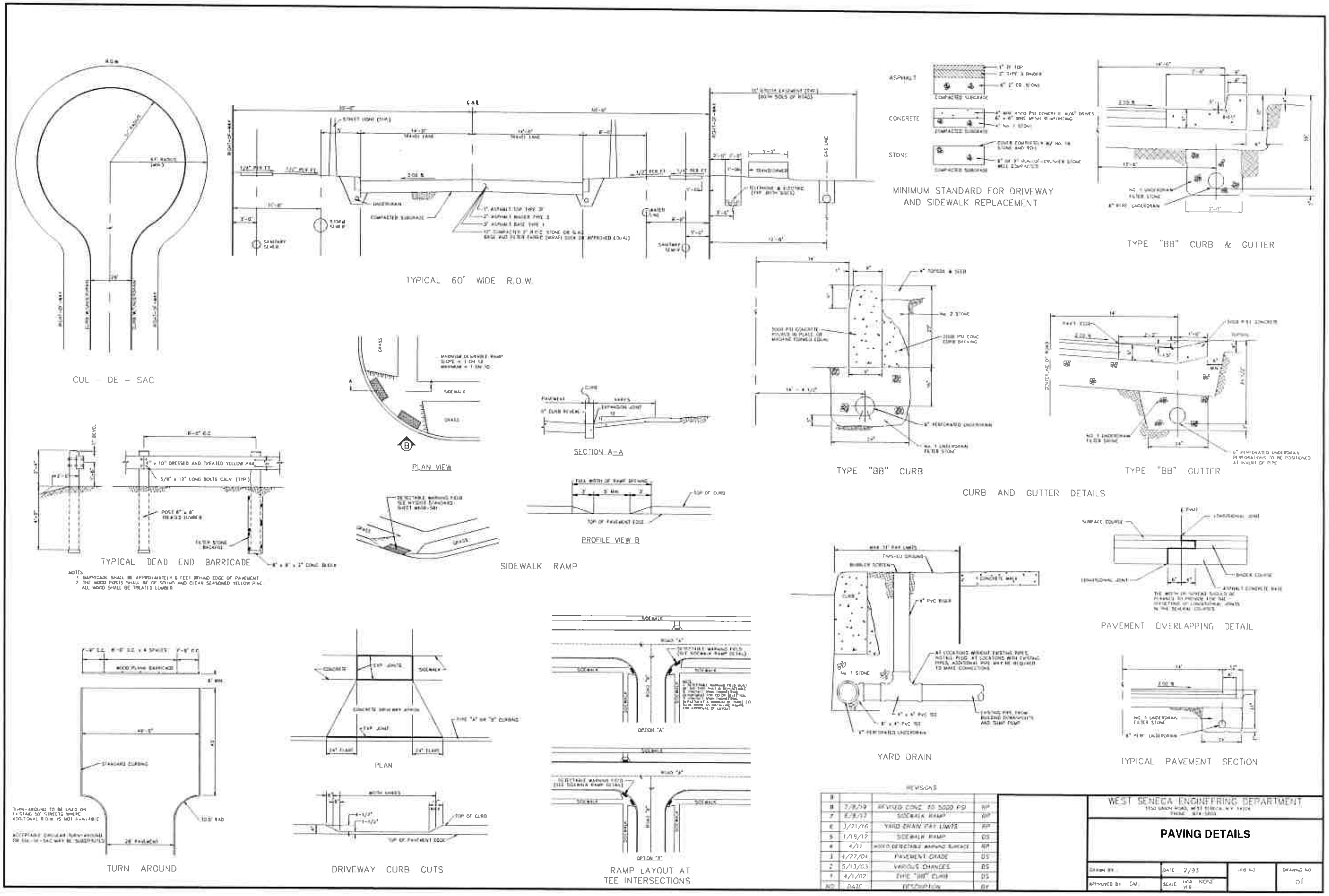
SEDIMENT AND EROSION CONTROL NOTES

1. ALL EROSION/SEDIMENT CONTROL MEASURES SHALL COMPLY WITH ALL REQUIREMENTS OF STATE AND TOWN OF WEST SENECA SOIL EROSION CONTROL AND CONSERVATION AUTHORITIES
2. ALL DISTURBED AREAS TO BE SEEDED WITHIN 14 DAYS OF INITIAL GRADING FOR TEMPORARY SEEDING SPECIFICATIONS, SEE NOTES ON THIS SHEET
3. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO THE INITIATION OF GRADING AND/OR EXCAVATION
4. ALL EARTH BERMS AND SEDIMENT DAMS ARE TO BE MULCHED AND SEEDED WITHIN 7 DAYS AFTER GRADING. ALL SOIL STOCKPILES ARE TO BE MULCHED AND SEEDED WITHIN 14 DAYS
5. DURING CONSTRUCTION, ALL SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED AFTER EACH RAINFALL AND REPAIRED IF NECESSARY. SEDIMENT TO BE REMOVED TO A SUITABLE DISPOSAL AREA AND STABILIZED WITH PERMANENT VEGETATIVE COVER
6. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SEDIMENT AND CONTROL MEASURES UNTIL DISTURBED AREAS ARE STABILIZED
7. AFTER FINE GRADING, ALL DISTURBED AREAS ARE TO BE PERMANENTLY MULCHED AND SEEDED
8. NO SLOPE SHALL BE GREATER THAN 1:1
9. TOPSOIL MAY NOT BE REMOVED FROM THE WORK SITE WITHOUT A PERMIT FROM THE TOWN OF WEST SENECA
10. FOLLOWING INITIAL SOIL DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE
THIS DOES NOT APPLY TO THOSE AREAS WHICH ARE CURRENTLY BEING USED FOR MATERIAL STORAGE OR FOR THOSE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE THAT STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS OF GOVERNING AUTHORITIES
11. ALL TOWN OF WEST SENECA CONSTRUCTION SPECIFICATIONS SHALL APPLY. NO DEVIATIONS FROM THE SPECIFICATIONS WILL BE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE TOWN ENGINEER
12. TEMPORARY SEEDING MIXTURE: ANNUAL RYE GRASS OR WINTER RYE X PRANTED DURING OCTOBER/NOVEMBER (OR PERMANENT SEEDING MIX # 10 TABLE IN MANUAL ENTITLED "NEW YORK GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL"

WEST SENECA ENGINEERING DEPARTMENT
1250 UNION ROAD, WEST SENECA, NY 14224
PHONE: 826-3035

EROSION AND SEDIMENT CONTROL DETAILS

DRAWN BY: GB	DATE: 2/05/04	JOB NO	DRAWING NO
APPROVED BY: CM	SCALE: NOT TO SCALE		5f



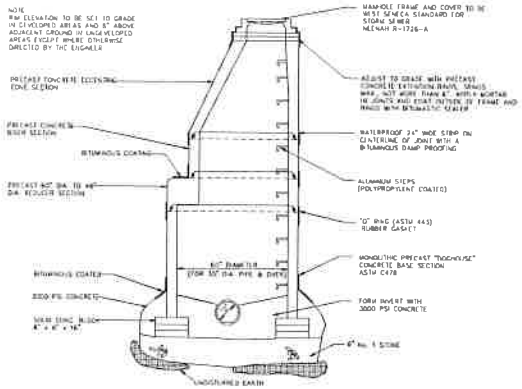
REVISIONS

NO	DATE	DESCRIPTION	BY
9			
8	7/8/19	REVISED CONC. TO 5000 PSI	RP
7	6/8/17	SIDEWALK RAMP	RP
6	3/21/16	YARD DRAIN PAY LIMITS	RP
5	1/18/12	SIDEWALK RAMP	DS
4	4/11	ADDED DETECTABLE WARNING SURFACE	RP
3	4/27/04	PAVEMENT GRADE	DS
2	5/13/03	VARIOUS CHANGES	DS
1	4/1/02	TYPE "BB" CURB	DS

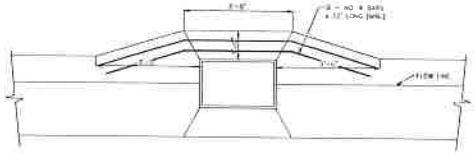
WEST SENECA ENGINEERING DEPARTMENT

PAVING DETAILS

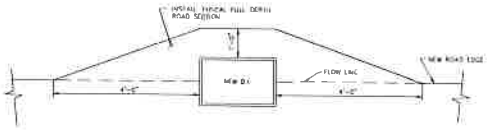
DRAWN BY: | DATE 2/93 | JOB NO | DRAWING NO
APPROVED BY: CM | SCALE HOR NONE VER | | of



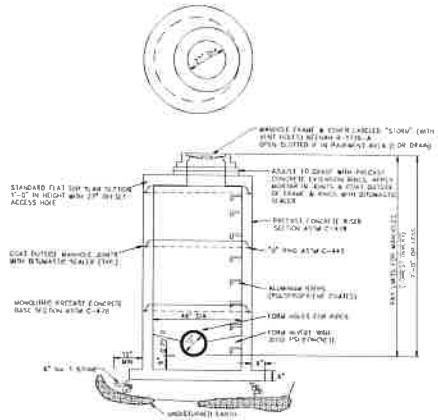
PRECAST CONCRETE MANHOLE OVER EXISTING STORM SEWER



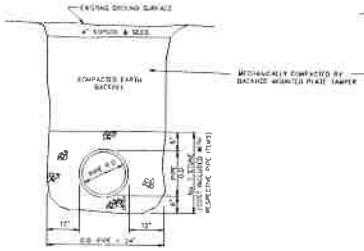
CONCRETE GUTTER AT D.I.'S



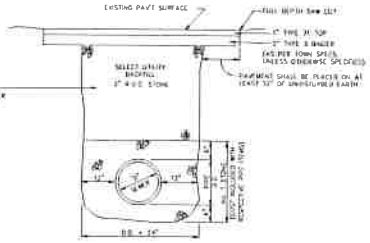
TYPICAL PAVEMENT SECTION AT D.I.'S



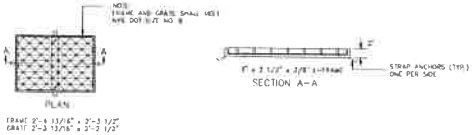
PRECAST CONCRETE MANHOLE (7'-0" OR LESS IN DEPTH)



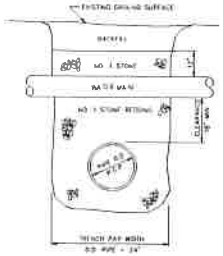
TYPICAL STORM SEWER TRENCH DETAIL



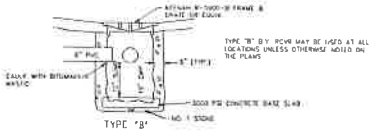
TRENCH DETAIL AT TOWN ROADS & OTHER PAVEMENT CROSSINGS



STANDARD CATCH BASIN



TRENCH DETAIL AT WATER MAIN CROSSING



BACK YARD RECEIVER (B.Y. RCVR) DETAILS

GENERAL NOTES

1. ALL EXCAVATIONS UNDER ANY UTILITY WILL BE BACKFILLED WITH NO. 1 STONE TO A POINT AT LEAST 6" OVER TOP OF THE UTILITY.
2. FOR ALL ROAD CROSSINGS USING JACK AND BORING METHOD, SEE SANITARY SEWER DETAIL SHEET.

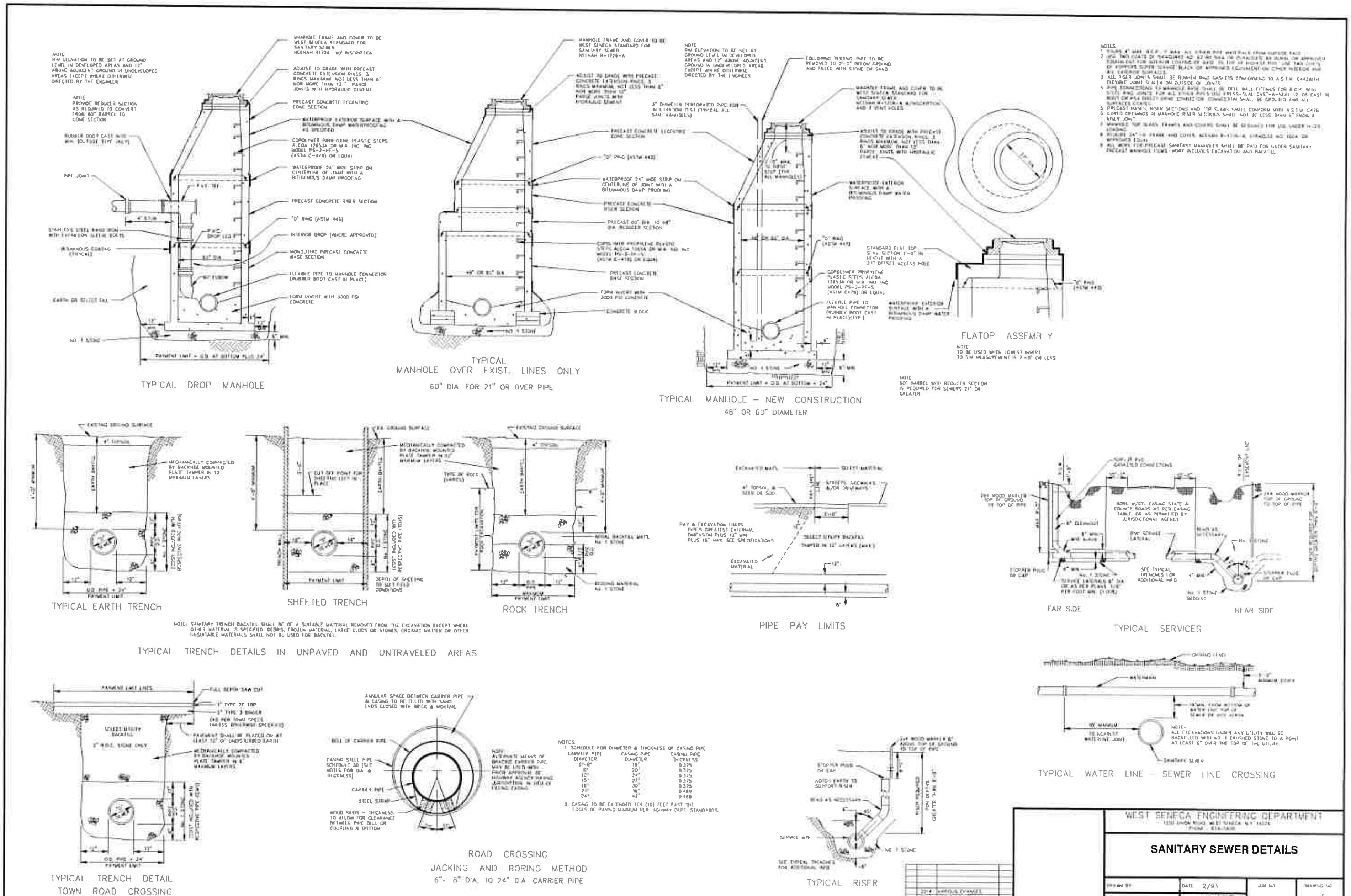
NO.	DATE	DESCRIPTION	BY
1	5/15/03	VARIOUS CHANGES	DS

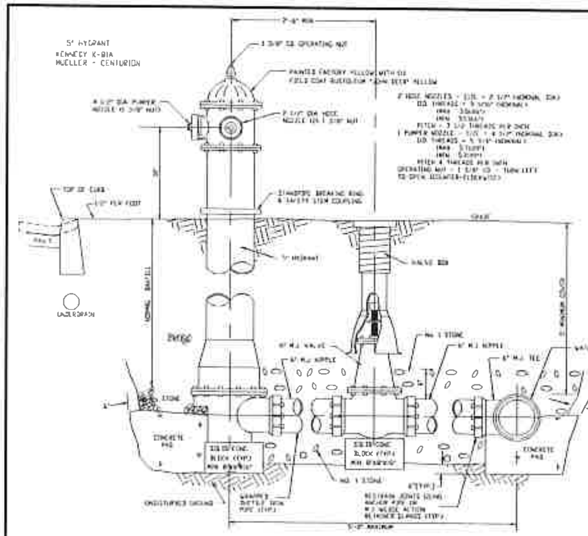
WEST SENECA ENGINEERING DEPARTMENT

1250 UNION ROAD, WEST SENECA, N.Y. 14224
PHONE: 674-1600

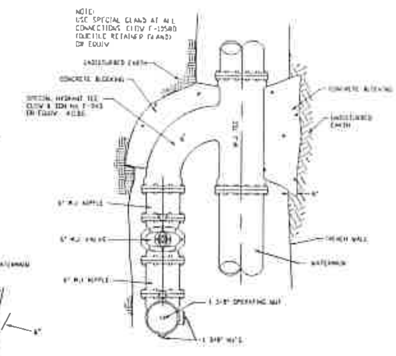
STORM SEWER DETAILS

DRAWN BY	DATE 5/97	JOB NO	DRAWING NO
APPROVED BY CME	SCALE HOR. NONE VER.		01

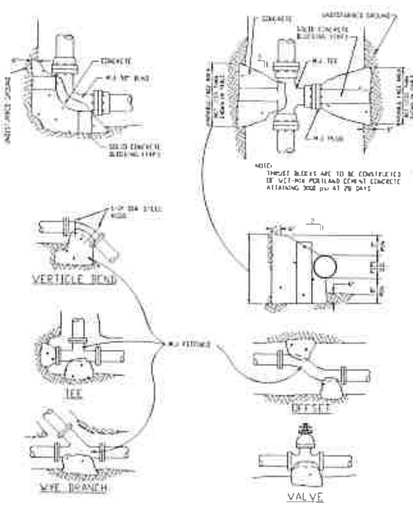

TYPICAL DROP MANHOLE
TYPICAL MANHOLE OVER EXIST. LINES ONLY
60" DIA FOR 21" OR OVER PIPE
TYPICAL MANHOLE - NEW CONSTRUCTION
48" OR 60" DIAMETER
FLATOP ASSEMBLY
TYPICAL EARTH TRENCH
SHEETED TRENCH
ROCK TRENCH
TYPICAL TRENCH DETAILS IN UNPAVED AND UNTRAVELED AREAS
PIPE PAY LIMITS
FAR SIDE
NEAR SIDE
TYPICAL SERVICES
TYPICAL WATER LINE - SEWER LINE CROSSING
TYPICAL TRENCH DETAIL
TOWN ROAD CROSSING
ROAD CROSSING
JACKING AND BORING METHOD
6"- 8" DIA. TO 24" DIA CARRIER PIPE
TYPICAL RISER
WEST SENECA ENGINEERING DEPARTMENT
SANITARY SEWER DETAILS
DATE 2/93



TYPICAL HYDRANT DETAIL



SPECIAL HYDRANT INSTALLATION A.O.B.E



TYPICAL THRUST BLOCKING DETAILS FOR TEES, PLUGS, VALVES AND BENDS

GENERAL NOTES

DUCTILE IRON PIPE SHALL CONFORM TO A.W.W.A. C 151 (ANSI) 81 & SHALL BE CLASS 52 INSTALLED IN ACCORDANCE WITH A.W.W.A. C 600-82 & WRAPPED IN POLYETHYLENE

POLYETHYLENE ENCASEMENT SHALL CONFORM WITH THE APPLICABLE REQUIREMENTS OF THE AMERICAN NATIONAL STANDARD FOR POLYETHYLENE ENCASEMENT FOR GRAY & DUCTILE CAST IRON PIPING FOR WATER & OTHER LIQUIDS A.W.W.A. C 105/A 21.5-82

THE POLYETHYLENE MATERIAL SHALL MEET THE FOLLOWING STANDARDS: [illegible]

POLYETHYLENE MATERIAL SHALL BE IN THE EXTRUDED TUBE FORM IN EITHER PRE-CUT, INDIVIDUALLY PREPARED, SPECIFIED LENGHTS (SUCH AS 20 FT.) OR IN UN-CUT CONTINUOUS LENGHTS FOLDED OR ROLLED IN CONVENIENTLY SIZED PACKAGES

A LISTING OF THE MINIMUM FLATTENED POLYETHYLENE TUBE WIDTHS FOR USE WITH SPECIFIC PIPE SIZES & JOINT TYPES ARE AS FOLLOWS:

NOMINAL PIPE SIZES	PUSH ON JOINT FLAT TUBE WIDTH	MECHANICAL JOINT FLAT TUBE WIDTH
4"	14"	16"
6"	17"	20"
8"	21"	24"
12"	29"	30"
16"	37"	37"
24"	53"	53"

IN ADDITION TO THE POLYETHYLENE MATERIAL, THE PLASTIC ADHESIVE TAPE WILL BE REQUIRED TO COMPLETE THE INSTALLATION. THE TAPE SHALL BE APPROXIMATELY TWO (2) INCHES WIDE, PLASTIC BACKED ADHESIVE TAPE SUCH AS POLYKEN No. 900 OR SCOTCHRAP No. 50

POLYVINYL CHLORIDE (P.V.C.) SHALL BE DR18 & CONFORM TO A.W.W.A. C 900 81 & ASTM D-2241 & SHALL HAVE INTEGRAL BELL JOINTS

P.V.C. PRESSURE PIPE SHALL HAVE DETECTABLE METAL TAPE LAID DIRECTLY ABOVE THE FULL LENGHT OF PIPE APPROX. 18" BELOW GROUND SURFACE. TAPE SHALL BE THREE (3) INCHES WIDE, [illegible], PAUL POTTER WARNING TAPES INC. OR APPROVED EQUIVALENT

DUCTILE IRON FITTINGS 3" THROUGH 24" DUCTILE IRON & POLYVINYL CHLORIDE PIPES SHALL BE FULL BODY (CLASS 350) & CONFORM TO THE AMERICAN NATIONAL STANDARD FOR DUCTILE-IRON & GRAY-IRON FITTINGS FOR WATER & OTHER LIQUIDS, ANSI/A.W.W.A. C 110/A 21.10-82 AS MANUFACTURED BY THE TYLER CO. OR APPROVED EQUIV.

VALVES SHALL BE IN ACCORDANCE WITH A.W.W.A. C 500-80

HYDRANTS SHALL CONFORM TO A.W.W.A. C 502-85 STANDARD FOR DRY BARREL FIRE HYDRANTS AS LISTED

PIPING SHALL BE INSTALLED & TESTED IN ACCORDANCE WITH THE A.W.W.A. C 600-82 FOR DUCTILE IRON WATERMAINS OR A.W.W.A. C 605 FOR P.V.C. PIPE WITH INSTALLATION & TESTING PER A.W.W.A. MANUAL M-23. TEST PRESSURE SHALL BE 170 PSI

DISINFECTION, FLUSHING & BACTERIOLOGICAL TESTING SHALL BE PERFORMED IN ACCORDANCE WITH A.W.W.A. SPECIFICATION C 651-85 (EXCEPT SECTION 5.1)

ONLY ONE CONNECTION MAY BE MADE TO ANY EXISTING WATERMAIN PRIOR TO DISINFECTION & HEALTH DEPARTMENT APPROVAL OF COMPLETED WORKS. AFTER APPROVAL, REMAINING CONNECTIONS MAY BE MADE WITH E.C.W.A. AUTHORIZATION ONLY

THE ERIE COUNTY WATER AUTHORITY SHALL OPERATE ALL VALVES OF EXISTING SYSTEMS & SHALL OPEN NEW VALVES TO NEWLY CONSTRUCTED WATERMAINS

[illegible] TO A.W.W.A. C 800-66 [illegible] TO ASTM B-62-62. COPPER TUBING SHALL BE TYPE "K" & CONFORM [illegible] SHALL CONFORM TO ASTM B-43-62 & SHALL HAVE IRON PIPE [illegible]

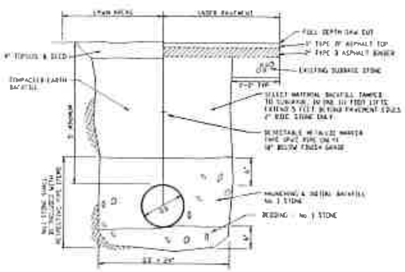
BACTERIOLOGICAL SAMPLES SHALL BE TAKEN FROM SAMPLING POINTS LOCATED AT APPROXIMATELY 1000 FT. INTERVALS (MAXIMUM) & AT THE BEGINNING & END OF EACH SECTION

ALL EXCAVATIONS UNDER ANY UTILITY WILL BE BACKFILLED WITH TAMPED 2" CRUSH OR RUN STONE TO A POINT AT LEAST 6" OVER THE TOP OF THE UTILITY

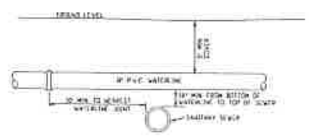
FOR ALL ROAD CROSSINGS USING JACK & BORING METHOD SEE TOWN OF WEST SENECA SANITARY SEWER DETAILS SHEET DATED 9/81

TESTING PROCEDURES

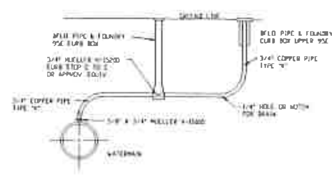
A. PRESSURE TEST SHALL BE DONE PRIOR TO ANY DISINFECTING PROCEDURE
B. DISINFECTING WILL BE DONE BY USING LIQUID CHLORINE OR CALCIUM HYPOCHLORITE
C. LINE MUST BE DISINFECTED FOR AT LEAST 24 HOURS
D. BACTERIOLOGICAL SAMPLES SHALL BE TAKEN FROM SAMPLING POINTS LOCATED AT APPROXIMATELY 1000 FT INTERVALS (MAXIMUM) AND AT THE BEGINNING AND AT THE END OF EACH SECTION
E. BACTERIOLOGICAL SAMPLES WILL BE TAKEN BY A REPRESENTATIVE OF AN APPROVED TESTING LABORATORY (A TECHNICIAN OF A LABORATORY IS CONSIDERED AN APPROVED REPRESENTATIVE)
F. TESTING RESULTS WILL BE SENT TO THE TOWN OF WEST SENECA NOTING EXACT LOCATION OF EACH SAMPLE TAKEN AND THE RESULTS OF THE LABORATORY TESTS



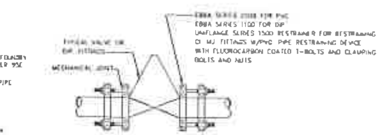
PVC OR D.I. PIPE PAYMENT LIMITS



TYPICAL WATER LINE - SEWER LINE CROSSING

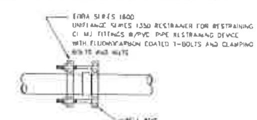


TYPICAL AIR VENT ASSEMBLY



RESTRAINING DETAIL

M.J. VALVES AND FITTINGS TO PVC PIPE



RESTRAINING DETAIL

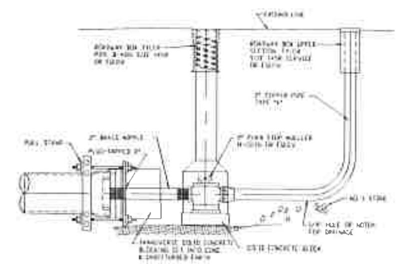
RESTRAINING BELL JOINT PVC PIPE

NOTE: ALL VALVES AND FITTINGS ARE TO BE THRUST RESTRAINED

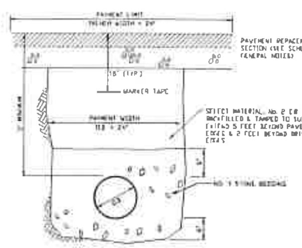
PIPE SIZE	LENGTH OF REQUIRED THRUST RESTRAINT IN FEET (EACH SIDE OF FITTING)			
	11 1/4° BEND	22 1/2° BEND	45° BEND	90° BENDS, VALVES, TEES AND DEAD ENDS (NOT HYDRANT TEES)
6" PVC	12	[illegible]	[illegible]	100
8" PVC	15	[illegible]	[illegible]	[illegible]
10" PVC	[illegible]	[illegible]	68	141
12" PVC	20	38	74	158
8" DIP	[illegible]	20	38	[illegible]

TYPICAL RESTRAINED JOINT DETAILS AND TABLE

NOTE: THRUST BLOCKS ALSO REQUIRED

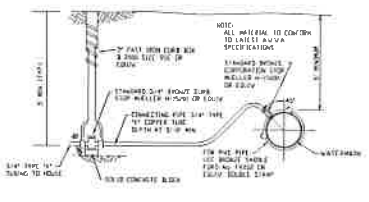


2" BLOW - OFF ASSEMBLY

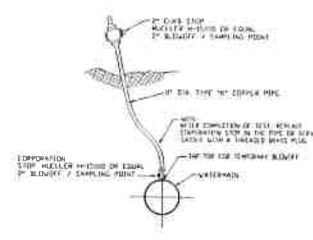


ROADWAY / DRIVEWAY CROSSINGS

TYPICAL WATER MAIN TRENCH DETAIL EARTH OR ROCK



TYPICAL WATER SERVICE LINE INSTALLATION



TEMPORARY BLOW - OFF / SAMPLING POINT

NO	DATE	DESCRIPTION	BY
4	6/16/09	TEMP./BLOW-OFF/SAMP. POINT	GB
3	5/8/08	RESTRAINED JOINT DETAIL TABLE	RP
2	4/21/08	ECWA REV. (MIN. 5' COVER)	DB
1	1/2/07	ECWA REVISIONS	DS

WEST SENECA ENGINEERING DEPARTMENT

WATER LINE DETAILS

DRAWN BY:	DATE 2/93	JOB NO.	DRAWING NO.
APPROVED BY: GM	SCALE HOR. NONE VER.		

Appendix I

NYSHPO Clearance letter

NEW YORK STATE OF OPPORTUNITY | **Parks, Recreation, and Historic Preservation**

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

March 19, 2021

Kathryn Whalen
Project Manager
UB Archaeological Survey
380 Academic Center
University at Buffalo
Buffalo, NY 14261

Re: DEC
Reserve Road Multi-Residential Subdivision Construction Project
Reserve Road, West Seneca, Erie County, NY
21PR01503

Dear Kathryn Whalen:

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 Phase I Archaeological Reconnaissance Survey report prepared by the Archaeological Survey (UBuffalo) (Whalen & Lackos, March 2021; 21SR00172) 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.

Based on this review, OPRHP understands no archaeological cultural resources were identified during the above-noted investigation, and thus no further archaeological investigations are warranted. It is, therefore, OPRHP's opinion that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project. Should the project design be changed OPRHP recommends further consultation with this office.

If you have any questions, I can be reached via e-mail at Josalyn.Ferguson@parks.ny.gov.

Sincerely,

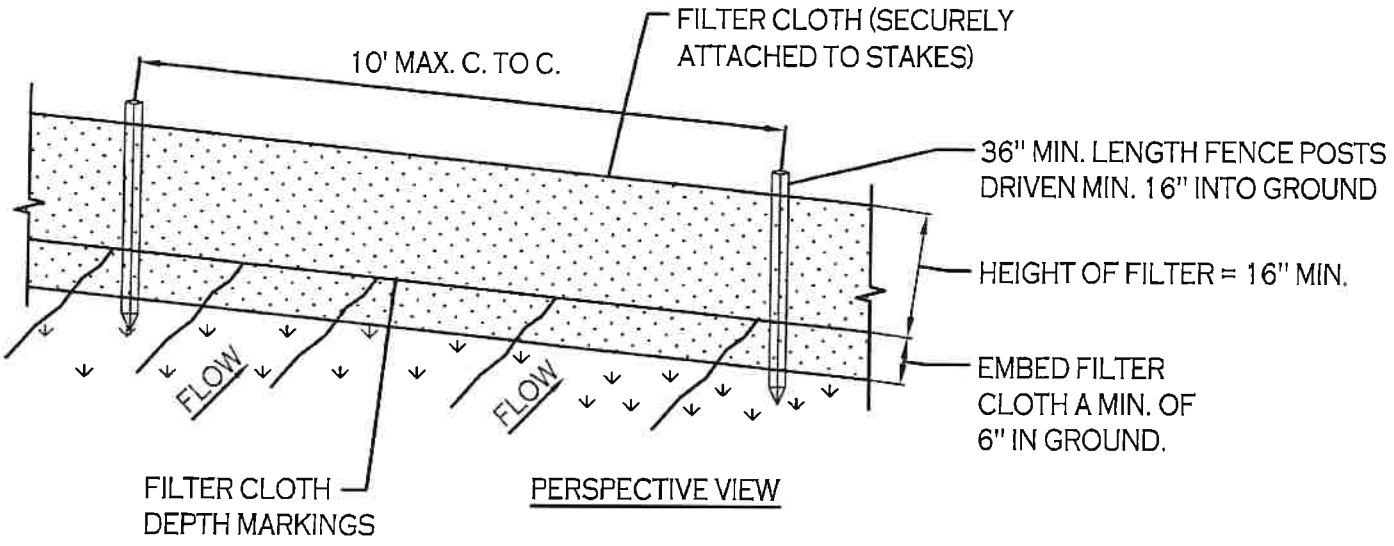
Josalyn Ferguson, Ph.D.
Scientist Archaeology

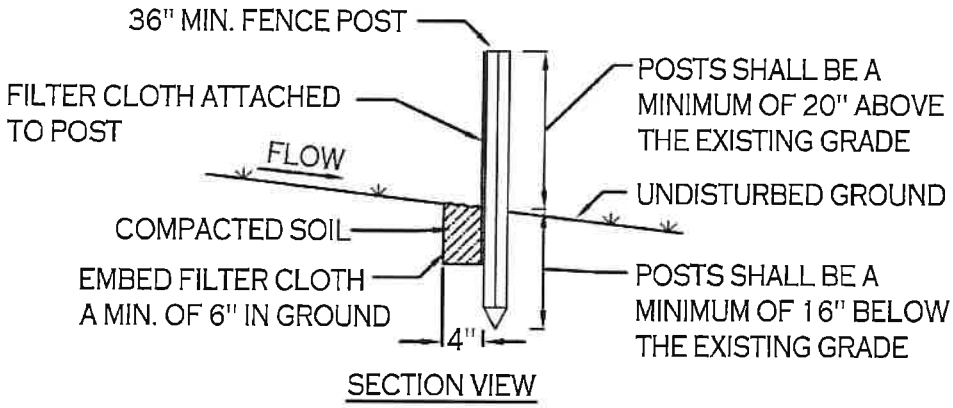
via email only

c.c. Chris Wood
c.c. Douglas Perrelli, UBuffalo

Appendix J

Standard Erosion Control Details





CONSTRUCTION SPECIFICATIONS

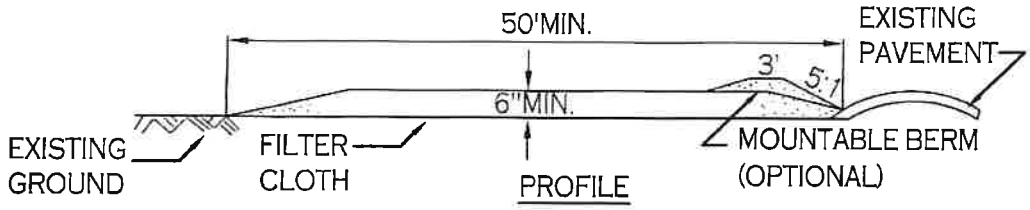
1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.

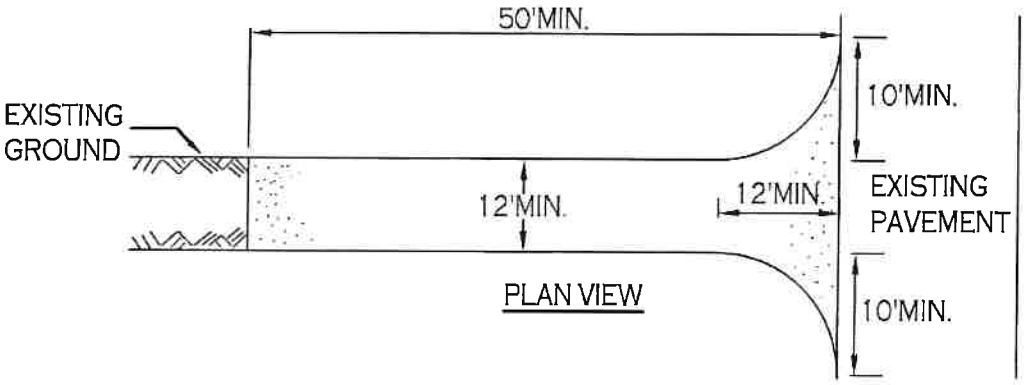
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.

3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL

NOT TO SCALE





CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" 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. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

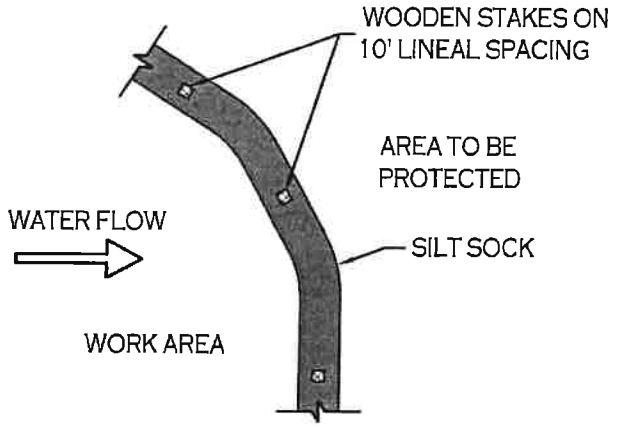
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

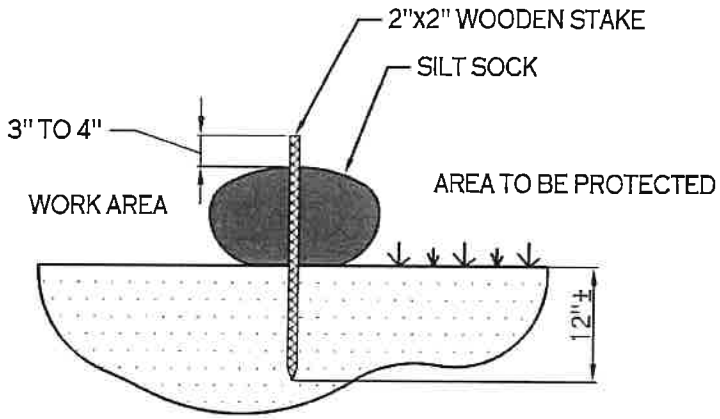
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



PLAN VIEW



SECTION VIEW

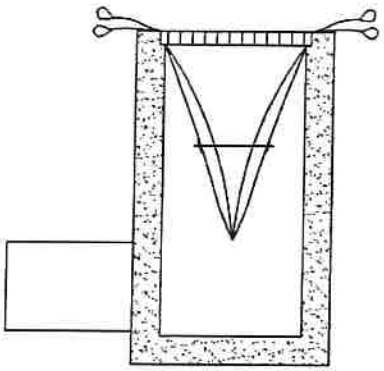
NOTES:

CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

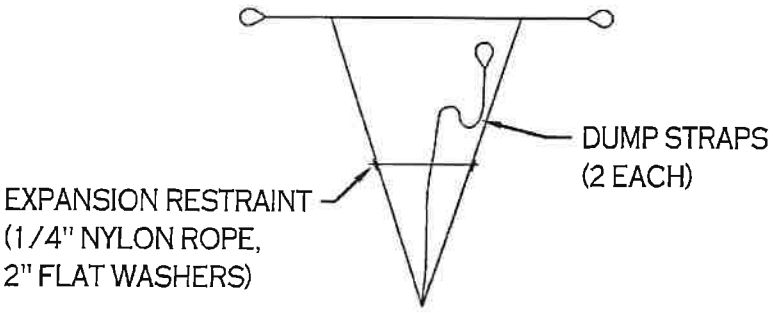
CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED $\frac{1}{2}$ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

SILT SOCK DETAIL

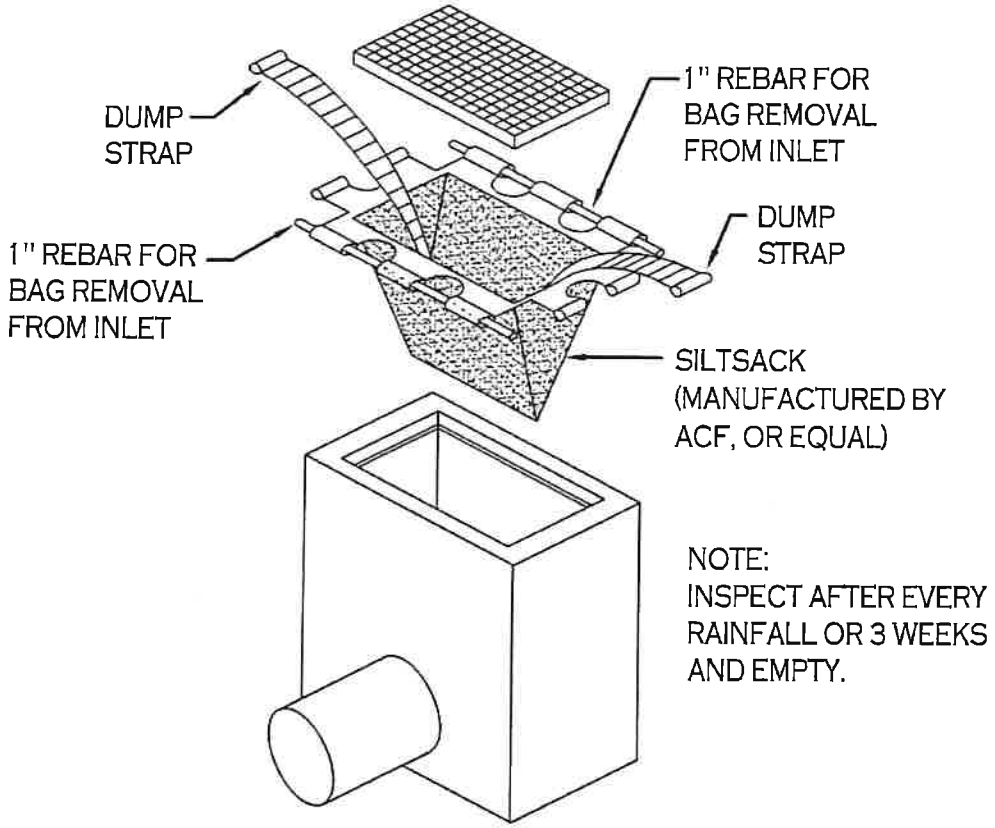
NOT TO SCALE



INSTALLATION DETAIL

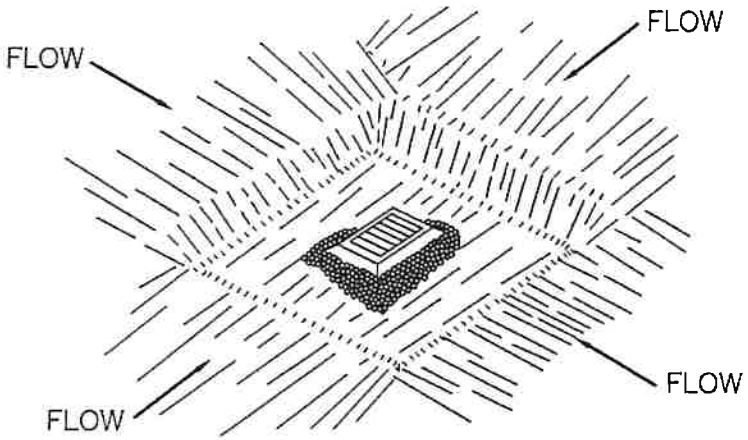


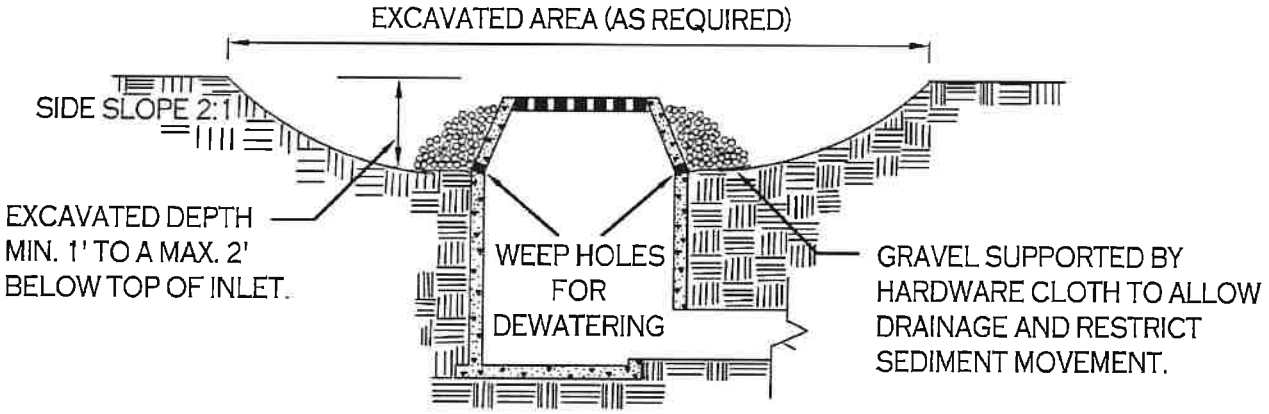
BAG DETAIL



SILT SACK DETAIL

NOT TO SCALE





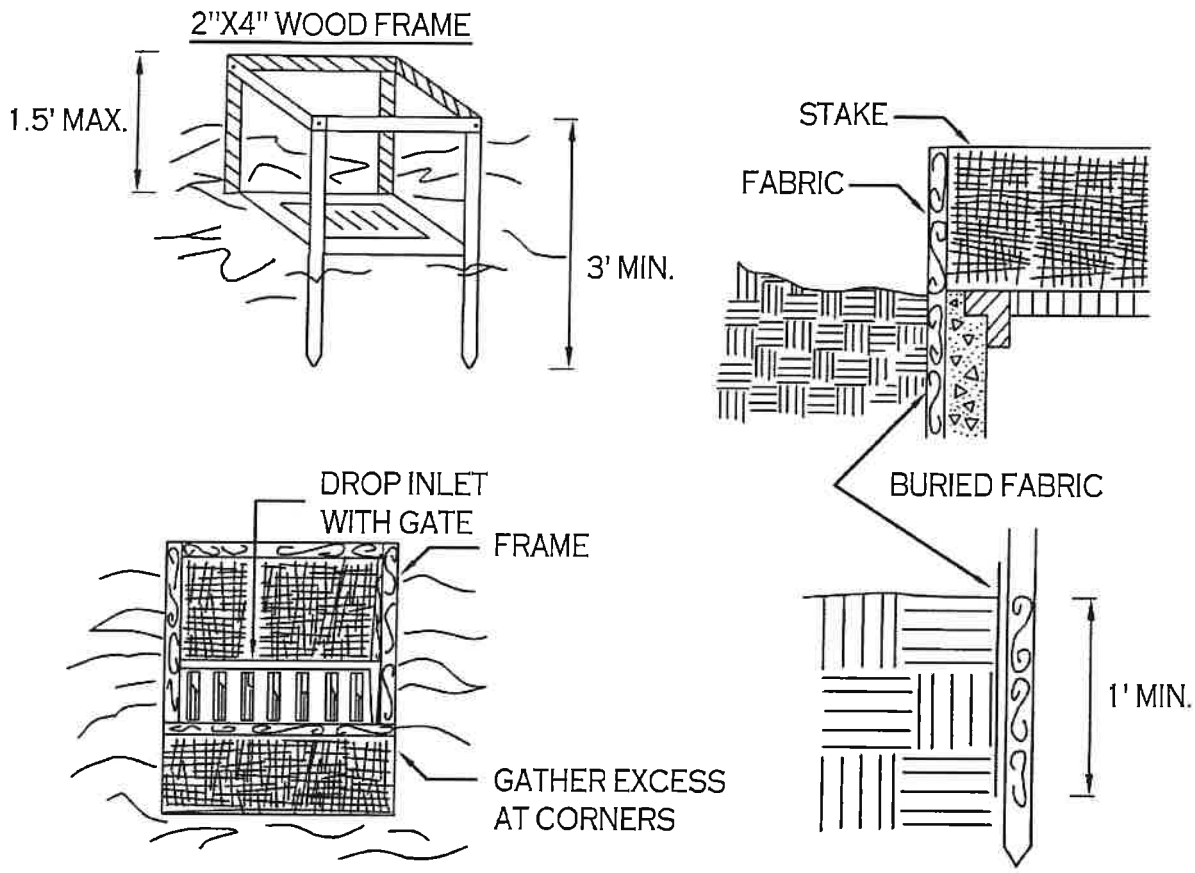
CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1

NOT TO SCALE



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.

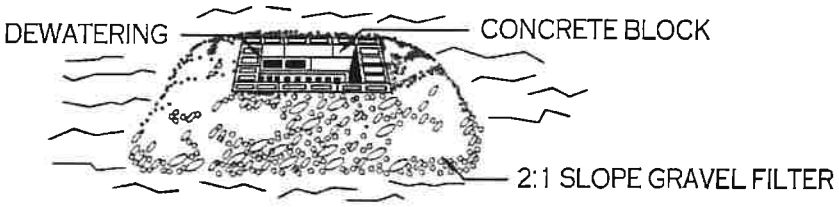
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.

6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

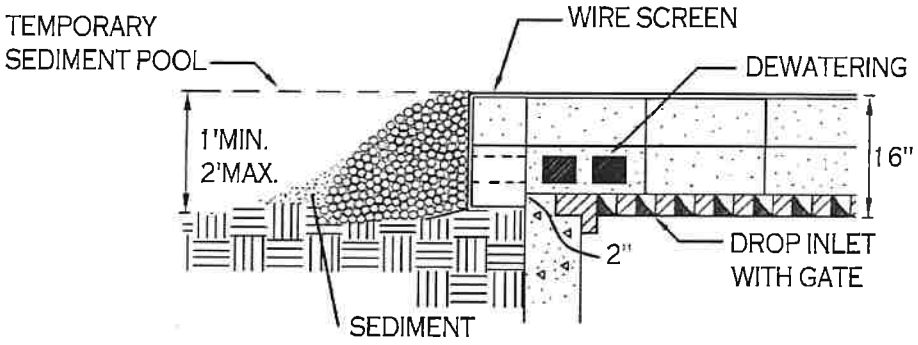
MAXIMUN DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 2

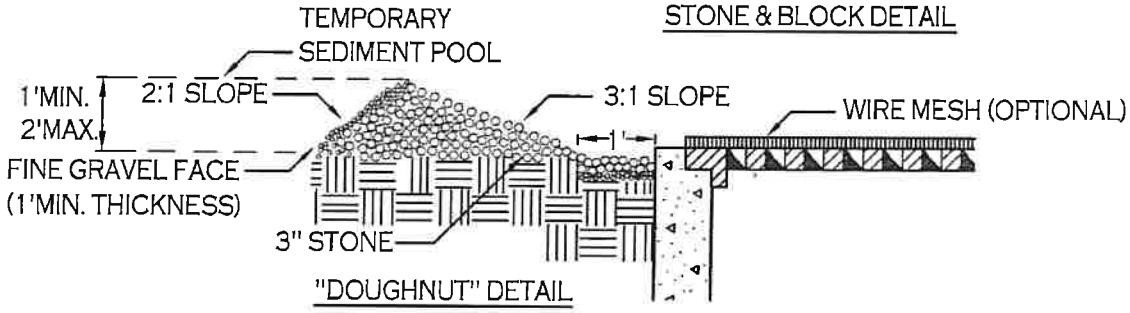
NOT TO SCALE



STONE & BLOCK PLAN VIEW



STONE & BLOCK DETAIL



"DOUGHNUT" DETAIL

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

INLET PROTECTION DETAIL 3

NOT TO SCALE

EXISTING TREE PROTECTION FENCE

MATERIALS

MATERIALS FOR TEMPORARY PLASTIC BARRIER FENCES SHALL MEET THE FOLLOWING REQUIREMENTS:

- FENCE: HIGH-DENSITY POLYETHYLENE MESH, ULTRAVIOLET-STABILIZED MIN. 2 YEARS; MINIMUM HEIGHT 4.0 FEET. COLOR: HIGH-VISIBILITY ORANGE OR GREEN. WHEN USED TO PROTECT TREES OR OTHER VEGETATION, COLOR SHALL BE HIGH-VISIBILITY ORANGE.
- POSTS: RIGID METAL OR WOOD POSTS, MINIMUM LENGTH 6.0 FEET.
- TIES: STEEL WIRE, #14 GAUGE OR NYLON CABLE TIES.
- WARNING SIGNS: SHEET METAL, PLASTIC OR OTHER RIGID, WATERPROOF MATERIAL, 1.5 FEET BY 2.0 FEET WITH 4 INCH BLACK LETTERS ON A WHITE BACKGROUND. TEXT SHALL BE: "PROTECTED SITE - KEEP OUT" UNLESS OTHERWISE SPECIFIED.

DETAILS

FENCES SHALL BE ERECTED PRIOR TO MOVING CONSTRUCTION EQUIPMENT ONTO ANY AREA DESIGNATED FOR PROTECTION.

THE LINE OF FENCES SHALL BE STAKED OR MARKED OUT ON THE GROUND BY THE CONTRACTOR AND APPROVED BY THE ENGINEER/OWNER BEFORE ANY FENCE IS INSTALLED. WHERE USED FOR PROTECTION OF INDIVIDUAL TREES, FENCE SHALL BE PLACED AT THE DRIP LINE (EXTENT OF CANOPY). IF NOT POSSIBLE, PLACEMENT SHALL BE AS CLOSE TO THE DRIP LINE AS POSSIBLE AND IN NO CASE LESS THAN 5.0 FEET AWAY FROM THE TREE TRUNK.

ON APPROVAL OF THE STAKEOUT, POSTS SHALL BE SECURELY DRIVEN ON 6.0 FOOT-MAXIMUM CENTERS, NORMAL TO THE GROUND, TO A DEPTH 1/3 OF THE TOTAL POST LENGTH. PLASTIC BARRIER FENCE SHALL BE PLACED ALONG THE SIDE OF ALL POSTS. ENDS OF FENCING SEGMENTS SHALL OVERLAP A DISTANCE OF AT LEAST ONE HALF THE FENCE HEIGHT.

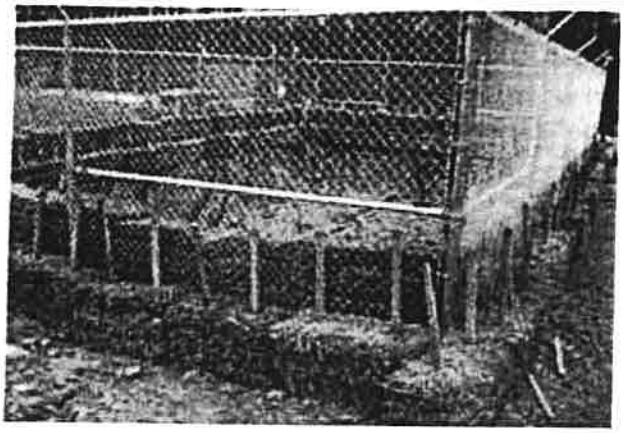
FENCING SHALL BE SECURED TO POSTS WITH WIRE OR CABLE TIES AT TOP, MIDDLE AND BOTTOM OF POST. FASTENER SHALL BE TIGHT ENOUGH TO PREVENT THE FENCING FROM SLIPPING DOWN. OVERLAPS SHALL ALSO BE SECURELY FASTENED.

BARRIER FENCE WHICH IS NOT ORANGE IN COLOR SHALL BE FLAGGED AT 6.0 FOOT INTERVALS WITH RED OR ORANGE FLORESCENT TAPE. WARNING SIGNS SHALL BE MOUNTED ON THE FENCE AT NO MORE THAN 100 FOOT INTERVALS.

MAINTENANCE SHALL COMMENCE IMMEDIATELY AFTER ERECTION OF THE FENCE AND CONTINUE UNTIL ONE WEEK PRIOR TO ACCEPTANCE OF THE CONTRACT, AND SHALL CONSIST OF: REPLACING DAMAGED POST(S) AND FENCING; RE-FASTENING AND TIGHTENING FENCING; AND RESTORING FENCE TO ITS INTENDED HEIGHT.

FENCING USED FOR TREE OR OTHER VEGETATION PROTECTION SHALL NOT BE TEMPORARILY REMOVED TO ALLOW EQUIPMENT ACCESS OVER A PROTECTED AREA, EXCEPT AS REQUIRED FOR ITEMS OF WORK SPECIFICALLY SHOWN ON THE PLANS AND APPROVED BY THE ENGINEER IN WRITING.

STANDARD AND SPECIFICATIONS FOR CONCRETE TRUCK WASHOUT



Definition & Scope

A temporary excavated or above ground lined constructed pit where concrete truck mixers and equipment can be washed after their loads have been discharged, to prevent highly alkaline runoff from entering storm drainage systems or leaching into soil.

Conditions Where Practice Applies

Washout facilities shall be provided for every project where concrete will be poured or otherwise formed on the site. This facility will receive highly alkaline wash water from the cleaning of chutes, mixers, hoppers, vibrators, placing equipment, trowels, and screeds. Under no circumstances will wash water from these operations be allowed to infiltrate into the soil or enter surface waters.

Design Criteria

Capacity: The washout facility should be sized to contain solids, wash water, and rainfall and sized to allow for the evaporation of the wash water and rainfall. Wash water shall be estimated at 7 gallons per chute and 50 gallons per hopper of the concrete pump truck and/or discharging drum. The minimum size shall be 8 feet by 8 feet at the bottom and 2 feet deep. If excavated, the side slopes shall be 2 horizontal to 1 vertical.

Location: Locate the facility a minimum of 100 feet from drainage swales, storm drain inlets, wetlands, streams and other surface waters. Prevent surface water from entering the structure except for the access road. Provide appropriate access with a gravel access road sloped down to the structure. Signs shall be placed to direct drivers to the facility after their load is discharged.

Liner: All washout facilities will be lined to prevent leaching of liquids into the ground. The liner shall be plastic sheeting with a minimum thickness of 10 mils with no holes or tears, and anchored beyond the top of the pit with an earthen berm, sand bags, stone, or other structural appurtenance except at the access point.

If pre-fabricated washouts are used they must ensure the capture and containment of the concrete wash and be sized based on the expected frequency of concrete pours. They shall be sited as noted in the location criteria.

Maintenance

- All concrete washout facilities shall be inspected daily. Damaged or leaking facilities shall be deactivated and repaired or replaced immediately. Excess rainwater that has accumulated over hardened concrete should be pumped to a stabilized area, such as a grass filter strip.
- Accumulated hardened material shall be removed when 75% of the storage capacity of the structure is filled. Any excess wash water shall be pumped into a containment vessel and properly disposed of off site.
- Dispose of the hardened material off-site in a construction/demolition landfill. On-site disposal may be allowed if this has been approved and accepted as part of the projects SWPPP. In that case, the material should be recycled as specified, or buried and covered with a minimum of 2 feet of clean compacted earthfill that is permanently stabilized to prevent erosion.
- The plastic liner shall be replaced with each cleaning of the washout facility.
- Inspect the project site frequently to ensure that no concrete discharges are taking place in non-designated areas.