TOWN OF NISKAYUNA Planning Board and Zoning Commission

<u>Agenda</u> January 8, 2024 7:00 PM

REGULAR AGENDA MEETING

- I. CALL TO ORDER
- II. ROLL CALL
- **III. APPROVAL OF MINUTES**
 - 1. December 11, 2023
- **IV. PUBLIC HEARINGS**
- V. PRIVILEGE OF THE FLOOR
- VI. UNFINISHED BUSINESS

VII. NEW BUSINESS

- 1. RESOLUTION: 2024-01: A Resolution for SEQR determination and call for a public hearing for a 3-Lot minor subdivision at 2890 River Rd.
- 2. RESOLUTION: 2024-02: An Amendment to Resolution 2023-26 for exterior façade renovations including new signage at 3631 State St.

VIII. DISCUSSION ITEMS

- 1. 2890 River Rd. A site plan application for a 3-Lot minor subdivision.
- 2. 1430 Balltown Rd. A site plan application for an addition to the existing building and expansion of the parking lot.
- 3. 2333 Nott St. E. A site plan application for a tenant change to a Market32 grocery store.

IX. REPORTS

- X. COMMISSION BUSINESS
- XI. ADJOURNMENT

NEXT MEETING: January 22, 2024 at 7 PM

To be Held in the Town Board Room & via Remote Software

1		TOWN OF NISKAYUNA
2	P	lanning and Zoning Commission
3		Hybrid Meeting
4		Meeting Minutes
5		December 11, 2023
6	Members Present:	Kevin Walsh, Chairman
7		Chris LaFlamme
8		Michael Skrebutenas
9 10		Genghis Khan Datrial: McDartlan
10		Patrick McPartion
11 12		Leslie Gold
13		Joseph Drescher
14	Also Present:	Laura Robertson, Town Planner (virtual)
15		Clark Henry, Assistant Town Planner (virtual)
16		Alaina Finan, Iown Attorney
17		
18	I. CALL TO ORDER	
19	Chairman Walsh called the hybrid	id meeting to order at 7:00 P.M.
20	II. ROLL CALL	
21	Nancy Strang was absent/excuse	d.
22	III. APPROVAL OF MIN	IUTES
23	1.November 27, 2023	
24	Mr. McPartlon made a motion t	o approve the minutes from the $11/27/23$ meeting with the addition of a
25	minor correction. Mr. Khan see	conded. All were in favor with the exception of Mr. Skrebutenus who
26	abstained.	
27	IV. PUBLIC HEARINGS	
28	No Public Hearings	
29	V. PRIVILEGE OF THE	FLOOR
30	No one for Privilege of the Floor	
31	VI. UNFINISHED BUSIN	ESS
32	No Unfinished Business.	
33	VII. NEW BUSINESS	
34 35	1. RESOLUTION: 2 the existing front	023 – 30: A resolution for site plan approval for renovations to replace and side roof facias / facades at 3514 State St.

36 Chairman Walsh read the following into the record: "RESOLVED, that the Planning Board and Zoning

37 Commission finds the above referenced site plan meets the requirements of the Zoning Code and

- therefore, hereby approves this site plan." He stated the Board reviewed this at the last meeting and the
- 39 resolution had no additional conditions.

- 40 Chairman Walsh asked if the Board was ready for a motion. Mr. LaFlamme made a motion for approval,
- 41 seconded by Ms. Gold.
- 42 Chairman Walsh asked if there was any further discussion. Hearing none, Mr. Henry called the roll:
- 43Mr. LaFlammeAye
- 44 Mr. Khan Aye
- 45 Mr. McPartlon Aye
- 46 Mr. D'Arpino Aye
- 47 Ms. Gold Aye
- 48 Ms. Strang Aye
- 49 Chairman Walsh Aye
- 50 Chairman Walsh stated the resolution was approved.
- 51 The applicant was on line and thanked the Planning Board for their time.
- 52 2. RESOLUTION: 2023 31: A Resolution for approval of a lot line adjustment at 2660
 53 Rosendale / 225 Agostino Ave.

54 Chairman Walsh read the following into the record "RESOLVED, that the Planning Board and Zoning

55 Commission does hereby grant final lot line adjustment approval for 2660 Rosendale Rd and 225

- Agostino Ave as shown on the aforementioned 1-page survey drawing, with the following conditions:
- Prior to recording the plat the final lot line adjustment map shall be sent to the Planning
 Department for their review and approval. Any changes, additions or deletions requested shall be
 addressed to the satisfaction of the Planning Department before printing the mylars."
- 60 Chairman Walsh called for a motion for approval. Mr. Skrebutenas made a motion for approval seconded61 by Mr. McPartlon.
- 62 Chairman Walsh asked if there was any further discussion. Hearing none, Mr. Henry called the roll:
- 63 Mr. LaFlamme Aye
- 64 Mr. Khan Aye
- 65 Mr. McPartlon Aye
- 66 Mr. D'Arpino Aye
- 67 Ms. Gold Aye
- 68 Ms. Strang Aye
- 69 Chairman Walsh Aye
- 70 Chairman Walsh stated the resolution was approved.

Chairman Walsh thanked the applicant for attending the meeting and stated they could follow up with thePlanning Department to get the mylars signed.

- 73 VIII. DISCUSSION ITEM
- 1. 2890 River Rd. A site plan application for a 3-lot minor subdivision.

75 Chairman Walsh stated there was information received too late to be included in the packet but it will be

76 included in January's meeting packet.

- 77 Mr. Roman represented the applicant for this project. Mr. Roman stated they submitted the 100-year
- storm data that the Board requested. Mr. Roman said there was no conflict with their analysis of this
- 79 information. The basement levels are one foot above the 100-year mark. Mr. Roman stated they are
- 80 hoping to get a recommendation for a SEQR from the CAC at their next meeting and he is willing to meet
- 81 beforehand to answer any questions to be ready to go before the Planning Board. Mr. Roman would like
- 82 to get the demolition permit soon so they can get the house down and be ready for the construction of the
- 83 new home so as to not hold up construction.
- Chairman Walsh stated the Planning Board has no say over building permits, that is solely on theBuilding Department.
- Ms. Robertson said the Building Department does not approve building permits for demolition until thePlanning Board approves the final sub-division.
- 88 Mr. Roman asked if it would be possible to put this through ahead of that decision.
- 89 Chairman Walsh stated that the Planning Board does not make that determination. Ms. Robertson stated
- no, the Town does not issue partial permits for projects that have not been approved by the Planning
- 91 Board fully.
- 92 Chairman Walsh said there is a recommendation from the floor for a tentative Resolution for the next
- 93 meeting on January 8, with the potential to make a SEQR determination and call for a Public Hearing
- based on the input received from the CAC on January 5^{th} .
- All were in favor of the tentative Resolution as outlined for the next meeting.
- 2.1430 Balltown Rd. A site plan application for an addition to the existing building and
 expansion of the parking lot.
- 98 Mr. Palleschi said they did change the tree planting from Red Maples to White Oaks per the request of the
- 99 CAC. Another change is the existing sidewalk would be striped and an additional sidewalk would be
- added to the main entrance. Mr. Palleschi said they changed the storm water retention basin from
- 101 underground to locating it in front of the new addition, making it grass filled so it can be mowed and
- adding plantings in front of it. They have also reduced light poles from four or five to two poles with
- double heads. The parking lot was changed a bit and two more mature trees will be saved.
- 104 There was detailed discussion about the storm water retention basin being placed on the front of the 105 building and how that impact the site.
- 106 Mr. D'Arpino stated he is not in favor of the storm water retention basin in the front of the building.
- 107 Ms. Gold would like the TDE's input on the storm water retention basin.
- 108 Chairman Walsh said the next step is to continue to receive feedback from the Town designated Engineer,
- and if there are no concerns, the Board should be able to call for a Resolution at the January 8 Planning
- 110 Board Meeting. There were no objections.
- 111 3. 2333 Nott St. E. A site plan application for a tenant change to a Market32 grocery store.
- 112 Chairman Walsh said the signage and color scheme are important the tenant change is a fairly simple
- 113 change going from grocery store to grocery store. Chairman Walsh told the applicant to continue to work
- 114 with the Planning Office and the Planning Board as they move forward.
- 115 Mr. Khan asked what is the proposed name of the Plaza.
- 116 Ms. O'Neill, representing the applicant virtually, said she believes they are proposing "Market 32 Plaza"
- 117 but it hasn't been approved by management.
- 118 Chairman Walsh stated Ms. Gold has volunteered to be Project Lead.

119 IX. REPORTS

120 X. COMMISSION BUSINESS

121 Chairman Walsh asked if everyone was good with the 2024 calendar. Mr. McPartlon asked why there

were several months with only one meeting. Ms. Robertson stated that was due to the Board room being closed for early voting.

- 124 Chairman Walsh called for a show of hands in favor of adopting the 2024 meeting calendar. He stated
- more meetings could be added at a later date if needed. All were in favor with the exception of Mr.
- 126 McPartlon who dissented, stating he felt it was important to have two meetings every month.

127 XI. ADJOURNMENT

Ms. Gold made a motion to adjourn, Mr. Khan Seconded. All in favor, the meeting was adjourned at 8:17pm.

130 *The video recording for this meeting can be found at: https://www.youtube.com/watch?v=1huaaLPIeOs&list*



TOWN OF NISKAYUNA PLANNING BOARD AND ZONING COMMISSION

AGENDA STATEMENT

AGENDA ITEM NO. VII. 1

MEETING DATE: 1/8/2024

ITEM TITLE: RESOLUTION: 2024-01: A Resolution for SEQR determination and call for a public hearing for a 3-lot minor subdivision at 2890 River Rd.

PROJECT LEAD: Patrick McPartlon and Genghis Khan

APPLICANT: Michael Dussault, P.E., agent for the owner

SUBMITTED BY: Laura Robertson, Town Planner

REVIEWED BY:

Conservation Advisory Council (CAC) Zoning Board of Appeals (ZBA) Town Board

ATTACHMENTS:

Resolution Site Plan Map Report Other:

SUMMARY STATEMENT:

Michael Dussault, P.E., of Engineering Ventures, P.C. and agent for Ryan Lucey, property owner, has made an application for Sketch Plan Approval – 4-Lots or Less for a 4-lot subdivision at 2890 River Rd. The proposed subdivision will divide the existing 5.26 Acre property at 2890 River Rd and the 0.83 Acre property contiguous to it along Seneca Rd into 4 lots of 0.46, 0.46, 2.64 and 2.53 Acres, respectively. The existing home at 2890 River Rd is in very poor condition and will be demolished.

The property is located within the R-1 Low Density Residential zoning district.

The Town Designated Engineer (TDE) provided a 2nd comment letter in response to the most recent site plan design (dated 12/8/23). A few action items remain and are included in the Agenda Statement, below. The Conservation Advisory Council met on 1/3/24 and made a recommendation to the lead agency (Planning Board) for a conditional negative SEQR declaration as described below. A resolution for a conditional SEQR declaration and a call for a public hearing for the 3-lot minor subdivision is included in the meeting packet.

BACKGROUND INFORMATION

The property owner, Ryan Lucey, met with Department Heads of the Niskayuna Planning, Water, Sewer & Engineering and Highway Departments to discuss a proposed 4-lot subdivision as shown in the drawing entitled "Subdivision Plan 2890 River Rd." by Engineering Ventures, P.C. dated 6/23/23 with no subsequent revisions. At the time Mr. Lucey owned the 5.26 Acre property at 2890 River Road and was in the process of purchasing the 0.83 Acre property contiguous to it along Seneca Rd. The utility review performed by the Town representatives identified the project area as being susceptible to flooding during heavy rain events. It was noted that a thorough storm water review will be required. Mr. Lucey was informed that for his proposed subdivision to come before the Planning Board he would need to demonstrate site control by obtaining signature approval of the application from the current owner of the 0.83 Acre portion of land or wait until the sale of the land to him was completed.

On 8/23/23 Mr. Lucey provided with Planning Office with the following documents.

- A sketch plan application for a minor subdivision of 4-lots or less
- A "Contract For Purchase and Sale of Real Estate" dated 8/16/23 indicating that Mr. Lucey owned the 0.83 Acre parcel of land.
- A 1-page survey drawing entitled "Survey Lands of RPL Family Trust #2890 River Rd." by Gilbert VanGuilder Land Surveyor, PLLC dated 12/1/2022 with no subsequent revisions.
- A 1-page subdivision site plan entitled "Subdivision Plan Proposed 4-Lot 2890 River Rd." by Engineering Ventures P.C." dated 8/23/23 with no subsequent revisions.
- A Short Environmental Assessment Form (EAF) Part 1 dated 6/22/23.

6/23/23 Subdivision Drawing

This drawing includes 4 lots. Two (2) of the lots front River Road, one (1) lot fronts Seneca Road near its intersection with River Road and one (1) lot fronts Seneca Road near the cul-de-sac at the northeast end of the road.

8/23/23 Subdivision Drawing

This drawing includes 4 lots. Three (3) of the lots front River Road, the one (1) lot near the intersection of Seneca Rd and River Rd has been eliminated and the one (1) lot that fronts Seneca Rd. near the cul-de-sac at the northeast end of the road remains.

Mr. Lucey and his representatives are before the Board this evening to present and discuss his application. The Planning Board and Planning Office should review the application relative to Town codes and the current storm water conditions along Seneca Rd.

<u>8/28/23 Planning Board (PB) meeting</u> – Ryan Lucey and Michael Roman attended the meeting and presented the project to the Board. They explained the 6/23/23 4-lot subdivision drawing included two lots on Seneca Rd and two lots on River Rd. The 8/23/23 drawing includes one lot on Seneca Rd and 3 lots on River Rd. The Board and Planning Office discussed the history of storm water accumulation during storms in this general area and stated a through upstream and downstream storm water analysis will be needed. Mr. Khan stated that in other areas of Niskayuna the Board has essentially inherited storm water challenges – in this area, and on this project, they have the opportunity to avoid storm water related issues. The Board noted that the small strip of property along Seneca Rd near the intersection with River Rd may be able to be used to help mitigate storm water events. The Board concluded their discussion with a request that a few additional items be added to the site plan: the addition of limits of clearing and footprints of homes that are representative of the size the applicant intends to build.

<u>9/6/23 PB Project Lead site walk</u> – The PB project leads and Mr. Lucey walked the project site to obtain a first-hand look at the land, wetlands, grading, neighboring properties, etc.

<u>9/6/23 Conservation Advisory Council (CAC) meeting</u> – The CAC briefly reviewed the project at their regularly scheduled meeting. Ms. Robertson presented the site plan and provided background regarding the storm water challenges in the area. She asked the Board to familiarize themselves with the project details and the project site. She suggested they drive by the area to get a first-hand feel for the distances between houses, storm water drainage areas, etc. Chairman

Strayer noted that he would like to see a multi-use path be included in the plan connecting Seneca Rd to River Road Park. He also noted that a Town access easement along River Road along the project area would be helpful for the installation of a future sidewalk or multi-use path someday. Ms. Robertson said the CAC will be reviewing this again during the October 4, 2023 meeting.

<u>9/11/23 Planning Board (PB) meeting</u> – Mr. Roman and Mr. Lucey attended the meeting. The coproject leads, Patrick McPartlon and Genghis Khan updated the Board on their observations during the 9/6/23 site walk. They noted the upland properties, Iroquois and Rosendale schools, Campo Court, etc., and observed that water generally flows towards the existing culvert under Seneca Road and into the wetland area of 2890 River Road. Ms. Robertson noted that Niskayuna Zoning Code includes sections requiring the examination of upstream and downstream drainage when conducting a Stormwater Management Report. The discussion primarily focused on drainage and how to efficiently assess the existing condition and post-development condition. Ms. Robertson recommended that existing stormwater reports for the neighboring sites be reviewed by Mr. Lucey's engineer. Mr. McPartlon encouraged the Board members to visit the site and acquaint themselves with the grading, vegetation, etc. Ms. Finan noted that Mr. Lucey still needs to demonstrate full site control of the thin strip of land along Seneca Road via. either signed approval of the current land owner or evidence that he is the landowner. Ms. Robertson noted that the Planning Office is in the process of securing quotes for a TDE review of the project.

A summary of actions that have occurred since the 9/11/23 meeting is as follows.

- Mr. Lucey submitted a FOIL request and received the Stormwater Management Report for the Iroquois Middle School project that is currently underway.
- The Planning Office has received 2 quotes for a TDE review of the proposed project.
 One additional quotation is expected.
- The Planning Office has located the Storm Water Management Report for the Campo Court 7lot major subdivision that is upstream from the proposed action.
 - Stormwater reports for other upstream areas are in the process of being located
- At the request of Mr. Lucey, a site walk with the Engineering and Highway Departments is planned for Thursday 10/5/23.

<u>10/2/23 Planning Board (PB) meeting</u> – Mr. Lucey and Mr. Roman attended the PB meeting. Chairman Walsh asked Mr. McPartlon, co-project lead of the project for the Planning Board, to provide a quick update since the last meeting. He stated that a Town Designated Engineer (TDE) was in the process of being selected and a site walk was being planned to familiarize everyone with the property. Mr. Roman added that the applicant's engineer was preparing a storm water management report.

<u>10/4/23 Conservation Advisory Council (CAC) meeting</u> – Laura Robertson, Town Planner, provided the CAC with background information on the proposed project. She described the slides and pictures that have been assembled documenting recent storm water related events in the area recently. A CAC member stressed that we need to make sure we are planning for the future and heeding storm water trends, etc. The CAC requested that the site plan drawings include representative footprints of the homes that are intended for the lots rather than small generic squares or rectangles. They also requested an inventory of animals that inhabit the area that may be impacted by the development of the land.

<u>10/5/23 Site walk</u> – A site walk was held at noon on 10/5/23. Participant's included Ms. Robertson, Town Planner, & Mr. Henry of the Planning Office, Mr. Doug Cole, the TDE from Prime Engineering, Mr. Yetto Superintendent of Water, Sewer and Engineering, Mr. Smith Superintendent of the Highway Department, Mr. McPartlon and Mr. Khan of the Planning Board, Mr. Lucey and his team including his engineer and a few interested neighbors. The Planning Office explained the roles and responsibilities of each member of the project team and stressed the importance of how important communication between the applicant's engineer and the TDE will be to the success of the project. The group walked the upstream areas and discussed how storm water is managed and drains on the property. Prior to concluding the site walk meeting the group noted that the next step is for the applicant's engineer to complete and submit a storm water management report.

<u>10/16/23 Planning Board (PB) meeting</u> – Mr. Lucey and his design team were present at the meeting. Collectively, Mr. McPartlon, PB Project Co-Lead with Mr. Khan, Mr. Roman and Mr. Dussault, P.E. provided the Board with an update on the project.

- Mr. Roman noted that Mr. Lucey had closed on the purchase of the lot of land forming a thin strip along Seneca Rd.
- Mr. Dussault provided an update on the onsite and offsite stormwater analysis
 - He noted that he agreed with the analysis performed on the Iroquois Middle School
 - The upstream analysis was performed using the 25-year storm rainfall rates
 - o His downstream analysis was performed using the 5-year storm rainfall rates
 - o The analysis showed that the existing culverts under Seneca Rd. are undersized
 - With the assumptions noted in the report, the onsite stormwater discharge is essentially the same post-project as pre-project
- The Planning Board and Planning Office discussed how to best review and provide appropriate feedback to the applicant on the project at this stage (sketch plan stage) of the project.
- It was determined that TDE comments regarding the stormwater analysis and site plan would be valuable to help the applicant and the Board quantify potential challenges inherent in the site.
- The Board noted that a TDE had been selected and would begin the technical review as soon as an escrow account was set up.

The following activities and revisions to the site plan occurred since the 10/16/23 PB meeting.

- 10/27/23 An escrow account was established and the TDE was immediately engaged.
- 11/6/23 A revised site plan drawing was received (dated 11/3/23) consisting of 3-lots and is included in the packet for the 11/13 23 PB meeting.
- 11/8/23 A 1st TDE comment letter was received by the Planning Office and is included in the packet for the 11/13/23 PB meeting.

<u>11/8/23 Conservation Advisory Council (CAC) meeting</u> – The Planning Office provided a general review of the history and status of the project and noted receipt of the 1st TDE comment letter and revised 3-lot subdivision site plan. Ms. Robertson noted that the CAC will be reviewing the project in more detail as the review process moves forward.

<u>11/13/23 Planning Board (PB) meeting</u> – Mr. Roman, agent for Mr. Lucey, and Mr. Dussault, of Engineering Ventures, attended the meeting and represented Mr. Lucey. They referenced the revised site plan drawings dated 11/3/23 which now depict a 3-lot subdivision. Mr. Cole, of Prime Engineering and TDE for the project, summarized his TDE response letter dated 11/8/23. A detailed discussion of the project ensued and the group agreed on the following.

- Site control for the application was established on 11/2/23 when Mr. Lucey's ownership of Tax Parcel 51.9-2-1.2, the lot of land along Seneca Rd. near the intersection of River Rd., was recorded in the Schenectady County Clerk's Office.
- Proposed design reduced from 4-lot subdivision to 3-lot subdivision.
- The new lots will include on-lot stormwater management practices (retention basins, etc.) such that the post development runoff will be equal to or less than the pre development runoff.
- Design includes an 80' wide easement to the Town that encompasses the ditch in the wetlands
- Stormwater report will have to be revised to reflect the 3-lot design.
- Stormwater analysis will be performed using 100 yr. rainfall rates.
- Mr. Lucey and the Town will explore a conservation easement, extending the 80' easement or deeding the land along Seneca Rd. near River Rd. to the Town to enable the land to be used as a stormwater management basin.
- Mr. Dussault will provide written responses to the TDE letter dated 11/8/23.
- The Town will include upstream and downstream analysis and culvert design in their town-wide drainage analysis project.

<u>11/27/23 Planning Board (PB) meeting</u> – The applicant and the Planning Board Project Leads provided the Board with an overview and update of the project. After a short discussion the PB approved Resolution 2023-28 granting sketch plan approval to the proposed 3-lot subdivision.

Since the 11/27/23 PB meeting the applicant has provided the following documents to the Planning Office.

- <u>11/28/23</u> A 21-page report entitled "Endangered Species Habitat Suitability Assessment Report" by Gilbert VanGuilder Land Surveyor, PLLC dated 9/22/23.
- <u>11/28/23</u> A 19-page report entitled "Phase 1 Archaeological Survey 2890 River Rd. Town of Niskayuna Schenectady County 23PR05721 by Timothy J. Abel, PhD 33512 SR 26 Carthage, NY 13619 dated 11/21/23.
- <u>12/5/23</u> A 1-page letter entitled "USACE 2890 River Road Subdivision and Three New Single-effecFamily Homes, 2890 River Rd, Niskayuna, NY 12309, 23PR05721 by Jessica Schreyer, Archaeology Unit Program Coordinator, of the New York State Parks, Recreation and Historic Preservation Department dated 12/4/23.

<u>12/6/23 Conservation Advisory Council (CAC) meeting</u> – The applicant and his engineer attended the meeting and updated the CAC on the proposed project. They noted that they are designing stormwater retention areas for each of the lots to control the post-development stormwater discharge to pre-development levels. They also noted that the basement elevation of the home on lot 2 will be 1' above the 100-year flood elevation. After a discussion the Council chose to table making a SEQR recommendation until they can review updated site plans that were discussed.

<u>12/8/2023 Complete Streets Committee Meeting -</u> The Complete Streets Committee reviewed the most recent revision to the subdivision drawings and expressed their support and recommendation to the Planning Board for a public access easement between Seneca Road and River Road Park along the existing trail connection and a public access easement along River Road for a potential future multi-use path.

<u>12/11/23 Planning Board (PB) meeting</u> – Mr. Ryan and his design team were present at the meeting. They described the revised plans and documents that were emailed to the Planning Office on Friday afternoon 12/8/23 (the plans were received too late to be included in the

documentation packet for the 12/11/23 PB meeting so they were emailed separately to the PB members). Chairman Walsh noted the documents will be included in the meeting packet for the 1/8/24 PB meeting. It was noted that the CAC did not make a SEQR recommendation at their 12/6/23 meeting. LR explained that the applicant described design revisions that were underway on 12/6/23 but no documentation of the revised design was provided to the CAC at the meeting. Therefore, the CAC decided to table making a SEQR recommendation until they received and reviewed the revised documents. After a general discussion the PB called for a tentative resolution for the 1/8/24 PB meeting to make a SEQR determination based upon proposed CAC action on January 3rd and call for a public hearing for the 1/22/24 meeting.

12/28/23 – 2nd TDE comment letter -- The TDE provided a 5-page comment letter regarding the following documents.

- The applicant's response letter dated 12/6/23
- Revised site plans dated 12/6/23
- Updated SWPPP dated 12/6/23
- Subdivision application dated 12/4/23
- Revised Short Form EAF dated 6/22/23

Noteworthy comments in the 2nd TDE comment letter include but are not limited to the following.

- Site Plan
 - Some of the large paved driveway/parking area on Lot 3 appears to shed water to the West, however, this new impervious area should be directed to the proposed bioretention area.
 - 7. We ask that the driveway culverts for all 3 lots be sized to convey the 100-year
 24-hour storm event and include velocity dissipation features at the outlets.
 - 8. The [lot 2] basement floor elevation is stated to be approximately 291.40, which is essentially at proposed grade at the rear of the home and would still be about 12" above the anticipated water level in the wetland during the 100-year storm event. The analysis was performed under the conservative assumption that the culvert crossing at Seneca Road and the wetlands adequately convey flows to the inlet of the River Road culvert (control point). The Applicant also states that the new homes will be constructed with waterproofing techniques and sump pump back up. We find this to be acceptable and it can be confirmed through Town building permit inspection during construction.
 - 12. The Town multi-use path easement needs to be shown on lot 3. The Town will also require the applicant to prepare and show on the plan a utility easement between the Seneca Road right-of-way and the Town Park property for potential future utility installation.
 - 13. The Town would like to see a Street Planting Plan as part of the next drawing set revisions. The code states that the trees shall have a minimum of 2.5" caliper at 5 feet above grade and be planted parallel to the street with a minimum of 2 trees per lot or one tree every 60 feet of road frontage.
- SWPPP
 - In Section IX.C. Maintenance, Inspections and Record Keeping, Permanent E&SC Practices and Post Construction Features, "Infiltration Basins" is mentioned, however, no infiltration basins are proposed. The applicant should remove and replace with a section describing "Bioretention" practice requirements, as well as add a section for "Vegetated Swale" for the frontage area along Lot 3.

<u>1/3/24 Conservation Advisory Council (CAC) meeting</u> – Michael Roman and Michael Dussault attended the meeting on behalf of the applicant, Ryan Lucey. Chairman Strayer provided a short update on the project and Mr. Roman provided additional detail on a number of topics including the following.

- The number of proposed lots have been lowered from 4 to 3
- The Army Corps of Engineers permit regarding wetland disturbance is pending and they expect to receive approval very soon.
- Mr. Lucey agreed to provide the Town with a drainage easement allowing them to access a large portion of the southeastern portion of the property extending all the way to Seneca Road.
- Mr. Lucey is not in favor of granting an easement to the Town for a multi-use path from Seneca Road to River Road Park. He noted that he is in favor of keeping the existing footpath on Mr. Lucey's property.
 - Chairman Strayer noted that increasing pedestrian and multi-use path connectivity throughout Town is an initiative of the Comprehensive Plan and several councils and committees such as the Complete Streets Committee. He noted that easements for multi-use paths are regularly required for subdivisions. The multi-use path in the Kelts Farm subdivision and easements in recent subdivisions on Van Antwerp Road and Empire Drive were noted as examples. He stated keeping the walking connection private would cause problems in the future as any new homeowner could close it down at any time and limit it's use to only certain people. The benefit needed to be public and, for equity, needed to be available to everyone.

The Council asked if Mr. Lucey would agree to a legal agreement that precluded future development of the land in the southeastern corner of the property (along Seneca Rd.). A conservation easement was mentioned. Mr. Roman stated that he would need to speak with Mr. Lucey's attorney before he could comment further. Several Council members explained the Town's commitment and their commitment to preserving open space. Ms. Robertson noted that several Department Heads within the Town have reviewed this and have commented that having the Town own the land, rather than simply have an easement, is preferrable. She noted that if this path were to be pursued the land would actually need to be delineated as a 4th lot within the subdivision that would be deeded over to the Town Mr. Roman agreed to schedule a meeting during the week of 1/8/24 so that the involved parties could discuss this in more legal detail.

The CAC then proceeded to review and complete the EAF form and make a conditional SEQR recommendation to the lead agency (Planning Board).

The CAC findings are attached. They found significant negative effects to the environment, including inconsistency with the 2013 Comprehensive Plan and lack of connectivity to parks and neighborhoods in the subdivision, could be mitigated by adding a public access easement over the existing trail from the end of the Seneca Road cul-de-sac to the River Road park. Because no further studies are needed and the impacted can be mitigated with a public access easement, they made this into a conditional negative SEQR recommendation. They also found conservation of the undisturbed lands to be significantly important, as the drainage and wetlands in this area make this parcel extremely sensitive to development.

The Planning Board is lead agency. From the DEC's website, "A conditioned negative declaration (CND) is a form of negative declaration which may be used for Unlisted actions only, and only in

limited circumstances. Use of a CND can be appropriate when a lead agency concludes that a proposed action may have a potentially significant adverse impact on the environment, but the impact can be eliminated or adequately mitigated by conditions imposed by the lead agency, without the need for additional environmental studies. Use of the CND acknowledges that without imposition of conditions by the lead agency, the action may have potentially significant impacts." Typical conditions imposed under a Conditional SEQR determination as illustrated on the DEC website include:

- "Requiring addition of a turning lane and new traffic signal to mitigate traffic impacts
- Addition of a permanent vegetated buffer area along the stream bank to protect the riparian corridor along the waterway
- Requiring that all stonewalls located along public roads shall be maintained
- Requiring that a landscape berm shall be built between the public road and the parking lot to screen and buffer a new shopping plaza; and
- Requiring that the siting of the proposed parking lot shall be moved to from the eastern side to the western side of a proposed structure to avoid impacts to a wetland."

The Planning Department finds that requiring a public easement to make a critical connection between an isolated cul-de-sac and the adjacent parklands and neighborhoods falls within the types of examples provided by the DEC and recommends the Planning Board adopt a conditional SEQR determination to avoid negative impacts to existing land use plans and an existing walkway.

The proposed resolution is attached, with a conditional SEQR determination included.

RESOLUTION NO. 2024-01

AT A REGULAR MEETING OF THE PLANNING BOARD AND ZONING COMMISSION OF THE TOWN OF NISKAYUNA DULY CALLED AND HELD ON THE 8TH DAY OF JANUARY 2024 AT THE NISKAYUNA TOWN OFFICE BUILDING, ONE NISKAYUNA CIRCLE, IN SAID TOWN AT 7:00 P.M., THE FOLLOWING MEMBERS WERE PRESENT VIRTUALLY OR IN PERSON:

HONORABLE: KEVIN A. WALSH, CHAIRMAN GENGHIS KHAN MICHAEL A. SKREBUTENAS CHRIS LAFLAMME PATRICK MCPARTLON DAVID D'ARPINO LESLIE GOLD NANCY STRANG JOSEPH DRESCHER

One of the purposes of the meeting was to take action on a SEQR determination and call for a public hearing.

The meeting was duly called to order by the Chairman.

The following resolution was offered by _____, whom moved its adoption, and seconded by _____.

WHEREAS, Michael Dussault, P.E., agent for the property owner, Ryan Lucey, has made application to the Planning Board for a 3-Lot Minor Subdivision as shown on a 9- page drawing entitled "2890 River Road Minor Subdivision." by Engineering Ventures, P.C. dated 12/6/23 with no further revisions, and

WHEREAS, the zoning classification of the property is R-1: Low Density Residential, and

WHEREAS, this Planning Board and Zoning Commission has discussed the requirements of Chapter 189 of the Code of the Town of Niskayuna for street improvements, drainage, sewerage, water supply, fire protection and similar aspects, as well as the availability of existing services and other pertinent information, and

WHEREAS the Planning Board referred the Environmental Assessment Form to the Niskayuna Conservation Advisory Council (CAC) for their review and on November 8, 2023, the CAC recommended that a conditional negative declaration be prepared with recommendations for the Planning Board to consider, and

WHEREAS the Planning Board, acting in accordance with the State Environmental Quality Review (SEQR) regulations and local law, has contacted all involved agencies, and they have concurred with the Planning Board that it should assume the position of lead agency for this project, and

WHEREAS this Board has carefully reviewed the proposal and by this resolution does set forth its recommendation hereon,

NOW, THEREFORE, be it hereby

RESOLVED, that the Planning Board and Zoning Commission hereby determines that this project will not have a significant effect on the environment with the condition that the applicant provide a public access easement from the end of the Seneca Road cul-desac to the River Road Park (where the existing walk path currently exists) and conserve the remaining undisturbed lands of the subdivision through a conservation easement or deed to the Town of Niskayuna, and hereby directs the Town Planner to file a conditional negative SEQR declaration as noted above with the additional following comments from the CAC findings:

- 1. The Developer shall explore solar and EV ready options for the new homes as well as explore pesticide free options for lawn maintenance as the properties are directly adjacent to wetlands.
- 2. The Developer shall use native species wherever possible in their plantings plans.
- 3. Drainage is critical to the review of this subdivision, and the developer shall provide for ways to maintain the privately owned stormwater management practices in perpetuity.

, and be it hereby

FURTHER RESOLVED that this Planning Board does hereby call for a public hearing to be held on Monday, January 22, 2024 at 7:00 pm in the Niskayuna Town Hall, 1 Niskayuna Circle, to consider the application of Ryan Lucey for a 3-lot minor subdivision at 2890 River Rd. Niskayuna, NY.

Upon roll call the foregoing resolution was adopted by the following vote:

KEVIN A. WALSH, CHAIRMAN GENGHIS KHAN MICHAEL A. SKREBUTENAS CHRIS LAFLAMME PATRICK MCPARTLON DAVID D'ARPINO LESLIE GOLD

NANCY STRANG JOSEPH DRESCHER

The Chairman declared the same _____.

CAC SEQR FINDINGS EAF 2023-7 2890 River Road 1/3/2024

<u>Part 2:</u>

1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?

Yes. The 2013 Comprehensive Plan emphasizes connectivity between neighborhoods and parks. There is an existing walking trail between the Seneca Road cul-de-sac and River Road park, connecting residents in the area to the park and surrounding neighborhoods. As proposed, keeping the connection private allows it to be removed at any time and is therefore contradictory to the 2013 Comprehensive Plan. As this is the only available area to connect Seneca Road to River Road Park and the surrounding neighborhoods, the CAC found this is a moderate to large impact that can be mitigated by making the trail public by either deeding the land to the Town through the subdivision process or deeding a public access easement. The CAC also noted the 2013 Comprehensive Plan emphasizes preserving open space and stated the area in lot 4 that is proposed as a utility easement should also be preserved as open space.

2. Will the proposed action result in a change in the use or intensity of use of land?

Yes. The CAC consistently holds that subdivisions are an increase in the intensity of use of the land and noted again the requirement for a conservation easement on the undisturbed lands or a requirement that the undisturbed lands be deeded to the Town can mitigate this impact.

3. Will the proposed action impair the character or quality of the existing community?

This was noted as a no to small impact provided that the drainage plans, limits of clearing and street tree planting requirements were followed.

4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?

No. There is no CEA in the area.

5. Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure for mass transit, biking or walkway?

Yes. The CAC found there would be a moderate to large impact on the surrounding area should the subdivision proceed without the inclusion of a public easement for the walkway. Without a public easement the walkway connection could be lost in the future, or the people who were allowed to use it could be selectively allowed. Should the walking path be closed, residents would have to walk along River Road to get to the park entrance, a significant deterrent to pedestrians and a driver for additional vehicle trips in the neighborhood due to the small shoulders and high traffic volume on River Road. This impact can be mitigated by requiring a public access easement as part of the subdivision.

6. Will the proposed action cause an increase in the use of energy and/or does it fail to incorporate reasonably available energy conservation or renewable energy opportunities?

No or small impact. The CAC asked the applicant to explore making solar panels easy to be placed on the new homes and looking at making EV ready infrastructure in the garages.

7. Will the proposed action impact existing: (a) public / private water supplies?(b) public / private wastewater treatment utilities?

No to small impact.

8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?

No to small impact. The applicant supplied a no effect letter from SHPO and did a thorough analysis of the parcel for historic, archaeological and architectural resources. In addition, the Historic Preservation Committee reviewed the existing home that is proposed to be torn down and did not find any significant history associated with it and recommended allowing the demolition.

9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?

No to small impact. The CAC requested the developer commit to no use of pesticides, especially because the properties are so close to the wetlands. They also requested native species to be planted for all landscaping and requested the street tree planting plan be submitted ASAP. They also found that the drainage was critical to the review of the subdivision, and the drainage easement to the Town is important. They stated it is important to ensure no future homeowner fills in the private retention ponds and asked to look into how they can be maintained in perpetuity. They stated the drainage study, TDE review, and the letter from Highway and Engineering was critical to this finding. Lastly they stated that they have identified a wildlife corridor in this area so it is important that the open space be preserved to protect the wildlife

10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?

No to small impact. The CAC reiterated that found that the drainage was critical to the review of the subdivision, and the drainage easement to the Town is important. They stated it is important to ensure no future homeowner fills in the private retention ponds and asked to look into how they can be maintained in perpetuity. They stated the drainage study, TDE review, and the letter

from Highway and Engineering was critical to this finding of small impact and the hundred year storm modeling was important.

11. Will the proposed action create a hazard to environmental resources or human health?

No. The CAC did not identify any hazards to environmental resources or human health.

<u>Part 3:</u>

The Council discussed the negative impacts to the connectivity and open space goals of the 2013 Niskayuna Comprehensive Plan and the negative impacts to an existing walkway that result from a subdivision that does not include a connection to the adjacent parklands and neighborhoods. The CAC stated this can be mitigated by requiring a public access easement over the existing walkway.

The Council discussed the critical importance of open space in this area, as a wildlife corridor and because of the sensitively the parcel has to drainage and wetlands. They felt the undisturbed areas in the subdivision needed to be protected as open space in perpetuity and the drainage infrastructure on the private lots needed to be protected in perpetuity.

The Council recommended preparing the homes for solar and EV charging stations, requested no pesticide use on the lawns due to the proximity to the wetlands, and requested only native species be planted for the street trees.

Upon voting, the CAC voted unanimously to recommend a conditional negative declaration to the Planning Board, with the condition that a public access easement be required between the end of the Seneca Road cul-de-sac to River Road park, where the existing walkpath has already been constructed, and that the undisturbed areas of the subdivision be preserved in a conservation easement or be deeded to the Town.

Short Environmental Assessment Form Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information

Name of Action or Project:

2890 River Road Subdivision

Project Location (describe, and attach a location map):

2890 River Rd, Niskayuna, New York 12309

Brief Description of Proposed Action:

The Applicant proposes a 4-lot subdivision of Town of Niskayuna tax parcels 51.-1-7.1 and 51.9-2-1.1. Each new lot will have a single family residence per lot. The proposed dwellings will be serviced by public water and sanitary sewer systems.

Name of Applicant or Sponsor:	Telephone: 518-374-1461		
RPL Family Trust	E-Mail: ryan@midstateltd	.com	
Address:			
2505 Whamer Lane			
City/PO: Niskayuna	State: NY	Zip Code: 12309	
1. Does the proposed action only involve the legislative adoption of a plan, local administrative rule, or regulation?	law, ordinance,	NO	YES
If Yes, attach a narrative description of the intent of the proposed action and the en- may be affected in the municipality and proceed to Part 2. If no, continue to questi	vironmental resources the on 2.	at 🖌	
2. Does the proposed action require a permit, approval or funding from any other If Ves list agency(s) name and permit or approval: US ACOE Nationwide Bermit #20 for	government Agency?	NO	YES
wetlands.	or disturbance to treshwater		\checkmark
 a. Total acreage of the site of the proposed action? b. Total acreage to be physically disturbed? c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 	6. CH acres 2.00 acres 6.09 acres		
 4. Check all land uses that occur on, are adjoining or near the proposed action: 5. Urban Rural (non-agriculture) Industrial Commercial Forest Agriculture Aquatic Other(Speci Parkland 	V Residential (subur	ban)	

5. Is the proposed action,	NO	YES	N/A
a. A permitted use under the zoning regulations?		<	
b. Consistent with the adopted comprehensive plan?		<	
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?		NO	YES
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?		NO	YES
If Yes, identify:		<	
		NO	YES
8. a. Will the proposed action result in a substantial increase in traffic above present levels?			
b. Are public transportation services available at or near the site of the proposed action?			
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?			
9. Does the proposed action meet or exceed the state energy code requirements?		NO	YES
If the proposed action will exceed requirements, describe design features and technologies:			
10. Will the proposed action connect to an existing public/private water supply?		NO	YES
If No, describe method for providing potable water:			
11. Will the proposed action connect to existing wastewater utilities?		NO	YES
If No, describe method for providing wastewater treatment:			1
ender i mit belandebandebande die der besonde 🖉 derekteren hen aus bezienen. Im die Communitieren die Sondebandebandebandebandebandebandebandeba			
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the	t	NO	YES
Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	ľ		
	57		
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	1744		
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?		NO	YES
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?			
If Vest identify the wetland or waterbody and extent of alterations in square fact or across			
The proposed action does not plan to exceed 0.1 acre of freshwater wetland disturbance.			
			-

14. Identify the typical helpitet types that ecour on one an likely to be found on the project site. Check all that evolution			
14. Identify the typical habitat types that occur on, of are fikely to be found on the project site. Check all that apply:			
Shoreline 🖌 Forest 🗋 Agricultural/grasslands 🗋 Early mid-successional			
✓ Wetland Urban ✓ Suburban			
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or	NO	YES	
Federal government as threatened or endangered?			
16. Is the project site located in the 100-year flood plan?	NO	YES	
	 Image: A start of the start of		
17. Will the proposed action create storm water discharge, either from point or non-point sources?	NO	YES	
If Yes,		<	
a. Will storm water discharges flow to adjacent properties?	<		
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?		1	
Site storm water will be directed through roadside ditches and pipe conveyance systems to public storm sewer.			
	5	Mart	
18. Does the proposed action include construction or other activities that would result in the impoundment of water	NO	YES	
or other liquids (e.g., retention pond, waste lagoon, dam)?			
In res, explain the pulpose and size of the impoundment			
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste	NO	YES	
management facility?			
If Yes, describe:			
20 Has the site of the proposed action or on adjoining property been the subject of remediation (engains or	NO	VEG	
completed) for hazardous waste?	NO	YES	
If Yes, describe:			
	✓		
I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BE MY KNOWLEDGE	ST OF		
Applicant/sponsor/name: The parting fust - right Lucy Date: 6/22/2023			
Signature: The TRUSTER			



Part 1 / Question 16 [100 Year Flood Plain] No

Part 1 / Question 20 [Remediation Site] No



TOWN OF NISKAYUNA PLANNING BOARD AND ZONING COMMISSION

AGENDA STATEMENT

AGENDA ITEM NO. VII. 2

MEETING DATE: 1/8/2024

ITEM TITLE: RESOLUTION: 2024 - 02: An Amendment to Resolution 2023-26 for exterior façade renovations including new signage at 3631 State St.

PROJECT LEAD: TBD

APPLICANT: Michael Roman

SUBMITTED BY: Michael Roman

REVIEWED BY:

□ Conservation Advisory Council (CAC) □ Zoning Board of Appeals (ZBA) □ Town Board □ OTHER:

ATTACHMENTS:

Resolution Site Plan 🗌 Map 🗌 Report 🗌 Other:

SUMMARY STATEMENT:

Mr. Roman submitted an application for façade and signage changes to rebrand the site as a Ford Pro Elite service facility. The building is currently a Quick Lane automobile service center.

In his application Mr. Roman describes the scope of the project as follows: "Renovation to existing one-story building which will include a new exterior façade. All work will be within the existing building footprint. Existing pylon sign to be converted to Ford Pro Elite sign, existing overall size to remain."

The application was reviewed at the 10/16/23 meeting and the Board called for a tentative resolution for the 11/13/23 meeting.

COMPREHENSIVE PLAN

The proposed application complies with the Economic Development section, beginning on page 73, of the 2013 Niskayuna Comprehensive Plan.

BACKGROUND INFORMATION

The property is located in the C-H Commercial Highway zoning district. Automobile sales and service establishments, general automotive repair facilities, gasoline services stations and automobile laundries are special principal uses in the district.

The following drawings were provided with the application.

1. A 2-page set of elevation drawings entitled "Ford PRO Metro Ford" by Eview360" dated 5/25/23 with no subsequent revisions.

- 2. A 1-page drawing entitled "Building Elevations Metro Ford" by C2 Architecture, PC dated 9/22/23 with no subsequent revisions.
- 3. A 1-page slide of photographs showing the current signage entitled "Metro Ford Elite Commercial Services Existing Photos" by C2 Architecture, PC dated 10/5/23 with no subsequent revisions.

Existing variances

Date	Zoning Code Section	Description	Code	Variance	Total
Granted	_		Requirement		Approved
9/18/13	220-13, Sch I-E, Col 4	Maximum % coverage by	30%	17.9%	47.9%
		buildings and			
		structures			
9/18/13	220-13, Sch I-E, Col 8	there shall be a	25%	7.2%	17.8%
		minimum of 25% of the			
		total land area reserved as			
		landscaped open space			

Previously approved façade signage

The following 4 signs were previously approved for the south façade (fronting State St.)

Sign No.	Name	Area (sq. ft.)
1	Hand Symbol	16.8
2	Quick Lane	29.1
3	Tire & Auto Center	3.9
4	Hours of Operation	15.0
Total		64.8

The 4 façade signs listed above were approved "as-is", in that they were approved based on the size, color, design and location of each of the 4 signs as documented in the site plan drawings. The approval of the 4 façade signs is *NOT* a blanket approval for 4 signs of any size, color, design and location.

Proposed new signage

Article VIIIA Town Center Overlay District, Neighborhood Commercial, Highway Commercial Standards, Section 220-48.4 Signs E (9) Number of signs states: "A maximum of one façade sign per use is permitted, except that a use fronting on two streets may have one sign for each building front..."

Schedule I-D Column 7 Permitted Signs for the C-N zoning district states the following: "For all uses: For each linear foot of building frontage 1 square foot of sign area shall be permitted...Under no circumstances shall any 1 sign exceed 50 square feet.

Schedule I-E Column 7 Permitted Signs for the C-H zoning district states the following: "All uses: Same as C-N District regulations plus 1 freestanding sign limited in area to 1 sq. ft. for each linear

foot of building, up to a maximum of 80 square feet. The uppermost part of such sign shall not be higher than 25 feet in height above the average grade at its location."

Section 220-48.6 Application Procedures C Modifications and Waivers states the following: "The Planning Board may waive one or more of the specific requirements of this article upon a showing by the applicant that the regulation imposes an undue hardship due to such factors as existing conditions, site topography or site configuration. The Planning Board shall approve the minimum waiver necessary to allow the application to be approved. The applicant for any such waiver shall have the burden of showing that the proposed project with such waiver shall have a minimum negative effect on aesthetics and compatibility with neighborhood character."

Façade signs

The application proposes 4 new signs on the south façade of the building. There is no signage proposed for the other 3 facades of the building. Note: The building has approximately 376 ft. of combined frontage on State St. and Central Ave.

Circo Ma	Nama Drangad	A	Name Dravievaly Ammrayad	A ==== (===	Increase
Sign ivo.	Name - Proposed	Area (sq.	Name – Previously Approved	Area (sq.	Increase
		ft.)		ft.)	(sq. ft.)
1	Elite Commercial Service	84.0	Hand Symbol	16.8	
2	Metro Ford	9.3	Quick Lane	29.1	
3	Ford logo	35.1	Tire & Auto Center	3.9	
4	PRO	14.0	Hours of Operation	15.0	
Total		142.4		64.8	77.6

As proposed, the following waivers are required.

- 1. A waiver for 3 additional façade signs of the sizes and designs listed above on the south (State St.) façade is required.
- 2. A waiver of 34 sq. ft. (84 50 = 34) of sign area is required for Sign 1 Elite Commercial Service since it exceeds the 50 sq. ft. limit for an individual sign.

Freestanding sign

Proposed new monument sign

A code compliant freestanding sign measuring 65.8 sq. ft. in area and 9 ft. in height is proposed.

Planning Office recommendation

In an attempt to identify the "minimum waiver necessary" as required in Section 220-48.6, above, the Planning Office evaluated combining signs 3 & 4, the Ford logo & "PRO" signs, respectively. This would reduce the number of façade signs from 4 to 3. However, as currently designed this results in a sign that exceeds the 50 sq. ft. maximum limit for a single sign as required per Schedule I-D Column 7, above. The Planning Office recommends granting the waivers listed above to approve the design as-is.

<u>10/16/23 Planning Board (PB) meeting</u> – Mr. Roman attended the meeting and presented the application to the Board. The Board discussed the waivers and they were appropriate for the building and commercial corridor, as outlined above. They called for a resolution for site plan approval for the 11/13/23 meeting, pending the information about the hours of operation.

<u>11/13/23 Planning Board (PB) meeting</u> – The PB approved Resolution 2023-26 thereby granting the proposed façade changes and signage waivers.

Following the November Planning Board meeting, the applicant filed an Application for Site Plan Approval to amend the original site plan application. The amended application proposes to reduce the size of three of the façade signs and increase the size of one of the signs as noted in the table below.

Sign No.	Name - Proposed	Area (sq. ft.) PB Resolution 2023-26	Area (sq. ft.) Amended
1	Elite Commercial Service	84.0	67.6
2	Metro	9.3	5.1
3	Ford logo	35.1	40.0
4	PRO	14.0	12.2
Total		142.4	124.9

As proposed in the amended application, the following waivers are required.

- 1. A waiver for 3 additional façade signs of the sizes and designs listed above on the south (State St.) façade is required.
- 2. A waiver of 17.6 sq. ft. (67.6 50 = 17.6) of sign area is required for Sign 1 Elite Commercial Service since it exceeds the 50 sq. ft. limit for an individual sign.

A tentative resolution to amend Resolution 2023-26 for site plan approval is included in the meeting packet.

RESOLUTION NO. 2024 – 02

AT A REGULAR MEETING OF THE PLANNING BOARD AND ZONING COMMISSION OF THE TOWN OF NISKAYUNA DULY CALLED AND HELD ON THE 8TH DAY OF JANUARY 2024 AT THE NISKAYUNA TOWN OFFICE BUILDING, ONE NISKAYUNA CIRCLE, IN SAID TOWN AT 7:00 P.M., THE FOLLOWING MEMBERS WERE PRESENT VIRTUALLY OR IN PERSON:

HONORABLE: KEVIN A. WALSH, CHAIRMAN GENGHIS KHAN MICHAEL A. SKREBUTENAS CHRIS LAFLAMME PATRICK MCPARTLON DAVID D'ARPINO LESLIE GOLD NANCY STRANG JOSEPH DRESCHER

One of the purposes of the meeting was to amend Resolution 2023-26 to take action on a resolution for site plan approval.

The meeting was duly called to order by the Chairman.

The following resolution was offered by _____, whom moved its adoption, and seconded by _____.

WHEREAS, Michael Roman, agent for the property owner, made an application to the Planning Board and Zoning Commission for façade and signage changes at 3631 State St. to rebrand the site as a Ford Pro Elite service facility, and

WHEREAS, the proposed changes were reviewed by the Planning Board and Zoning Commission and approved on 11/13/23 with PB Resolution 2023-26, and

WHEREAS, Kristen MacLeod, of AJ Signs and agent for the property owner, made an application to the Planning Board and Zoning Commission to amend PB Resolution 2023-26 for façade and signage changes at 3631 State St. to rebrand the site as a Ford Pro Elite service facility, and

WHEREAS, the amended application includes (3) three façade signs as described herein that are smaller in area than were approved in PB Resolution 2023-26 and (1) façade sign that is larger in area than was approved, and

WHEREAS, a 2-page drawing set entitled "Metro Ford PRO, Schenectady, NY" by AGI dated 10/03/2023 with no subsequent revisions was included with the amended application, and

WHEREAS, the property is located in the C-H Commercial Highway zoning district and includes approximately 376 linear feet of frontage on State St. and Central Ave., and

WHEREAS, automobile sales and service establishments, general automotive repair facilities, gasoline service stations and automobile laundries are special principal uses in the district, and

WHEREAS, the proposed application complies with the Economic Development section of the 2013 Niskayuna Comprehensive Plan, and

WHEREAS, Article VIIIA Town Center Overlay District, Neighborhood Commercial, Highway Commercial Standards, Section 220-48.4 Signs E (9) Number of signs states: "A maximum of one façade sign per use is permitted, except that a use fronting on two streets may have one sign for each building front…" As approved in PB Resolution 2023-26 and proposed in the amended application, the south (State St.) façade of the building would include 4 new façade signs ("Elite Commercial Service", "Metro", the "Ford" logo, the word "PRO"). PB Resolution 2023-26 approved a waiver for 3 additional signs of the sizes noted in the table below on the south (State St.) façade is required, and

Sign No.	Name - Proposed	Area (sq. ft.)	Area (sq. ft.)
		PB Resolution 2023-26	Amended
1	Elite Commercial Service	84.0	67.6
2	Metro	9.3	5.1
3	Ford logo	35.1	40.0
4	PRO	14.0	12.2
Total		142.4	124.9

WHEREAS, Schedule I-E C-H District Column 7 Permitted Signs states the following: "All uses: Same as C-N District regulations...", and

WHEREAS, Schedule I-D C-N District Column 7 Permitted Signs states the following: "For all uses: For each linear foot of building frontage 1 square foot of sign area shall be permitted...Under no circumstances shall any 1 sign exceed 50 square feet." As approved with PB Resolution 2023-26, Sign 1 "Elite Commercial Service" measures 84 sq. ft. and was granted a waiver of 34 sq. ft. (84 – 50 = 34) of sign area. As proposed in the amended application, Sign 1 requires a reduced waiver of 17.6 sq. ft. (67.6 – 50 = 17.6), and

WHEREAS, Schedule I-E Column 7 Permitted Signs for the C-H zoning district states the following: "All uses: Same as C-N District regulations plus 1 freestanding sign limited in area to 1 sq. ft. for each linear foot of building, up to a maximum of 80 square feet. The uppermost part of such sign shall not be higher than 25 feet in height above the average grade at its location." PB Resolution 2023-26 approved a code compliant freestanding sign measuring 65.8 sq. ft. in area and 9 ft. in height, and

WHEREAS, Section 220-48.6 Application Procedures C Modifications and Waivers states the following: "The Planning Board may waive one or more of the specific requirements of this article upon a showing by the applicant that the regulation imposes an undue hardship due to such factors as existing conditions, site topography or site configuration. The Planning Board shall approve the minimum waiver necessary to allow the application to be approved. The applicant for any such waiver shall have the burden of showing that the proposed project with such waiver shall have a minimum negative effect on aesthetics and compatibility with neighborhood character", and

WHEREAS, this Board has carefully reviewed the proposal and by this resolution does set forth its decision heron,

NOW, THEREFORE, be it hereby

RESOLVED, that the Planning Board and Zoning Commission has determined that the proposed revised sign waiver as described above would have a minimum negative effect on aesthetics and compatibility with neighborhood character, and be it

FURTHER RESOLVED, that the Planning Board and Zoning Commission does hereby grant said revised waiver to allow for the signage as described above, and be it

FURTHER RESOLVED, that the Planning Board and Zoning Commission finds the above referenced site plan meets the requirements of the Zoning Code and therefore, hereby approves this site plan.

Upon roll call the foregoing resolution was adopted by the following vote:

KEVIN A. WALSH, CHAIRMAN GENGHIS KHAN MICHAEL A. SKREBUTENAS CHRIS LAFLAMME PATRICK MCPARTLON DAVID D'ARPINO LESLIE GOLD NANCY STRANG JOSEPH DRESCHER

The Chairman declared the same ______.



TOWN OF NISKAYUNA

One Niskayuna Circle Niskayuna, New York 12309-4381

Phone: (518) 386-4530

Application for Site Plan Review

Ap	plicant	(Owner	or Agent):
----	----------------	--------	------------

Location:

Name _____AJ Signs______Numbe

Number & Street : 3631 State St

Address _____842 Saratoga Rd _____ Section-Block-Lot _60.19 - 2- 2

____Burnt Hills NY

Email Kristen@ajsigns.com

Telephone _(518)-399-9291_ Fax (518)688-0179 Zoning District

Proposal Description:

Allow for a 40 sq ft Ford Oval sign for Metro Ford Instead of the 35.1 sq ft oval

previously approved
Signature of applicant: Date: Date:
Signature of owner (if different from applicant);
sector la



F 31sf oval

JocuSign Envelope ID: 8A83FDF9-0B81-43E4-A761-4FC1115B09C4

AGI



This document is the sole property of AGI, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly forbidden. It is submitted under a confidential relationship, for a special purpose, and the recipient, by accepting this document assumes custody and agrees that this document will not be copied or reproduced in whole or in part, nor its contents revealed in any manner or to any person except for the purpose for which it was tendered, nor any special features peculiar to this design be incorporated in other projects.

APPLICATION #	ŧ.
---------------	----



TOWN OF NISKAYUNA APPLICATION FOR BUILDING AND ZONING PERMIT One Niskayuna Circle

Niskayuna, New York 12309 Phone 518-386-4522 Fax 518- 386-4592

APPLICATION IS HEREBY MADE to the Town of Niskayuna Building Department for the issuance of a building and zoning permit pursuant to the New York State Uniform Fire Prevention and Building Code for the construction of buildings, additions or alterations, or for the removal or demolition, as herein described. The Applicant or Owner agrees to comply with all applicable laws, ordinances, regulations and all conditions expressed on this application which are part of these requirements, and will also allow or arrange for all inspectors to enter the premises for inspections.

BUILDING SITE ADDRESS 3631 Stg	test							
DESCRIBE WORK APPLIED FOR Metro ProSign (12,1954) Metro ESTIMATED VALUE OF ALL WORK: (labor and n	Ford New. 0(5.0854) - naterials)	Elite Commercial Service sight 67.6 TOTAL \$Service sight 67.6						
Please submit three sets of plans with this application.								
APPLICANT AJ Signs		_DAY PHONE						
CHECK ONE: ✓ CONTRACTOR								
HOMEOWNER								
OTHER (explain)								
ADDRESS 842 Saratoga Rd								
CITY Burnt Hills	STATE NY	ZIP12027						
CONTRACTOR AJ Signs		DAY PHONE						
ADDRESS 842 Saratoga Rd								
CITY Burnt Hills	STATE NY	ZIP						

Note: All General Contractors must prove compliance with Section 57 of the Workers' Compensation Law and Section 220 Sub. 8 of the Disability Benefits Law by providing proof of insurance at the time of application.

Homeowners doing own work may sign a BP-1 waiver – found in the Building Department and require notarization.

PROPERTY OWNER Metro	Property Inc	DAY PHONE
ADDRESS (if different than above)	3401 State St	
CITY Schenectady	STATENU	ZIP_12304

PLEASE SIGN BACK

The applicant has reviewed and fully understands the requirements and conditions listed on this application. Article II, Section 75.5B of the Code of the Town of Niskayuna requires that where such application is made by a person other than the owner, it shall be accompanied by an affidavit of the owner or applicant that the proposed work is authorized by the owner and that the applicant is authorized to make such application.

Applicants who are the owners of the property DO NOT have to have this application notarized.

The unders	igned hereby swea	rs that the informa	tion provided on t	his application is true, o	correct and accurate.		
Sworn to m	he on this \underline{BY}_{d}	lay of Noven	nber, 202	23 /	/		
KRIS	TEN MACLEOD			Signature of Apr	olicant		
NOTARY PUB	LIC-STATE OF NEW	YORK		Signard of http:	Jioant		
No.	01M/6341/19			H	124 actual		
Qualified I	sion Fraires 0-09	024		Printed Name	iomas wheller		
1019 COMMING	ax .//(///		T Hinted Ivanie	Ilia la		
		/	1/13/23				
Notary Publi	c, State_oPNew Yor	k 🔪		Date			
		(FO	R OFFICE USE ONLY	BELOW)			
BUILDING	SITE ADDRESS						
KNOWN EASEMENTS: WATER SEWER				DRAINAGE	OTHER		
PERMIT FEE DUE \$BASED ON							
COMMENT	S						
ZONING D	DISTRICT	S	ECTION-BLOCK	-LOT			
REQUIRED	INSPECTIONS:						
1.	FOOTING FORM	S AND REINFORC	CING PRIOR TO PC	URING OF CONCRETE	Ξ		
2.	FOUNDATION LOCATION PROVIDED AND STONE DRIVEWAY BASE INSTALLED PRIOR TO FOUNDATION INSPECTION						
3.	FOUNDATION WALL AND DRAIN TILE INCLUDING LATERAL PRIOR TO BACKFILLING						
4.	FIREPLACE INSP	PECTION AT BOX	AND AT HALF ST	ACK			
5.	ROUGH PLUMBING						
6.	ROUGH ELECTRICAL						
7.	ROUGH FRAMING INSPECTION INCLUDING TRUSS CERTIFICATES AND ROUGH GRADING ESTABLISHED						
8.	INSULATION INCLUDING PROPER VENTILATION						
9.	FINAL PLUMBING						
10.	FINAL ELECTRICAL						
11.	FINAL BUILDING INSPECTION						
12.	FINAL GRADING AND SOIL EROSION CONTROL						
13.	. (ADDITIONAL INSPECTIONS)						
	, _						

APPROVED BY

DATE ____

JocuSign Envelope ID: 8A83FDF9-0B81-43E4-A761-4FC1115B09C4

FRONT ELEVATION

AGI



This document is the sole property of AGI, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly forbidden. It is submitted under a confidential relationship, for a special purpose, and the recipient, by accepting this document assumes custody and agrees that this document will not be copied or reproduced in whole or in part, nor its contents revealed in any manner or to any person except for the purpose for which it was tendered, nor any special features peculiar to this design be incorporated in other projects.










TOWN OF NISKAYUNA PLANNING BOARD AND ZONING COMMISSION

ANNING BOARD AND ZONING COMMISSIO

AGENDA STATEMENT

AGENDA ITEM NO. VIII. 1

MEETING DATE: 1/8/2024

ITEM TITLE: DISCUSSION: An application for a 3-lot minor subdivision at 2890 River Rd.

PROJECT LEAD: Patrick McPartlon and Genghis Khan

APPLICANT: Michael Dussault, P.E., agent for the owner

SUBMITTED BY: Laura Robertson, Town Planner

REVIEWED BY:

Conservation Advisory Council (CAC)
Zoning Board of Appeals (ZBA)
Town Board
OTHER:

ATTACHMENTS:

Resolution Site Plan Map Report Other:

SUMMARY STATEMENT:

Michael Dussault, P.E., of Engineering Ventures, P.C. and agent for Ryan Lucey, property owner, has made an application for Sketch Plan Approval – 4-Lots or Less for a 4-lot subdivision at 2890 River Rd. The proposed subdivision will divide the existing 5.26 Acre property at 2890 River Rd and the 0.83 Acre property contiguous to it along Seneca Rd into 4 lots of 0.46, 0.46, 2.64 and 2.53 Acres, respectively. The existing home at 2890 River Rd is in very poor condition and will be demolished.

The property is located within the R-1 Low Density Residential zoning district.

The Town Designated Engineer (TDE) provided a 2nd comment letter in response to the most recent site plan design (dated 12/8/23). A few action items remain and are included in the Agenda Statement, below. The Conservation Advisory Council met on 1/3/24 and made a recommendation to the lead agency (Planning Board) for a conditional negative SEQR declaration as described below. A resolution for such a conditional SEQR declaration and a call for a public hearing for the 3-lot minor subdivision is included in the meeting packet.

BACKGROUND INFORMATION

The property owner, Ryan Lucey, met with Department Heads of the Niskayuna Planning, Water, Sewer & Engineering and Highway Departments to discuss a proposed 4-lot subdivision as shown in the drawing entitled "Subdivision Plan 2890 River Rd." by Engineering Ventures, P.C. dated 6/23/23 with no subsequent revisions. At the time Mr. Lucey owned the 5.26 Acre property at 2890 River Road and was in the process of purchasing the 0.83 Acre property contiguous to it along Seneca Rd. The utility review performed by the Town representatives identified the project area as being susceptible to flooding during heavy rain events. It was noted that a thorough storm water review will be required. Mr. Lucey was informed that for his proposed subdivision to come before the Planning Board he would need to demonstrate site control by obtaining signature approval of the application from the current owner of the 0.83 Acre portion of land or wait until the sale of the land to him was completed.

On 8/23/23 Mr. Lucey provided with Planning Office with the following documents.

- A sketch plan application for a minor subdivision of 4-lots or less
- A "Contract For Purchase and Sale of Real Estate" dated 8/16/23 indicating that Mr. Lucey owned the 0.83 Acre parcel of land.
- A 1-page survey drawing entitled "Survey Lands of RPL Family Trust #2890 River Rd." by Gilbert VanGuilder Land Surveyor, PLLC dated 12/1/2022 with no subsequent revisions.
- A 1-page subdivision site plan entitled "Subdivision Plan Proposed 4-Lot 2890 River Rd." by Engineering Ventures P.C." dated 8/23/23 with no subsequent revisions.
- A Short Environmental Assessment Form (EAF) Part 1 dated 6/22/23.

6/23/23 Subdivision Drawing

This drawing includes 4 lots. Two (2) of the lots front River Road, one (1) lot fronts Seneca Road near its intersection with River Road and one (1) lot fronts Seneca Road near the cul-de-sac at the northeast end of the road.

8/23/23 Subdivision Drawing

This drawing includes 4 lots. Three (3) of the lots front River Road, the one (1) lot near the intersection of Seneca Rd and River Rd has been eliminated and the one (1) lot that fronts Seneca Rd. near the cul-de-sac at the northeast end of the road remains.

Mr. Lucey and his representatives are before the Board this evening to present and discuss his application. The Planning Board and Planning Office should review the application relative to Town codes and the current storm water conditions along Seneca Rd.

<u>8/28/23 Planning Board (PB) meeting</u> – Ryan Lucey and Michael Roman attended the meeting and presented the project to the Board. They explained the 6/23/23 4-lot subdivision drawing included two lots on Seneca Rd and two lots on River Rd. The 8/23/23 drawing includes one lot on Seneca Rd and 3 lots on River Rd. The Board and Planning Office discussed the history of storm water accumulation during storms in this general area and stated a through upstream and downstream storm water analysis will be needed. Mr. Khan stated that in other areas of Niskayuna the Board has essentially inherited storm water challenges – in this area, and on this project, they have the opportunity to avoid storm water related issues. The Board noted that the small strip of property along Seneca Rd near the intersection with River Rd may be able to be used to help mitigate storm water events. The Board concluded their discussion with a request that a few additional items be added to the site plan: the addition of limits of clearing and footprints of homes that are representative of the size the applicant intends to build.

<u>9/6/23 PB Project Lead site walk</u> – The PB project leads and Mr. Lucey walked the project site to obtain a first-hand look at the land, wetlands, grading, neighboring properties, etc.

<u>9/6/23 Conservation Advisory Council (CAC) meeting</u> – The CAC briefly reviewed the project at their regularly scheduled meeting. Ms. Robertson presented the site plan and provided background regarding the storm water challenges in the area. She asked the Board to familiarize themselves with the project details and the project site. She suggested they drive by the area to get a first-hand feel for the distances between houses, storm water drainage areas, etc. Chairman

Strayer noted that he would like to see a multi-use path be included in the plan connecting Seneca Rd to River Road Park. He also noted that a Town access easement along River Road along the project area would be helpful for the installation of a future sidewalk or multi-use path someday. Ms. Robertson said the CAC will be reviewing this again during the October 4, 2023 meeting.

<u>9/11/23 Planning Board (PB) meeting</u> – Mr. Roman and Mr. Lucey attended the meeting. The coproject leads, Patrick McPartlon and Genghis Khan updated the Board on their observations during the 9/6/23 site walk. They noted the upland properties, Iroquois and Rosendale schools, Campo Court, etc., and observed that water generally flows towards the existing culvert under Seneca Road and into the wetland area of 2890 River Road. Ms. Robertson noted that Niskayuna Zoning Code includes sections requiring the examination of upstream and downstream drainage when conducting a Stormwater Management Report. The discussion primarily focused on drainage and how to efficiently assess the existing condition and post-development condition. Ms. Robertson recommended that existing stormwater reports for the neighboring sites be reviewed by Mr. Lucey's engineer. Mr. McPartlon encouraged the Board members to visit the site and acquaint themselves with the grading, vegetation, etc. Ms. Finan noted that Mr. Lucey still needs to demonstrate full site control of the thin strip of land along Seneca Road via. either signed approval of the current land owner or evidence that he is the landowner. Ms. Robertson noted that the Planning Office is in the process of securing quotes for a TDE review of the project.

A summary of actions that have occurred since the 9/11/23 meeting is as follows.

- Mr. Lucey submitted a FOIL request and received the Stormwater Management Report for the Iroquois Middle School project that is currently underway.
- The Planning Office has received 2 quotes for a TDE review of the proposed project.
 One additional quotation is expected.
- The Planning Office has located the Storm Water Management Report for the Campo Court 7lot major subdivision that is upstream from the proposed action.
 - Stormwater reports for other upstream areas are in the process of being located
- At the request of Mr. Lucey, a site walk with the Engineering and Highway Departments is planned for Thursday 10/5/23.

<u>10/2/23 Planning Board (PB) meeting</u> – Mr. Lucey and Mr. Roman attended the PB meeting. Chairman Walsh asked Mr. McPartlon, co-project lead of the project for the Planning Board, to provide a quick update since the last meeting. He stated that a Town Designated Engineer (TDE) was in the process of being selected and a site walk was being planned to familiarize everyone with the property. Mr. Roman added that the applicant's engineer was preparing a storm water management report.

<u>10/4/23 Conservation Advisory Council (CAC) meeting</u> – Laura Robertson, Town Planner, provided the CAC with background information on the proposed project. She described the slides and pictures that have been assembled documenting recent storm water related events in the area recently. A CAC member stressed that we need to make sure we are planning for the future and heeding storm water trends, etc. The CAC requested that the site plan drawings include representative footprints of the homes that are intended for the lots rather than small generic squares or rectangles. They also requested an inventory of animals that inhabit the area that may be impacted by the development of the land.

<u>10/5/23 Site walk</u> – A site walk was held at noon on 10/5/23. Participant's included Ms. Robertson, Town Planner, & Mr. Henry of the Planning Office, Mr. Doug Cole, the TDE from Prime Engineering, Mr. Yetto Superintendent of Water, Sewer and Engineering, Mr. Smith Superintendent of the Highway Department, Mr. McPartlon and Mr. Khan of the Planning Board, Mr. Lucey and his team including his engineer and a few interested neighbors. The Planning Office explained the roles and responsibilities of each member of the project team and stressed the importance of how important communication between the applicant's engineer and the TDE will be to the success of the project. The group walked the upstream areas and discussed how storm water is managed and drains on the property. Prior to concluding the site walk meeting the group noted that the next step is for the applicant's engineer to complete and submit a storm water management report.

<u>10/16/23 Planning Board (PB) meeting</u> – Mr. Lucey and his design team were present at the meeting. Collectively, Mr. McPartlon, PB Project Co-Lead with Mr. Khan, Mr. Roman and Mr. Dussault, P.E. provided the Board with an update on the project.

- Mr. Roman noted that Mr. Lucey had closed on the purchase of the lot of land forming a thin strip along Seneca Rd.
- Mr. Dussault provided an update on the onsite and offsite stormwater analysis
 - He noted that he agreed with the analysis performed on the Iroquois Middle School
 - The upstream analysis was performed using the 25-year storm rainfall rates
 - His downstream analysis was performed using the 5-year storm rainfall rates
 - o The analysis showed that the existing culverts under Seneca Rd. are undersized
 - With the assumptions noted in the report, the onsite stormwater discharge is essentially the same post-project as pre-project
- The Planning Board and Planning Office discussed how to best review and provide appropriate feedback to the applicant on the project at this stage (sketch plan stage) of the project.
- It was determined that TDE comments regarding the stormwater analysis and site plan would be valuable to help the applicant and the Board quantify potential challenges inherent in the site.
- The Board noted that a TDE had been selected and would begin the technical review as soon as an escrow account was set up.

The following activities and revisions to the site plan occurred since the 10/16/23 PB meeting.

- 10/27/23 An escrow account was established and the TDE was immediately engaged.
- 11/6/23 A revised site plan drawing was received (dated 11/3/23) consisting of 3-lots and is included in the packet for the 11/13 23 PB meeting.
- 11/8/23 A 1st TDE comment letter was received by the Planning Office and is included in the packet for the 11/13/23 PB meeting.

<u>11/8/23 Conservation Advisory Council (CAC) meeting</u> – The Planning Office provided a general review of the history and status of the project and noted receipt of the 1st TDE comment letter and revised 3-lot subdivision site plan. Ms. Robertson noted that the CAC will be reviewing the project in more detail as the review process moves forward.

<u>11/13/23 Planning Board (PB) meeting</u> – Mr. Roman, agent for Mr. Lucey, and Mr. Dussault, of Engineering Ventures, attended the meeting and represented Mr. Lucey. They referenced the revised site plan drawings dated 11/3/23 which now depict a 3-lot subdivision. Mr. Cole, of Prime Engineering and TDE for the project, summarized his TDE response letter dated 11/8/23. A detailed discussion of the project ensued and the group agreed on the following.

- Site control for the application was established on 11/2/23 when Mr. Lucey's ownership of Tax Parcel 51.9-2-1.2, the lot of land along Seneca Rd. near the intersection of River Rd., was recorded in the Schenectady County Clerk's Office.
- Proposed design reduced from 4-lot subdivision to 3-lot subdivision.
- The new lots will include on-lot stormwater management practices (retention basins, etc.) such that the post development runoff will be equal to or less than the pre development runoff.
- Design includes an 80' wide easement to the Town that encompasses the ditch in the wetlands
- Stormwater report will have to be revised to reflect the 3-lot design.
- Stormwater analysis will be performed using 100 yr. rainfall rates.
- Mr. Lucey and the Town will explore a conservation easement, extending the 80' easement or deeding the land along Seneca Rd. near River Rd. to the Town to enable the land to be used as a stormwater management basin.
- Mr. Dussault will provide written responses to the TDE letter dated 11/8/23.
- The Town will include upstream and downstream analysis and culvert design in their town-wide drainage analysis project.

<u>11/27/23 Planning Board (PB) meeting</u> – The applicant and the Planning Board Project Leads provided the Board with an overview and update of the project. After a short discussion the PB approved Resolution 2023-28 granting sketch plan approval to the proposed 3-lot subdivision.

Since the 11/27/23 PB meeting the applicant has provided the following documents to the Planning Office.

- <u>11/28/23</u> A 21-page report entitled "Endangered Species Habitat Suitability Assessment Report" by Gilbert VanGuilder Land Surveyor, PLLC dated 9/22/23.
- <u>11/28/23</u> A 19-page report entitled "Phase 1 Archaeological Survey 2890 River Rd. Town of Niskayuna Schenectady County 23PR05721 by Timothy J. Abel, PhD 33512 SR 26 Carthage, NY 13619 dated 11/21/23.
- <u>12/5/23</u> A 1-page letter entitled "USACE 2890 River Road Subdivision and Three New Single-effecFamily Homes, 2890 River Rd, Niskayuna, NY 12309, 23PR05721 by Jessica Schreyer, Archaeology Unit Program Coordinator, of the New York State Parks, Recreation and Historic Preservation Department dated 12/4/23.

<u>12/6/23 Conservation Advisory Council (CAC) meeting</u> – The applicant and his engineer attended the meeting and updated the CAC on the proposed project. They noted that they are designing stormwater retention areas for each of the lots to control the post-development stormwater discharge to pre-development levels. They also noted that the basement elevation of the home on lot 2 will be 1' above the 100-year flood elevation. After a discussion the Council chose to table making a SEQR recommendation until they can review updated site plans that were discussed.

<u>12/8/2023 Complete Streets Committee Meeting -</u> The Complete Streets Committee reviewed the most recent revision to the subdivision drawings and expressed their support and recommendation to the Planning Board for a public access easement between Seneca Road and River Road Park along the existing trail connection and a public access easement along River Road for a potential future multi-use path.

<u>12/11/23 Planning Board (PB) meeting</u> – Mr. Ryan and his design team were present at the meeting. They described the revised plans and documents that were emailed to the Planning Office on Friday afternoon 12/8/23 (the plans were received too late to be included in the

documentation packet for the 12/11/23 PB meeting so they were emailed separately to the PB members). Chairman Walsh noted the documents will be included in the meeting packet for the 1/8/24 PB meeting. It was noted that the CAC did not make a SEQR recommendation at their 12/6/23 meeting. LR explained that the applicant described design revisions that were underway on 12/6/23 but no documentation of the revised design was provided to the CAC at the meeting. Therefore, the CAC decided to table making a SEQR recommendation until they received and reviewed the revised documents. After a general discussion the PB called for a tentative resolution for the 1/8/24 PB meeting to make a SEQR determination based upon proposed CAC action on January 3rd and call for a public hearing for the 1/22/24 meeting.

12/28/23 – 2nd TDE comment letter -- The TDE provided a 5-page comment letter regarding the following documents.

- The applicant's response letter dated 12/6/23
- Revised site plans dated 12/6/23
- Updated SWPPP dated 12/6/23
- Subdivision application dated 12/4/23
- Revised Short Form EAF dated 6/22/23

Noteworthy comments in the 2nd TDE comment letter include but are not limited to the following.

- Site Plan
 - Some of the large paved driveway/parking area on Lot 3 appears to shed water to the West, however, this new impervious area should be directed to the proposed bioretention area.
 - 7. We ask that the driveway culverts for all 3 lots be sized to convey the 100-year
 24-hour storm event and include velocity dissipation features at the outlets.
 - 8. The [lot 2] basement floor elevation is stated to be approximately 291.40, which is essentially at proposed grade at the rear of the home and would still be about 12" above the anticipated water level in the wetland during the 100-year storm event. The analysis was performed under the conservative assumption that the culvert crossing at Seneca Road and the wetlands adequately convey flows to the inlet of the River Road culvert (control point). The Applicant also states that the new homes will be constructed with waterproofing techniques and sump pump back up. We find this to be acceptable and it can be confirmed through Town building permit inspection during construction.
 - 12. The Town multi-use path easement needs to be shown on lot 3. The Town will also require the applicant to prepare and show on the plan a utility easement between the Seneca Road right-of-way and the Town Park property for potential future utility installation.
 - 13. The Town would like to see a Street Planting Plan as part of the next drawing set revisions. The code states that the trees shall have a minimum of 2.5" caliper at 5 feet above grade and be planted parallel to the street with a minimum of 2 trees per lot or one tree every 60 feet of road frontage.
- SWPPP
 - In Section IX.C. Maintenance, Inspections and Record Keeping, Permanent E&SC Practices and Post Construction Features, "Infiltration Basins" is mentioned, however, no infiltration basins are proposed. The applicant should remove and replace with a section describing "Bioretention" practice requirements, as well as add a section for "Vegetated Swale" for the frontage area along Lot 3.

<u>1/3/24 Conservation Advisory Council (CAC) meeting</u> – Michael Roman and Michael Dussault attended the meeting on behalf of the applicant, Ryan Lucey. Chairman Strayer provided a short update on the project and Mr. Roman provided additional detail on a number of topics including the following.

- The number of proposed lots have been lowered from 4 to 3
- The Army Corps of Engineers permit regarding wetland disturbance is pending and they expect to receive approval very soon.
- Mr. Lucey agreed to provide the Town with a drainage easement allowing them to access a large portion of the southeastern portion of the property extending all the way to Seneca Road.
- Mr. Lucey is not in favor of granting an easement to the Town for a multi-use path from Seneca Road to River Road Park. He noted that he is in favor of keeping the existing footpath on Mr. Lucey's property.
 - Chairman Strayer noted that increasing pedestrian and multi-use path connectivity throughout Town is an initiative of the Comprehensive Plan and several councils and committees such as the Complete Streets Committee. He noted that easements for multi-use paths are regularly required for subdivisions. The multi-use path in the Kelts Farm subdivision and easements in recent subdivisions on Van Antwerp Road and Empire Drive were noted as examples. He stated keeping the walking connection private would cause problems in the future as any new homeowner could close it down at any time and limit it's use to only certain people. The benefit needed to be public and, for equity, needed to be available to everyone.

The Council asked if Mr. Lucey would agree to a legal agreement that precluded future development of the land in the southeastern corner of the property (along Seneca Rd.). A conservation easement was mentioned. Mr. Roman stated that he would need to speak with Mr. Lucey's attorney before he could comment further. Several Council members explained the Town's commitment and their commitment to preserving open space. Ms. Robertson noted that several Department Heads within the Town have reviewed this and have commented that having the Town own the land, rather than simply have an easement, is preferrable. She noted that if this path were to be pursued the land would actually need to be delineated as a 4th lot within the subdivision that would be deeded over to the Town Mr. Roman agreed to schedule a meeting during the week of 1/8/24 so that the involved parties could discuss this in more legal detail.

The CAC then proceeded to review and complete the EAF form and make a conditional SEQR recommendation to the lead agency (Planning Board).

The CAC findings are attached. They found significant negative effects to the environment, including inconsistency with the 2013 Comprehensive Plan and lack of connectivity to parks and neighborhoods in the subdivision, could be mitigated by adding a public access easement over the existing trail from the end of the Seneca Road cul-de-sac to the River Road park. Because no further studies are needed and the impacted can be mitigated with a public access easement, they made this into a conditional negative SEQR recommendation. They also found conservation of the undisturbed lands to be significantly important, as the drainage and wetlands in this area make this parcel extremely sensitive to development.

The Planning Board is lead agency. From the DEC's website, "A conditioned negative declaration (CND) is a form of negative declaration which may be used for Unlisted actions only, and only in

limited circumstances. Use of a CND can be appropriate when a lead agency concludes that a proposed action may have a potentially significant adverse impact on the environment, but the impact can be eliminated or adequately mitigated by conditions imposed by the lead agency, without the need for additional environmental studies. Use of the CND acknowledges that without imposition of conditions by the lead agency, the action may have potentially significant impacts." Typical conditions imposed under a Conditional SEQR determination as illustrated on the DEC website include:

- "Requiring addition of a turning lane and new traffic signal to mitigate traffic impacts
- Addition of a permanent vegetated buffer area along the stream bank to protect the riparian corridor along the waterway
- Requiring that all stonewalls located along public roads shall be maintained
- Requiring that a landscape berm shall be built between the public road and the parking lot to screen and buffer a new shopping plaza; and
- Requiring that the siting of the proposed parking lot shall be moved to from the eastern side to the western side of a proposed structure to avoid impacts to a wetland."

The Planning Department finds that requiring a public easement to make a critical connection between an isolated cul-de-sac and the adjacent parklands and neighborhoods falls within the types of examples provided by the DEC and recommends the Planning Board adopt a conditional SEQR determination to avoid negative impacts to existing land use plans and an existing walkway.

The proposed resolution is attached, with a conditional SEQR determination included.



Albany Office 100 Great Oaks Boulevard, Suite 114, Albany, NY 12203 P: 1.833.723.4768

December 28, 2023

Laura Robertson, AICP Town Planner One Niskayuna Circle Niskayuna, NY 12309

Re: Town of Niskayuna 2890 River Road Subdivision Review Our Project No. 230322-000R

Dear Mrs. Robertson,

We are in receipt of Response Letter dated 12/8/2023, Revised Plans dated 12/6/2023, Updated Storm Water Pollution Prevention Plan (SWPPP) dated 12/6/2023, Subdivision Application dated 12/4/2023, and Revised Short Form EAF dated 6/22/2023. The applicant proposes to construct up to three (3) new residential single-family homes on a total of 6.09 acres of land located at 2890 River Road tax parcels 51.-1-7.1 and 51.9-2-1.1, with 0.099 acres of ACOE wetland disturbance. Two homes will have frontage on River Road, and one will have frontage on Seneca Road. One home that would have had frontage on River Road has been removed from this updated plan we received on 11/6/2023 (previously 4 lot subdivision). Based on our review of the materials provided we have the following comments:

Any comments that are crossed out have been previously addressed.

Response Letter Dated 12/8/2023

1. Item 3 under the River Road Drainage Report mentions that "It is our understanding that the Town will engage an engineering firm to provide further analysis and subsequent design to improve the drainage at Seneca and River Roads ..." and similar statement are made in the SWPPP. Statements that appear to be saying the Planning Board has or will commit the Town Board or any Town Department to take action should be reworded or removed from any correspondence or reports.

Short Environmental Assessment Form:

1. The Applicant has indicated in their answer to question 14 that wetlands and suburban habitats are typically found on the project site, however the Subdivision Site Plan shows large areas of wooded lands. We ask the Applicant to include Forest in their answer to question 14. *The Applicant has added Forest to their answer to question 14. No further comments.*

Applicant for Sketch Plan Approval-4 Lots or Less

1. Reviewed and no comments.

Application for Approval of Plat Plan- Minor Subdivision

1. Reviewed and no comments.



Site Plan:

- 1. The Site Plan scale is 1-inch equals 30 feet, meeting the Map Requirements for a Minor Subdivision of no less than 1-inch equals 100 feet.
- 2. The Town code requires direction of drainage flow to be indicated on the plan. *The Applicant has* revised the site plan (C-103) to show the direction of drainage flow from each of the three proposed parcels, as well as the direction of flow for the wetland area and Seneca Road and River Road culverts. Some of the large paved driveway/parking area on Lot 3 appears to shed water to the West, however, this new impervious area should be directed to the proposed bioretention area.
- 3. The Applicant has provided the Survey of the Lands of RPL Family Trust which includes the corner monuments for both parcels 51. 1 7.1 and 51.9-2 1.1, dated 12/1/2022 and prepared by Gilbert VanGuilder Land Surveyor, PLLC.
- 4. Sheet C100 Existing Conditions and Demolition Plan shows a wood framed home to be razed in the general location of the proposed home on Lot 2 with a similar first floor elevation of about 297'. If this home has a basement that is accessible, it would be advisable to perform an inspection to look for past water intrusion. *The Applicant has advised that an inspection of the basement of the wood framed home to be razed is not possible due to the structures existing condition. Photos of the basement were reviewed, and the Applicant determined that no signs of past water intrusion were seen. The Applicant also states that the new homes will be constructed with waterproofing construction techniques and sump pump back up. We find this to be acceptable and it can be confirmed through Town building permit inspections during construction.*
- 5. We had originally begun review of the 4-Lot Subdivision Plan Sheet C101 dated 8/23/2023 which contained different lot layouts on the stand-alone version and the version included as Attachment 7 of the Drainage Report. The applicant has since provided a new version of the Plan dated 11/3/2023 which now shows only 3 Lots. The Plan in the Drainage Report will need to be replaced with the latest version. *The Applicant has provided an updated SWPPP for review (formally called the Drainage Report). See comments in the SWPPP Section of this letter.*
- 6. The Site Plan does not show all structures, wooded areas, streams, and other significant physical features within 200ft of the portion to be subdivided, particularly the structures present along Seneca Road. The name of the owner and all adjoining property owners should be identified. *The Applicant has revised the site plan to show structures, significant physical features, and adjoining property owners within 200 ft of the project. No further comments.*
- 7. The area of proposed wetland disturbance near the edge of Seneca Road at lot 3 is approximately 235 ft long and the proposed driveway culvert pipe is 30 ft long. It is believed that a long stretch of the lot 3 parcel is planned to have the wetlands filled to create lawn area, however, fill is not specifically called for on the plan. We would ask the applicant to clarify the extent of wetland disturbance along the frontage for this lot, how the drainage will be maintained and how much wetland disturbance is actually necessary. *The applicant has advised that the wetland disturbance at the front of Lot 3 is necessary to create the bioretention area which has recently been added to the plans, which justifies some of the wetland disturbance. The remaining wetland impacts on the lot are to allow for the preferred position of the home to maximize the vegetated buffer with neighbors and the Town Park. The wetland disturbance remains under 0.1 acres allowing for an ACOE NW29 permit, and the plan has been updated to show a grass lined swale upstream and downstream of the proposed 50 ft of 12" diameter driveway culvert along Seneca Road. This culvert has been sized for the 25-year 24-*



hour storm event, which is the minimum required by the Town code. We ask that the driveway culverts for all 3 lots be sized to convey the 100-year 24-hour storm event and include velocity dissipation features at the outlets.

- 8. The proposed finished floor elevation for the house on lot 2 is 297.15, which has been raised by 3.4' over the previous plan and is now about 11' above the ground surface elevation of the existing wetland edge (286.0'). Additionally, the ground elevation at the southeast (rear) corner of the house is proposed to be 292.0', which is only 6' above the ground surface elevation of the existing wetland. The Town has indicated that the wetland often has standing water and does not completely drain. Furthermore, basement floor elevations are typically at least 8 feet below the first floor. Therefore, there is a possibility of basement flooding at the house on lot 2. The Applicant should indicate how this issue will be addressed to meet the applicable requirements of the Niskayuna Town Code (Building Construction subsection 75-40), which state that "Buildings built in soil which is waterbearing at any time of the year shall be maintained so that ground- and surface water will not penetrate into the habitable space." The lowest finished floor elevation of the 3 proposed homes is shown on Lot 2 at an elevation of 299.40. The basement floor elevation is stated to be approximately 291.40, which is essentially at proposed grade at the rear of the home and would still be about 12" above the anticipated water level in the wetland during the 100-year storm event. The analysis was performed under the conservative assumption that the culvert crossing at Seneca Road and the wetlands adequately convey flows to the inlet of the River Road culvert (control point). The Applicant also states that the new homes will be constructed with waterproofing construction techniques and sump pump back up. We find this to be acceptable and it can be confirmed through Town building permit inspections during construction. No further comments.
- The Site Plan states that the wetland disturbance area will be 0.099 acres, which is less than the 1/2 acre wetland disturbance threshold for Army Corps of Engineers Nationwide Permit #29 - Residential Developments and is therefore acceptable.
- 10. The Site Plan shows the 25' wetland setback at both of the proposed impact areas on lot 3 after the loss of wetlands. The applicant should show the 25' buffer along the existing wetland boundary for a true picture of the impact. *The Applicant has revised the site plan drawing C103 to show the 25' wetland setback along the existing wetland boundary in the areas of proposed impact. No further comments.*
- 11. Sheet C500 contains details for "Insulation over shallow drain detail", "Shallow sewer line insulation detail" and "Insulation over shallow water line detail". It is not clear on the Site Plan where these details are proposed to be used. We will also have to check with the Town Engineering Department to see if these details are allowed. The Applicant has removed Detail 1-Insulation Over Shallow Drain Detail, Detail 4- Shallow Sewer Line Insulation Details, and Details 6- Insulation Over Shallow Water Line Details from Drawing C501 (previously C500). No further comments.
- 12. The Town multi-use path easement needs to be shown on lot 3. The Town will also require the applicant to prepare and show on the plan a utility easement between the Seneca Road right-of-way and the Town Park property for potential future utility installation.
- 13. The Town would like to see a Street Tree Planting Plan as part of the next drawing set revisions. The code states that the trees shall have a minimum of 2.5" caliper at 5 feet above grade and be planted parallel to the street with a minimum of 2 trees per lot or one tree every 60 feet of road frontage.



SWPPP (formally called the River Road Drainage Report)

- The Report will need to be updated to account for the change from 4 lots to 3 lots. The following comments refer to the lot numbering shown on the 11/3/2023 drawings. The project plans dated 12/6/2023 have been added as Attachment 8 to the SWPPP. No further comments.
- 2. Study Point 1 in the report is the inlet of the 30" and 36" culverts under Seneca Road, which is upstream of the project area. This area has been included in the study due to existing drainage concerns that the Town has and with the intent to make sure they do not worsen due to this development project. The analysis was performed for the 25 year storm event, with and without improvements to the wetland "channel" between the outlet of the 2 culverts and the inlet of the 42" culvert (Study Point 2). Both conditions showed that the culverts are undersized for the 25 year storm event and Seneca Road would be overtopped by as much as 18" of water, with only slight improvement when the wetland "channel" was improved. The updated plans include bioretention areas on each of the proposed lots to ensure pre-development condition site runoff is not increased for the post-construction site development condition as the practice provides water quality and quantity controls. No further comments.
- 3. Study Point 2 is the inlet of the 42" culvert under River Road, which is downstream of the proposed development project. As such, the Town code only requires initial evaluation during the 5 year storm event. The result of this analysis shows that the culvert cannot handle the 5 year storm event flow under existing or proposed conditions and water would eventually overflow River Road. This situation will only worsen under higher intensity rainfall events that should be modeled to determine a proper culvert size. An increase in through-put of the 42" culvert would require further study of potential impacts downstream of the culvert outlet. *The applicant has offered a drainage easement on lot 3 to the Town may be best for the long-term. See item 2 above regarding this project adding stormwater management areas on each parcel to provide a zero net increase in runoff rates to the existing watershed. No further comments.*
- 4. The report shows stormwater flowing directly offsite from all 3 proposed lots without any detention or treatment that would be necessary for the increased impervious surfaces of roofs and driveways, which is contrary to the requirements of the New York State Stormwater Design Manual (SWDM). Please recheck the CN for pre and post-development area F, as it is shown as 79 for both. See item 2 above regarding this project adding stormwater management areas on each parcel to provide a zero net increase in runoff rates to the existing watershed. We have verified that the post-development composite CN value of 79 is accurate for the land uses. No further comments.
- 5. As the development of the three lots includes new impervious surfaces from roofs and driveways, the Applicant needs to provide peak flow numbers for the pre-developed and post-developed lots for the 1-year, 10-year, and 100-year storm events, as required by the SWDM, to show that the post-development peak flows will be less than or equal to the pre-development peak flows for each event, as other subdivisions have been required to do in the Town. *Post-construction stormwater management practices (bioretention) have been added to each lot and we have verified the calculations show attenuation of the 1-year, 10-year and 100-year storm event peak flows (obtained)*



> from the Extreme Precipitation Tables from the NE Regional Climate Center) to less than predevelopment conditions. No further comments.

- 6. The Applicant needs to show stormwater management practices that will provide for water quality treatment in addition to the quantity controls. Sediment removal and clearing debris from the wetland to improve a "flow channel" should not be factored into the flow calculations because over time these conditions will return resulting in a reduction of the storage and transmission capacity of the wetland back to its current state or less, and periodic maintenance of a natural wetland cannot be assumed due to future State or Federal requirements. Thus, the existing wetland cannot be used as a "practice" for reducing flows leaving the developed areas of the site and the flows that would leave the proposed lots and enter the wetland after development must not exceed the existing flows leaving those same areas of the site and going into the wetland prior to development. *Please see items 2 & 5 above. No further comments.*
- 7. Proposed Lot 2 may be able to take advantage of the redevelopment section of the SWDM, as there is an existing home and driveway that are to be removed prior to construction of a new home.
- 8. The Applicant should provide analysis of the 100-year storm through the unimproved wetland and culverts to ensure that these existing features can pass the peak flows from upstream, the new lots, and the wetland itself without flooding the proposed houses and lots. *See Site Plan item 8 above for review comments on this response. No further comments.*
- 9. Additional materials, including as-built mapping, plans and reports for Iroquois Middle School, Campo Court and Owasco Court stormwater management systems would be helpful in checking accuracy of the HydroCAD model in the Report. *This information would be needed for a future study of the drainage in this general area.*
- 10. In Section IX.C. Maintenance, Inspections and Record Keeping, Permanent E&SC Practices and Post Construction Features, "Infiltration Bains" is mentioned, however, no infiltration basins are proposed. The applicant should remove and replace with a section describing "Bioretention" practice requirements, as well as add a section for "Vegetated Swale" for the frontage area along Lot 3.

If you have any questions, please feel free to contact me.

Sincerely,

KB Group of NY, Inc. dba PRIME AE Group of NY

Douglas P Cole

Douglas P. Cole, P.E. Senior Director of Engineering

cc: Matthew Yetto, Superintendent of Water, Sewer, and Engineering Clark A. Henry, Assistant Town Planner







<u>Shee</u>t index

CO01 SITE LEGEND AND NOTES C101 EXISTING CONDITIONS AND DEMOLITION PLAN

C101 EVISIONE CONDITIONS AND DEMOLTION PLAN C102 OVERALL SUBMONSION PLAN C103 SUBMONSION PLAN – PROPOSED –LOT C104 EROSION MOD SEGMINET CONTROL PLAN C501 STORM DETAILS C502 EROSION AND SEGMINET CONTROL DETAILS (1 OF 2) C502 EROSION AND SEGMINET CONTROL DETAILS (1 OF 2)

C503 EROSION AND SEDIMENT CONTROL DETAILS (2 OF 2)

SUBJECT PROPERTY:

TAX MAP PARCELS 51.-1-7.1 AND 51.9-2-1.1

APPLICANT/OWNER:

RPL FAMILY TRUST 2505 WHANER LANE NISKAYUNA, NY 12309

SURVEY NOTES

2890 RIVER RD TOWN OF NISKAYUNA, SCHENECTADY COUNTY, NEW YORK

3. CONTOUR INTERVAL DEPICTED HEREIN IS TWO (2) FOOT.

1. EXISTING PHYSICAL FEATURES, BOUNDARIES, AND TOPOGRAPY SHOWN HEREIN ARE BASED OF

2. Engineering ventures has not performed any boundary or topographic surveys. The property lues, sessionants, and other real property desorptions provided on these plans to not define lead. Regits or head to lead any sensitivity for a lund survey as desorbed in my statutes, and small hot be used as the basis of any lund transferr or estimationant of any property read.

4. UTILITES SHOWN DO NOT PURPORT TO CONSTITUTE OR REPRESENT ALL UTILITES LOCATED UPON OR AUACENT TO THE SURFYED PREMESS. EXISTING UTILITES SHORM ON THE FLANS WEET TAKEN FROM FED. DESEMBNOIS OF VISIBLE UTILITES AND PREVIOUS MAPS AND RECORD UTILITY DRAWINGS AND NOT GUAPANTEED TO BE ACCURATE OR COMPLETE.

A PLAN ENTITLED "SURVEY LANDS OF RPL FAMILY TRUST #2890 RIVER ROAD", PREPARED BY GILBERT WANGUILDER LAND SURVEYOR, PLLC AND DATED DECEMBER 01, 2022.

SHEET SHEET TITLE

GENERAL NOTES

EXACT OBJECT LOCATIONS MAY DIFFER FROM THAT AS SHOWN, AND ADDITIONAL SUB-SURFACE AND SURFACE AND STRUCTURES MAY EXIST. THE CONTRACTOR IS TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK.

- UTUTES SHOWN DO NOT PURPORT TO CONSTITUTE OR REPRESENT ALL UTUTES LOCATED IPON OR ADMOSTIT TO THE SUMPETED PREMIESS. DUTING UTUTIV LOCATIONS ARE APPROXIME ONLY. THE CONTRACTOR SHULL PELE PERFY ALL UTUTES. ALL DOSEPARATES SHULL & REPORTIDO THE OWNER AND ENDERER. SITE CONTRACTOR SHULL UTUTE LOCATION SERVICE AND UTUTIV DOMEST 72 HOURS, DOLLANG, OF MEEDEDS AND HALDARS, PROR TO ANY DOCAMENT, RESULTIVE, DUSTRIC.
- Than 10 off looping, detailing on document A. DG Syre ([14] (411) B. Inin DG Syre Weibber Aculty operators if known, (a list of dig Syre Members By State Can be found on the OS Syre Bigs The Wind(SyreCom) C. Town of Niskatuma Water and Sener Department (518–386–4520)
- 3. The encineer shall be notified in writing of any conditions that vary from those shown on the plans, the contractor's work shall not vary from the plans without the expressed approval from the encineer.
- THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB STEE DURING THE PERFORMANCE OF THIS CONTRACT.
- THE CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, CULVERTS, SIGNS AND OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO EXISTING CONDITIONS OR BETTER AS DETERMINED BY THE ENGINEER. ANY DAMAGED TREES, SHRUBS AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, UNLESS NOTED OTHERWISE.

6. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.

- THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL BUILDING PERMITS. THE CONTRACTORS SHALL BE RESPONSIBLE FOR ALL WORK PERMITS, INSPECTIONS, AND CERTIFICATES.
- 8. THE CONTRACTOR WILL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENABLER OR OWNER SHALL BE REFLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A New YORK STATE LUCHESED LAND SUPERVICE.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS, AND COORDINATE WORK WITH ALL CONTRACTS FOR THE SITE.

10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT EXPLORATORY TEST PITS AS MAY BE REQUIRED TO DETERMINE UNDERGROUND CONDITIONS.

All Trench Excavation and any required sheeting and shoring shall be done in accordance with the latest osha regulations for construction.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK. DEWATERING METHOD MUST BE APPROVED BY THE OWNER AND COORDINATED WITH THE CITY OF GLIDE FILLS DEWATERING OF FUELU CORKS

13. MAINTAIN FLOW FOR ALL EXISTING UTILITIES, UNLESS NOTED OTHERWISE.

14. CONTRACTOR TO GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND IMPERVIOUS SURFACES.

15. THE CONTINUEDR SINUL BE RESPONSELE FOR PROMOUG ALL FELD LIVOUT. THE CONTINUEDR SINUL PROME WRKED-UP AS-BULT PLANS FOR ALL UILUITES SYMMING COMPACTIONS, BEING, WALVS, LEWETHS OF LINES MUN WRKED. KS-BULT PLANS SINUL BE REVEND BY THE OWNER AND HIS REPRESENTATIVES BEFORE UILUITES WILL BE ACCEPTED.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION, MONTORING, MAINTENINGE AND REMOVAL OF ALL TEMPORARY ERGISINI CONTROL MESSURES AND TAKING PRECAUTIONARY STEPS TO AVOID ANY SEDMENT TRANSFER TO NORHORDING STEPS OR WHETES OF THE STATE.

17. BY ISSUANCE OF A BUILDING PERMIT, THE TOWN OF NISKAYUNA DOES NOT ASSUME ANY LUBLITY FOR STORM INVER DAMAGE BY GENERAL APPROVAL OF THESE PLANS. THE OWNER MUST ASSUME ANY AND ALL LUBLITIES FOR DAMAGE CLANNED ANSING OUT OF INCREASED STORM INTERF FLOX.

ALL ON-SITE SANITATION AND WATER SUPPLY FACILITIES SHALL BE DESIGNED TO MEET THE MINIMUM SPECIFICATIONS OF THE STATE DEPARTMENT OF HEALTH.



SYMBOL



SCALE: 1 =400



LINETYPE LEGEND

PROPOSED FEATURES EXISTING FEATURES MAJOR CONTOL MAJOR CONTOUR 100 ____ 98 ___ - MNOR CONTOUR ----- 98 ------- MINOR CONTOUR - PROPERTY LINE PROPERTY I MA · ---- SETBACK . _____ SETRACK _____ · ____ · ____ EASEMENT - CENTERLIN - CENTERLIN - EDGE OF PAVEMEN EDGE OF PAVEMENT ------ EDGE OF GRAVEL - EDGE OF CONCRETE - EDGE OF CONCRETE - CURB CURB X X KARABED WRE FENCE (RADDED WADE) - o - o Fence (Chain Link) - FENCE (CHAIN LINK) - o ----- o ----- FENCE (WOODEN) FENCE (WOODEN) . CUMRD RAI TREE LIN STONE WALL SANITARY SEWER SAMITARY SEWER SANITARY SEWER APPRO ____ SEWER FORCEMAIN SEWER FORCEMAIN STORM LIN _____ ____ STORM LINE STORM LINE APPROX. UNDER DRAI UNDER DRAW FOUNDATION DRAIN FOUNDATION ORAN ____ ROOF DRAIN . ROOF DRAW UNDERGROUND, TELECOMM INDERGROUND TELECOMM - OVERHEAD TELECOMM UNDERGROUND ELECTRIC UNDERGROUND ELECTRIC -OHE ---------- OVERHEAD ELECTRIC - OVERHEAD ELECTRIC -6" WATER LINE WATER LINE . WATER APPROX -8" w ------- 8" WATER LINE ____ __ NRCS SOIL BOUNDARY Planning Board Chairman Date Town Engineer Date



101 Date Plan

rust ane 2309 Family Whamer Una, NY -RPL 2505 Niskav

Startin: SITE LEGEND AND NOTES	Project This:	2890 RIVER ROAD MINOR SUBDIVISION	TOMALOF AICVAVIALA COURACTARY COUNTY AV
EV Project #			1204
0			

AS NOTE

ecked By:











GRAVITY AND SEWER FORCE MAIN TRENCH DETAIL

NOT TO SCALE 2

6.

7.



SDR-35 PVC PIPE



HERE: I MUSC on othere for the case of case of the ca

DURING COGRIMICITION MAD FREE OF UNSUITABLE MUERING SIS GENERAL IN THE LAMMINERY SPECIFICIDING RULLED ON THESE 1. ON MICHINGUL MARTENIS SUILLE LIG GENERAL DURING FREE FRE S AND TUBBLE FREE SINT TUBBLE 8. POCILIL MUERING SUILLE COMPARTELIN N'L'LUNERS TO 252 OF MUCRETE PROCEINE (SISTI TO MININ S TEET OF MINISTED GROUEL MERSU LUDER COMMANDE, IN L'L'LUNERS TO 252 OF MUCRETE PROCEINE (SISTI TO MININ S TEET OF MINISTED GROUEL MERSU LUDER COMMANDE, MINISTERIE D'URING SUILLE COMPARTEL NI S' D'USE MUERING PROCEINE (SISTI TS) AND IN LIMIN OR THER MUDDIELLOPED SPACE THE UPPER 3 TEET SHALL BE COMPARTEL 10 522 MUERING PROCEINE.

WATER TRENCH DETAIL NOT TO SCALE 4



NOT TO SCALE 5



COPPER SERVICE CONNECTION DETAI OT TO SCALE (6)



Project #

un By

hecked By:

C501

2235

HMB









- Thee protection notes: 1. To oluculate the critical root radius, estimate the tree's height and multiple by 40 predict (2040). The result is the Approximate distance from the tree trunk to the edge of the construction fercing.
- FENCE SPECIMEN TREES AND GROUPS OF TREES. WHERE ROOT LOSS WILL OCCUR, ROOT PRUME ONE FOOT BEYOND THE CONSTRUCTION FENCE USING A VIBRATING KINFE OR NARROW TRENCHER ALWAYS WITH SHARP BLADES TO MAKE CLEAN CUTS. BACKFILL MANEDATELY AND COVER WITH 3 INCHES OF MALCH.
- INSTALL SILT FENCE ON THE INTERIOR OF THE CONSTRUCTION FENCING TO KEEP SOIL FROM DISTURBED AREAS OUT OF THE ROOT ZONES OF TREES TO BE SAVED.
- 4. FERTILIZE, WATER, AERATE AND OTHERWISE AID TREE HEALTH.
- COORDINATE THE FINAL LOCATION OF THE CONSTRUCTION FENCING AND ROOT PRUNING WITH THE OWNER.

TREE PROTECTION FENCING DETAIL





CONCRETE WASHOUT AREA NOTES

- 1. ALL CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY. DAWAGED OR LEAKING FACILITIES SHALL BE

concrete washout sign on



EXCAVATED CONCRETE TRUCK WASHOUT DETAIL NOT TO SCALE 3



3.

4

- IN PLANS. SET SPROME OF CHEOR DAWS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAW IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAW. EXTRO THE STORE A MINIMUL OF 15 AFTER BEROND THE DIFORT BAWNS TO PROVENT CUTTING AROUND THE DAW. REDITED THE CONNECT DOWNSTREAM OF THE LOWEST DAW FROM SCOLA AND EROSON WITH STONE OR
- House in the convect outershown of the cures i due hour source and existing thin stoke of Liker as Appropriate. Ensure that owned, papertenances such as cuvert entrances below check dang are not subject to dang of Buckard from USPAUCE stokes. Remove accounting schement behad check dang when 1/2 the height of the dang. Replace Stokes as necessary.
- <u>STONE CHECK</u>DAM DETAI

NOT TO SCALE 6

GENERAL EROSION CONTROL NOTES

- 2020EL WOTS 1. NET MORE TERSION CONTROL FLAW CORRENATOR[®] SHILL EF PRESENT ON-STIE FROM DAY-TO-DAY, AND SHILL EF 1. NET MORE FOR EDRAWING THE TE BODGING CONTROL MURGINES RECORDED BY THE ETBODGING CONTROL MAN, DEVIN AND WOTS, NET AND REPORT VERSLED AND WANNEED. THE CONTROL CONTROL FLAW, DEVIN METERSTIN RECORD OF INSTETIONS AND WANTERSA THE CONTROL FOR THE DISCONSTINUE SHILL BE METERSTIN WANTERSA TO AND AND THE ETBODIES OF THE DISCONSTANTING THE DISCONSTANTION AND SHILL BE METERSTIN WANTERSA TO AND AND MATERIA THE CONTROL FLAWS. A COPY OF THESE PANES AND INSTETION/WANTER CONTOG SHILL BERT FOR DISCIN ALL MALES.
- EROSION CONTROL MEASURES SHALL BE CONDUCTED IN ACCORDANCE WITH THE "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROLS", DATED NOVEMBER 2016, OR LATEST EDITION.
- DISTURBANCE UNITS ARE TO BE WARKED, AND THE FOLLOWING MANAGEMENT PRACTICES INSTALLED, PRIOR TO BEGINNING EARTH WORK IN ANY GIVEN AREA: SILT FENCE, CONSTRUCTION ENTRANCE, INLET PROTECTION, AND TREE PROTECTION FENCING
- 4. THE PERIOD BETWEEN OCTOBER 15TH AND APRIL 15TH IS CONSIDERED THE "WINTER CONSTRUCTION PERIOD". A PLAN FOR WINTER CONSTRUCTION MUST BE DEVILOPED BY THE CONTINUETOR, AND SUBMITED TO THE ENGINEER AT LEAST 30 DAYS IN ADVINCE OF PROPOSED DAYN ID SUTRABUNCE DURING THIS PERIOD.
- 5. ALL GENERAL MACE ARE TO BE SUBJECT (THEREAVER OR INKL) ATTRC TO BE OF INTRL GENERALCE ATTER THE THE, MY DESIDENCE THIN THE MORE AREA MADE RESOLUCIES AT THE DO OF DON HORE DAY, WITH THE FRUIDMEN DISTINCE.
 6. SUBJECTION IS IN FRUIDURE TO MORE TO DOTINUE THE AREA INTRU X A HORE MADE NO PROFESSION IS b. WORK IS COLSENING THINK A SUI-CONVENDE DOCUMENT, 2 FEED DE MORE AND FRUID-THEOR TO IN DOCUMENT, SUIS DE EDVISOOS THE MER HIN IA DAY GINING FRUID STRADLED.
- 6. The contractor is responsible for daly inspection of the adjacent roadways for off-site tracking of soil, materials, soil, store, and derive to the readout of the readout (when found) by safeting at the end of each construction bay, or nore regional tracked to prevent invects to adjacent radius and
- IF DEWATERING IS REQUIRED FOR CONSTRUCTION, THE CONTRACTOR MUST UTILIZE SEDMENT FILTER BAGS (OR ALTERNATE APPROVED BY THE ENGINEER) TO PREVENT DISCHARGE OF SEDMENT-LAGEN WATER OFF SITE.
- TEMPORARY/CONSTRUCTION EROSION CONTROL MEASURES 1. THE SMALLEST PRACTICAL AREA OF LIND SHALL BE DISTURBED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LIND IS DISTURBED, THE DISTURBANCE SHALL BE KEPT THE SHORTEST PRACTICAL DURATION AS APPROVED BY THE ENGINEER.
- DUST SHALL BE CONTROLLED WITH WATER DISTRIBUTED BY A TRUCK-MOUNTED SPRAY BAR. CALCIUM CHLORDE (AASHTO M 144) OR SODIUM CHLORDE (AASHTO M 143) SHALL BE USED AS DIRECTED BY THE ENGINEER.
- 3. SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE PLANS Sul fermas shrild be instructed generally to feel than the bage of the fill sources, on as shrint and these shall ready in placed to the fill her product stre has been strendlyzed. Sourdant shall be provided fro berhad the slit fence when it becomes 6 inches deep at the fence. The slit fence will be repared as necessary to warran a report scidnet barrer.
- EXCAVATED MATERIAL FROM EARTH EXCAVATION AND DITCH DIGGING SHALL BE PLACED ONSITE IN A LOCATION TO APPROVED OF BY THE OWNER AND/OR THE ENGINEER OR USED FOR PROJECT FILL MATERIAL IF DETERMINED SU THE OWNER'S REPRESIVATION.
- stockpled waterw, (topsol, borrow, etc.) swal, hwo sly fedre constructed around the perinter. The stockpled waterw, swal, be seened no walance as scon as possible to propert sou, broskn no stochardnik, or stiel locate stockples on the light as de of istimers parks, fe possible, comen way conditions, stockpled waterw, swal, be covered or watered appropriately to prevent wind eroson.

PERMANENT EROSION CONTROL MEASURES 1. WHEN FINAL GRADES ARE REACHED IN AN AREA, IT SHALL BE SEEDED AND MULCHED WITHIN 48 HOURS.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUED MAINTEININCE OF ALL DISTURBED AREAS, INCLUDING WATERING UNTIL THE AREA IS INSPECTED AND ACCEPTED BY THE OWNER OR ENGINEER.
- 3. AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED
- RE-SEEDING SHALL BE DONE UNTIL ALL AROS ARE COMPLETELY COMERCE WITH A WATURE STRAND OF GRASS. AN AREA SHALL BE CONSIDERE ORIGEN WHEN THE DIRTE STRANGE COMMERA A FEDERICUS STAND OF GRASS. ANEA TO ALL THE OFMOLIO THE DRAVERE, RE FROMOMENTY BETES SHALL BE ROUDE UP AN EROVER). THE GRAVED, THE ROUVED, IN A BROWER, THE GRAVED, THE ADVISOR, THE ADVISOR AND ALL STRANGE TO NEW OR STRANGE AND ALL STREED IN THE WANKER SPECIFIED PREVIOUSLY, DERICOND CAUTION NOT TO CHILSE DRAVGE TO NEW OR OF DISTING PLANT WATERAL. 5. ALL STABILIZATION INVOLVING SEEDING IS TO BE COMPLETED BY SEPTEMBER 15TH.



NOTES: 1. All project dematering pumps shall discharge into a pumped sediment control dence. 2. Gedeville Bag Materia, Based on particle size in pumped water, i.e., for coarse particles a woven

- 2. GUIDELE DER MURICHE DERE UN FWINZLE SICH IN VOMEN MURICH, ELL FOR CURREN PRINTERS A MORTH MURITERU, FOR SICH SICH AND MURICHEN STUDIES UND FOR PRESSARZED DER GE UST HERTEN AUCH VOMEN PRESSARZED DER GE UST EENTEN DAVIG AVAN VA POSSBELF FORM STERUNG, METHANS, OTHER RESSARZES MID FORMS OF CONCENTIONED FORM. ANAL VA POSSBELF FORM STERUNG, METHANS, OTHER RESSARZES MID FORMS OF CONCENTIONED FORM.
- FLOOR, GRASS LAWN OR COARSE GRAVEL/STONE. DISCHARGE LOCATION SHALL WET HALL REQULATORY SETRACKS FROM WETLANDS AND OTHER WATER COURSES. HEAVY EQUIPMENT ACCESS TO THE THE PUMPED SEDWENT CONTROL DEVICE SITE SHALL BE MAINTAINED FOR REPLACEMENT AND DISPOSAL.

NOT TO SCALE 5

9 FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION CLEANING AND REMOVAL PUMPED WATER FILTER BAG

WINTER EROSION CONTROL NOTES

- whiter construction standards and erosion and sediment control measures apply to all construction activities would with ongoing land disturbance and diposure between october 15th to the following appl. 15t.
- WINTER CONSTRUCTION PROCEDURES. 1. DURING WINTER CONSTRUCTION, INSPECTIONS BY THE ON-SITE PLAN COORDINATOR SHALL OCCUR DALLY WHEN AREYS ARE UN-STABLE, AND WEEKLY PROR TO ANY FOREASTED RAIN, THAW OR SPRING NELT WHEN TEMPORARY STABILIZATION IS IN PLACE.
- IF THE SITE WILL NOT HAVE EARTH DISTUREING ACTIVITIES ONGOING DURING THE WINTER CONSTRUCTION PERSON, ALL BREE EPIPOSED SOL, MUST ES STABLUZDE PET STABLISHING VEGETINION, STRAW GR OTHER ACCEPTAGE MULCIN, MUTTINI, ROCK, OR OTHER APPONED MUSTING, SUCH AS ROLLED BOSON ONTONIC, PRODUCTS, SEEDING GR AREAS WITH MULCH COVER IS IMPETIRED BUT SEEDING ALONE IS NOT ACCEPTINGLE FOR PROPER STABLIZZIONE.
- PREPARE A SNOW MANAGEMENT PLAN WITH ADEQUATE STORAGE FOR SNOW AND CONTROL OF MELT WATER, REDURING CLEARED SNOW TO BE STORED IN A MANNER NOT AFFECTING ONCOMING CONSTRUCTION ACTIVITIES
- Enlarge and stabilize access points to provide for snow management and stockplung. Snow management activities must not destroy or degrade installed erosion and sediment control practices. 5. LINITS OF DISTURBANCE SHALL BE WOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK.
- A MINIMUM 25-FT BUFFER SHALL BE MANTAINED FROM ALL PERMETER CONTROLS (SUCH AS SLT FENCE) TO ALLOW FOR CLEARING AND MAINTENANCE. MARK SLT FENCE WITH TALL STAKES THAT ARE VISIBLE ABOVE THE SHOW PACK.
- SNOW IS TO BE REMOVED FROM ALL STRUCTURAL EROSION AND SEDMENT CONTROL MEASURES FOLLOWING EACH SIGNIFICANT SNOWFALL NO SNOW STORAGE UP-GRADENT OF DISTURBANCE. NO SNOW DISFOAL IN SEDMENT PONDS/MISING. IF RECESSARY, SNOW/CE MUSIC BE REMOVED PONDR TO STRUCTURING OF DISTURBED AREAS. 8. EDGES OF DISTURBED AREAS THAT DRAIN TO A WATERBODY WITHIN 100 FT SHALL HAVE 2 ROWS OF SILT FENCE, 5
- DRAINAGE STRUCTURES SHALL BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS. ALL DEBRIS, ICE DAMS, OR DEBRIS FROM PLOWING OPERATIONS, THAT RESTRICT THE FLOW OF RUNOFF AND MELTWATER, SHALL BE REMOVED
- SEDIMENT BARRIERS MUST BE INSTALLED AT ALL APPROPRIATE PERMETER AND SENSITIVE LOCATIONS. SLT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE MUST BE INSTALLED BEFORE THE GROUND FREEZES.
- STOCKPILES MUST BE PROTECTED BY THE USE OF ESTABLISHED VEGETATION, ANCHORED STRAW MULCH, ED STABLIZATION MATTING, OR OTHER DURABLE COMERNO. A BARRER MUST BE INSTALLED AT LEAST 15 FT I THE TOE OF THE STOCKPILE TO PREVENT SOL INGRATION AND TO CAPTURE LOOSE SOL.
- 13. IF STRAM MULCH ALONE IS USED FOR TEMPORARY STABLIZATION, IT SHALL BE APPLED AT DOUBLE THE STANDARD RATE OF 2 TONS PER ACRE, MANNE THE APPLGATION RATE 4 TONS PER ACRE. OTHER MANUFACTURED MULCHES SHOLLD BE APPLED AT DOUBLE THE MANUFACTURER'S RECOMMENDER ART.
- 14. TO ENSURE ADEQUATE STABILIZATION AND COVER OF DISTURBED SOL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOL, SHOULD BE STABILIZED AT THE END OF EACH WORK DAY WITH THE FOLLOWING EXCEPTIONS: a. WORK WILL RESULUE WITH 24 HOURS IN THE SWE AREA AND NO PREPENTION IS FOREZOFT OR; b. THE WORK IS IN DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS OPEN UTILITY TRENCHES, FOUNDATION EXCANATIONS, OR WATER MANAGEMENT AREAS.
- 15. USE STONE PATHS TO STABILIZE ACCESS PERIMETERS OF BULDINGS UNDER CONSTRUCTION AND AREAS WHERI CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED. STONE PATHS SHOULD BE A MINIMUM 10 FT IN WOTH BUT WIDER AS DECESSARY TO ACCOMMODIFE EQUIPARIT.
- ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE BY OCTOBER 15, OR IF NOT POSSIBLE, THEN PRIOR TO GROUND FREEZE.
- 17. SNOW AND ICE SHALL BE REMOVED TO LESS THAN 1" THICKNESS PRIOR TO STABILIZATION

CONSTRUCTION SEQUENCING

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A DETAILED CONSTRUCTION SEQUENCE DETAILING THE SPECIFIC WORK THAT WILL BE PERFORMED. THE SEQUENCE PROVIDED IS FOR GENERAL WORK ITEMS TO ENSURE THAT SEDIMENT LADEN RUNOFF IS NOT DISCHARGED FROM SITE. CONTRACTOR TO ENSURE THAT NO MORE THAN 5 ACRES IS DISTURBED AT ANY ONE TIME WITHOUT AREAS BEING FULLY STABILIZED.

- OBTAIN ALL INCESSARY APPROVALS AND PERMITS FROM THE APPROPRIATE AGENCIES INCLUDING THE NYSDEC, ACOE, AND THE TOWN OF INSKAYUNA.
- 2. HOLD PRE-CONSTRUCTION MEETING WITH ALL NECESSARY PARTICIPANTS AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION
- 3. INSTALL STABILIZED CONSTRUCTION ENTRANCE. MARK LIMITS OF DISTURBANCE WITH FLAGGING/TAPING OF APPROPRIATE MEASURES, INSTALL SILT FENONG DOWNSLOPE OF WORK AREAS AS SHOWN ON THE PLAN, INSTALL INLET PROTECTION ON EXISTING CATCH BASIN IN SENECA ROAD.
- 4. CLEAR AND GRUBB EXISTING VEGETATION TO THE LIMITS SHOWN ON THE PLAN
- 5. BEGIN DEMOLITION OF EXISTING STRUCTURES AND UTILITIES AS SHOWN ON THE DEMOLITION PLAN. CONTRACTOR TO STORE EXCMATED SUBBASE MATERIAL FOR RE-USE ON SITE IN DESIGNATED STAGING AREA, IF DEEMED SUITABLE BY ENGINEER
- STRP TOPSOIL FROM AND BEGIN FOUNDATION EXCAVATION AND ROUGH GRADING. FUTURE BIO-RETENTION BASIN AREAS NOT TO BE EXCAVATED AT THIS TIME TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE BASINS.
- BEGIN CONSTRUCTION OF BUILDING FOUNDATIONS. CONCRETE INSHOUT AREA TO BE INSTALLED AND FUNCTIONING PROR TO ANY CONCRETE BEING FOURED FOR THE BUILDING FOUNDATION. BUILDING WORK MAY CONTINUE THROUGH REMAINING DURATION OF PROLECT.
- 8. INSTALL PROPOSED WATERLINE AND SANITARY SEWER LINE
- 9. INSTALL ALL REMAINING UNDERGROUND UTILITIES, INCLUDING STORM CONVEYANCE SYSTEMS.
- 10. FINAL GRADE PAVEMENT AREAS AND INSTALL PAVEMENT BASE COURSES.
- . Once all upslope tributary areas have been stabilized, the bio-retention basins may be installed. Special care to be taken to not compact the native soils at the bottom of the bio-retention basins
- ONCE ALL DISTURBED AREAS HWE ACHEVED FINAL STABILIZATION, THE REMAINING EROSION CONTROL FEATURES SINAL BE REMOVED. STABILIZE MY MERIS DISTURBED DURING THE REMOVAL OF TEMPORARY EAS MEDISURES. INSTALL PERMINENT SEED AND MUCH ON MY MERIS NOT ALEADY STABILIZED.
- 15. INSTALL BINDER AND WEARING COURSES FOR ALL PAVEMENT AREAS

C504



Mary Plant

IGINEERING

rust ane 2309 Family Whamer Una, NY -

ROAD MINOR SUBDIVISION

RIVER

2890

223

AS NOTE

- බ I AND SEDIMENT DETAILS (2 OF 2

- 12. INSTALL LANDSCAPING AND IMMEDIATELY STABILIZE ALL 3:1 SLOPES WITH EROSION CONTROL BLANKET.
- 13 INSTALL ANY REMAINING HARDSCARE



EROSION / CONTROL E

2890 River Road Minor Subdivision Stormwater Pollution Prevention Plan

Town of Niskayuna, Schenectady County, New York

Prepared for: **RPL Family Trust** 2505 Whamer Lane Niskayuna, NY 12309

Issued:	October 11, 2023
Revision 1:	October 17, 2023
Revision 2:	December 6, 2023

Prepared by:

ENGINEERING

414 Union Street Schenectady, NY 12305

208 Flynn Avenue, Suite 2A Burlington, VT 05401

85 Mechanic Street, Suite E2-3 Lebanon, NH 03766



TABLE OF CONTENTS

Part 1: Narrative

- I. Introduction
- II. Existing Site Conditions
- III. Project Description
- IV. Receiving Waterbody
- V. Potential Impacts to Natural Resources
- VI. Soils Information
- VII. Offsite Hydrology
 - A. Seneca Road Culverts
 - B. River Road Culvert
- VIII. Onsite Hydrology
 - A. Lot 1, 2, & 3 Driveway Culverts
 - B. Post-Construction Stormwater Management
 - IX. Erosion and Sediment Control
 - A. Erosion and Sediment Control Design
 - B. General Housekeeping & Spill Prevention and Procedures
 - C. Maintenance, Inspections, and Record Keeping
 - D. Winter Construction Standards and Procedures

APPENDICES

- Attachment 1: Site Location Map & Short Environmental Assessment Form
- Attachment 2: Soils Resource Report
- Attachment 3: Drainage Area Maps
 - Figure 1 Lot 2 Culvert Drainage Area Map
 - Figure 2 Lot 3 Culvert Drainage Area Map
 - Figure 3 River Road Watershed Map
 - Figure 4 2890 River Road Subdivision Pre-Development Drainage Area Map
 - Figure 5 2890 River Road Subdivision Post-Development Drainage Area Map
- Attachment 4:

Attachment 6:

- **Extreme Precipitation Values**
 - Table A Intensity Frequency Duration Curve (25-year)
 - Table B Extreme Precipitation Tables
- Attachment 5: Culvert Calculations
 - Lot 2 Culvert Calculations 25-Year Storm
 - Lot 3 Culvert Calculations 25-Year Storm
 - Seneca Road Culverts Calculations Unimproved Channel (Study Point 1) – 25-Year Storm
 - Seneca Road Culverts Calculations
 Improved Channel (Study Point 1) – 25-Year Storm
 - River Road Culvert Calculations (Study Point 2) 25-Year Storm
 - River Road Culvert Calculations (Study Point 2) 100-Year Storm HydroCAD Reports
 - River Road Watershed (Study Points 1 & 2)
 - 2890 River Road Subdivision (Pre & Post-Development)

- Attachment7: 2890 River Road Subdivision Stormwater Calculations 2890 River Road Minor Subdivision Plans Attachment 8: Attachment 9: Endangered Species Habitat Suitability Assessment Phase 1 Archeological Survey NYS Historic Preservation Office (SHPO) Letter Attachment 10: **Erosion and Sediment Control** Owner Certification • Preparer Certification Contactor Certification • Pre-Construction Meeting Documents Construction Duration Inspections Monthly Summary of Site Inspections Activities • **Bioretention Area Construction Inspection Checklist** • **Bioretention Area Post-Construction Inspection Checklist** •
- Attachment 11: Copy of General Permit 0-20-001

I. INTRODUCTION

This drainage report has been prepared on behalf of the RPL Family Trust for a proposed 3-lot residential subdivision of two adjoining parcels.

The owner can be reached via the following contact information.

RPL Family Trust, c/o Ryan Lucey, Trustee 2505 Whamer Lane, Niskayuna, New York 12309 Email: <u>ryan@midstateltd.com</u>

II. EXISTING SITE CONDITIONS

The project site is located approximately 0.5 miles west of the Mohawk River, north of Rosendale Road, between Whitmeyer Drive and Covington Court on the west side of River Road. The site is bounded by River Road on the west, River Road Town Park on the north and Seneca Road to the south and east. See Attachment 1 for the Site Location Map. The involved parcels include wooded areas, approximately 2.14 acres of federally regulated freshwater wetlands, and an abandoned single-family residence with associated drives, lawns, and outbuildings. The existing home will be demolished as part of this project.

III. PROJECT DESCRIPTION

The project involves the construction of a 3-lot residential subdivision of two existing parcels (combined and subdivided). Parcel 51-1-7.1 is 5.26 acres in size with the abandoned single-family residence. Parcel 51.9-2-1.1 is 0.83 acres in size and is currently vacant. The combined parcels have frontage on Seneca Road and River Road. Each proposed lot will have a new single-family residence constructed with driveway, municipal water and sewer connections, local utility connection to electric, natural gas, and communications. Lots 1 and 2 will have access from River Road. The lot sizes are approximately 0.69 acres and 0.89 acres respectively. Lot 3 is approximately 4.51 acres. As part of the project, the owner will create a permanent drainage easement along the south edge of lot 3 to benefit the Town of Niskayuna. The easement will provide approximately 1.76 acres of land to make improvements to or maintain existing drainage paths through the involved properties.

IV. RECEIVING WATERBODY

The project site ultimately drains to the Mohawk River, located approximately 0.5 miles to the west of the site. See Attachment 1 for the Site Location Map showing the location of the Mohawk River in relation to the project site.

V. POTENTIAL IMPACTS TO NATURAL RESOURCES

There are no critical environmental areas, national or state register of historic places or state eligible sites, threatened or endangered species, 100-year flood plains, or remediation sites located in the project area according to the New York State EAF Mapping Tool (see Attachment 1 for the project Short EAF Form).

There are federally regulated freshwater wetlands located onsite according to the New York State EAF Mapping Tool. Construction on Lot 3 will fill in less than 1/10th of the 2.14 acres of federally regulated freshwater wetlands to create access to the lot from Seneca Road by using previously authorized ACOE Nationwide Permit #29. The ACOE requested an Endangered Species Habitat Suitability Assessment for the potential presence of the Northern Long Eared Bat. The assessment was completed and indicated no adverse impacts to the habitats from the proposed project. A copy of the study is included in Attachment 9.

The project area is in or adjacent to an area designated as sensitive for archaeological sites on the NYS Historic Preservation Office (SHPO) archeological site inventory according to the New York State EAF Mapping Tool. A Phase 1 Archeology Survey was conducted on the project area which indicated no adverse impact to historical sites from the proposed project. A letter concurring with this finding has been received from the NYS Historic Preservation Office (SHPO). A copy of the survey and letter are included in Attachment 9.

VI. SOILS INFORMATION

Soils were mapped using the NRCS Web Soil Survey. According to the NRCS Soil Mapper, soil at the project site and surrounding area, including upstream drainage areas, are considered hydrologic soil group C/D. For this analysis, hydrologic soil group C was used for soils in upland areas and hydrologic soil group D was used for soils in wetland areas where soils may be saturated for long periods. See Attachment 2 for the Soils Resource Report.

VII. OFFSITE HYDROLOGY

The project site is included in the drainage path for the Iroquois Middle School and the Berkley Avenue neighborhood watershed. Stormwater runoff from the upstream watershed flows to the northeast corner of the Iroquois Middle School property. Runoff then flows overland across a residential lot at 8 Seneca Road and enters two culverts (30" and 36") installed under Seneca Road, approximately 146 acres of contributing area. Runoff then flows northeasterly through the onsite federally regulated wetlands contained on the project site. The wetland area discharges to a 42" culvert installed under River Road, approximately 158 acres of contributing area and ultimately flows the Mohawk River to the east.

The project site is located downstream of a drainage challenged area as designated by the Town of Niskayuna. The challenged area is contained on or adjacent to the residential lot at 8 Seneca Road. The Town of Niskayuna has indicated to the applicant the challenged drainage condition may be a result of deposited silt and debris in the onsite federally regulated wetland area, impeding free drainage across the project area. The Town of Niskayuna has requested this report to study the impact of the silted in onsite wetland area on the capacity of the 30" and 36" culverts at Seneca Road (upstream).

The Town of Niskayuna Subdivision Regulations require a study of the impact of the proposed development on the existing culvert at River Road (downstream). The project will include post-construction stormwater management practices on each lot as detailed in Section VIII – Onsite Hydrology. The stormwater management practice on each lot has been sized to provide a zero net increase in runoff rates from the contributing areas to the watershed of the existing culvert at River Road, thus removing the influence of the development on the performance of the existing River Road culvert.

For the purposes of this report, the 30" and 36" culverts at Seneca Road will be Study Point 1 and the 42" culvert at River Road will be Study Point 2.

Using the established Study Points, drainage areas were delineated utilizing available online contour data from the NYS GIS data website and design information contained in the Stormwater Management Report and Stormwater Pollution Prevention Plan (Iroquois SWPPP Report) for the recent improvements at the Iroquois Middle School, prepared by Appel Osborne Landscape Architecture dated January 2023. Time of concentrations and runoff curve numbers were determined for the drainage areas. A model was developed using SCS TR-20 Method as provided by *HydroCAD version 10.20*. See Attachment 3 – Figure 3 (River Road Watershed – Post-Development) for the drainage map for the study areas.

A. Study Point 1 – 30" and 36" Culverts at Seneca Road

The drainage area for Study Point 1 was divided into several sub catchments that align with the Iroquois SWPPP Report because of the presence of buried stormwater chambers in the school parking areas. Curve numbers for the upstream contributing drainage areas were determined under total potential development permitted by the current zoning ordinance for the watershed. Although not a new culvert for the proposed subdivision, the 25-year, 24-hour storm event was used for Study Point 1 per the Town of Niskayuna Subdivision Regulations (Chapter 189, Article IV, Section 189-20-B). The precipitation value for the 25-year storm was obtained from the Extreme Precipitation Tables from the Northeast Regional Climate Center. See Attachment 4 (Table B) for the referenced table.

The anticipated flow for the 25-year storm at Study Point 1 is 291.2 cfs. See Attachment 6 for HydroCAD input and output for River Road Watershed (Study Point 1).

Two capacity checks were performed for the 30" and 36" culverts for the 25-year storm event. The first check included an unimproved channel between the Seneca Road culvert outlets and the River Road culvert inlet. See Figure A – Unimproved Channel at Project Site below.



Figure A – Unimproved Channel at Project Site

Utilizing the HY-8 Culvert Hydraulic Analysis Program from the US Department of Transportation Federal Highway Administration, the combined capacity of the 30" and 36" culverts at Seneca Road cannot adequately accommodate the 25-year storm event under current conditions. The available capacity of the 30" culvert is 30.94 cfs and the 36" culvert is 44.75 cfs for a total of 75.69 cfs. The available capacity is substantially below the 25-year flow of 291.2 cfs. The remaining flow, approximately 215.51 cfs, discharges over the road at the existing low point (~elevation 288.17 feet) northwest of the culverts. Peak headwater elevation is approximately 289.56 feet. See Figure B – Seneca Road Culverts Summary and Figure C – Seneca Road Profile.

Headwater	Total	36" Culvert	30" Culvert	Roadway
Elevation	Discharge	Discharge	Discharge	Discharge
(ft)	(cfs)	(cfs)	(cfs)	(cfs)
289.56	291.20	44.75	30.94	215.51

Figure B – Seneca Road Culverts Summary



See Attachment 5 for complete HY-8 input and output for the analysis.

The second check included an improved channel between the Seneca Road culvert outlets and the River Road culvert inlet. See Figure D – Improved Channel at Project Site below.



Utilizing the HY-8 Culvert Hydraulic Analysis Program from the US Department of Transportation Federal Highway Administration, the combined capacity of the 30" and 36" culverts at Seneca Road cannot adequately accommodate the 25-year storm event under improved conditions of the downstream channel. The available capacity of the 30" culvert increased to 32.78 cfs and the 36" culvert increased to 44.69 cfs for a total of 77.47 cfs (net increase of 1.78 cfs). The available capacity continues to be substantially below the 25-year flow of 291.2 cfs. The remaining flow, approximately 213.73 cfs, discharges over the road at the existing low point (~elevation 288.17 feet) northwest of the culverts. The peak headwater elevation is approximately 289.55 feet. See Figure E – Seneca Road Culverts Summary and Figure F – Seneca Road Profile below.

	Headwater	Total	36" Culvert	30" Culvert	Roadway
	Elevation	Discharge	Discharge	Discharge	Discharge
	(ft)	(cfs)	(cfs)	(cfs)	(cfs)
l	289.55	291.20	44.69	32.78	213.73

Figure E – Seneca Road Culverts Summary



Figure F – Seneca Road profile with culverts and headwater elevation, flow overtops roadway.

The 30" and 36" culverts at Seneca Road are undersized and should be replaced or improved to increase the available capacity. Since there is slight improvement in the capacity, improving the channel between Study Points 1 and 2 would be beneficial, but should be done in conjunction with replacement or improvement of the upstream, offsite culvert crossing at Seneca Road to increase the capacity of the crossing and help eliminate the drainage challenged area at 8 Seneca Road. The design of an appropriately sized culvert is outside the scope of this report.

As mentioned previously, the owner will create a permanent drainage easement along the south edge of lot 3 to benefit the Town of Niskayuna. The easement will provide approximately 1.7 acres of land to make improvements to or maintain existing drainage paths through the involved properties.

B. Study Point 2 – 42" Culvert at River Road

The capacity of the 42" culvert at River Road was studied for the 25-year and 100-year, 24-hour storm events. The 25-year storm event was studied to meet the requirements of the Subdivision Regulations (Town of Niskayuna Subdivision Regulations - Chapter 189, Article IV, Section 189-20-C requires the 5-year event, but this is the minimum per the Town Planning Staff). The 100-year storm event was studied to determine the peak headwater/flood elevation at the culvert and the impact of the headwater on Lots 1, 2, and 3. <u>Each analysis assumes that the culvert crossing at Seneca Road and the onsite wetlands adequately convey flows to the inlet of the River Road culvert.</u>

The precipitation values for the 25-year and 100-year storms were obtained from the Extreme Precipitation Tables from the Northeast Regional Climate Center. See Attachment 4 (Table B) for the referenced table.

The 25-year, 24-hour storm event was analyzed for Study Point 2. Per the regulations, the proposed development cannot overload an existing downstream drainage facility during the
analyzed storm event. As described previously, each lot will employ a stormwater management practice to provide a zero net increase in runoff rates from the contributing areas to the watershed of the existing culvert at River Road, thus removing the influence of the development on the performance of the existing River Road culvert.

The anticipated flow for the 25-year storm at Study Point 2 is 314.5 cfs. See Attachment 6 for HydroCAD input and output for River Road Watershed (Study Point 2).

Utilizing the HY-8 Culvert Hydraulic Analysis Program from the US Department of Transportation Federal Highway Administration, the 42" culvert at River Road cannot adequately accommodate the 25-year storm event. The available capacity of the 42" culvert is 125.11 cfs. The remaining flow, approximately 189.35 cfs, discharges over the road at the corner of River Road and Seneca Road at an existing low point (~elevation 288.66 feet). The peak headwater elevation is approximately 290.06 feet. See Figure G – Seneca Road Culverts Summary and Figure H – River Road Profile below.

Headwater	Total	42" Culvert	Roadway
Elevation	Discharge	Discharge	Discharge
(ft)	(cfs)	(cfs)	(cfs)
290.06	314.50	125.11	189.35

Figure G – Seneca Road Culverts Summary



Figure H – River Road profile with culvert and headwater elevation, flow overtops roadway.

The 100-year storm event was studied to determine the peak headwater/flood elevation at the River Road culvert and the impact of the headwater on Lots 1, 2, and 3.

The anticipated flow for the 100-year storm at Study Point 2 is 509.47 cfs. See Attachment 6 for HydroCAD input and output for River Road Watershed (Study Point 2).

Utilizing the HY-8 Culvert Hydraulic Analysis Program from the US Department of Transportation Federal Highway Administration, the 42" culvert at River Road cannot adequately accommodate the 100-year storm event. The available capacity of the 42" culvert is 127.85 cfs. The remaining flow, approximately 381.60 cfs, discharges over the road at the corner of River Road and Seneca Road at an existing low point (~elevation 288.66 feet). The peak headwater elevation is approximately 290.36 feet. See Figure J – Seneca Road Culverts Summary and Figure K – River Road Profile below.

Headwater Elevation (ft)	Total Discharge (cfs)	42" Culvert Discharge (cfs)	Roadway Discharge (cfs)
290.36	509.47	127.85	381.60
290.36	509.47	127.85	381.60

Figure J – Seneca Road Culverts Summary



Figure K – River Road profile with culvert and headwater elevation, flow overtops roadway.

The homes on lots 1 and 3 have a proposed finished floor elevation of 301.75. The basement floor elevations will be approximately 293.75 (typical 8' between finished floor and basement floor). The basement levels are approximately 3.4' above the 100-year headwater elevation of 290.36 feet. The home on lot 2 will have a proposed finished floor elevation of 299.40. The basement floor elevations will be approximately 291.40 (typical 8' between finished floor and basement floor and basement floor). The basement level is approximately 1' above the 100-year headwater elevation of 290.36 feet.

VIII. ONSITE HYDROLOGY

A. Lots 1, 2, & 3 Driveway Culverts

Each lot will have a new culvert installed at the location where the new driveway crosses an existing drainage path. Each culvert is sized for the 25-year storm event per the Town of Niskayuna Subdivision Regulations (Chapter 189, Article IV, Section 189-20-B). See below for a summary of calculations for each lot.

<u>Lot 2</u> – See Attachment 3 – Figure 1 (Lot 2 Culvert Watershed) for post-development drainage area map for Lot 2. The Rational Method will be utilized to determine the peak runoff rate to the driveway culvert at Lot 3.

- A = 0.95 acres
 - Lawn (2-7%, C= 0.20) = 0.68 acres
 - Impervious area (C=0.90) = 0.24 acres
 - Woods (C=0.15) = 0.03 acres

C = (0.68 ac x 0.20) + (0.24 ac x 0.90) + (0.03 ac x 0.15) / 0.95 ac = 0.36 / 0.95 = 0.38

Tc = 9.6 minutes, use 9 minutes

I = 5.24 in/hr (see Attachment 4, Table A for IDF curve)

Q= CIA = 0.38 x 5.24 x 0.95 = 1.89 cfs

Utilizing Mannings Equation, a 12" diameter HDPE culvert sloped at 1.7% has sufficient capacity (4.64 cfs) to convey the 25-year storm at the Lot 2 driveway culvert. See Attachment 5 for calculations. A 12" diameter HDPE culvert sloped at 1.7% will also be installed at the Lot 1 driveway, which has a smaller contributing drainage area than Lot 2.

Lot 3 – See Attachment 3 – Figure 2 (Lot 3 Culvert Watershed) for post-development drainage area map for Lot 3. The Rational Method will be utilized to determine the peak runoff rate to the driveway culvert at Lot 3.

A = 2.95 acres

- Lawn (2-7%, C= 0.20) = 1.41 acres
- Impervious area (C=0.90) = 0.50 acres
- Woods (C=0.15) = 1.04 acres

 $C = (1.41 \text{ ac } \times 0.20) + (0.50 \text{ ac } \times 0.90) + (1.04 \text{ ac } \times 0.15) / 2.95 \text{ ac } = 0.89 / 2.95 = 0.30$

Tc = 18.3 minutes, use 18 minutes

I = 3.80 in/hr (see Attachment 4, Table A for IDF curve)

Q= CIA = 0.30 x 3.80 x 2.95 = 3.36 cfs

Utilizing Mannings Equation, a 12" diameter HDPE culvert sloped at 2% has sufficient capacity (5.04 cfs) to convey the 25-year storm at the Lot 3 driveway culvert. See Attachment 5 for calculations.

See Attachment 8 for Drawing C103 showing locations of the three new culverts.

B. Post-Construction Stormwater Management

Stormwater Management Methodology

The stormwater design was prepared in accordance with the New York State Stormwater Management Manual. The following objectives were established in the development of the Stormwater Management Plan for the proposed project:

- 1. Reduce the total post-development peak discharges to pre-development discharges for the 1-YR, 10-YR, and 100-YR storms in accordance with the New York State Stormwater Management Manual.
- 2. Provide water quality (WQv) and runoff reduction (RRv) for the 90% storm event, Channel Protection (CPv), Overbank Flood Control (Qp), and Extreme Flood Control (Qf) in accordance with the New York State Stormwater Management Manual.

The total drainage area used for the analysis is 3.454 acres and includes some off-site areas. Table 1 below shows the pre-development and post-development areas for the total area.

Table 1. Summary of Total Aleas for Hydrologic Analysis				
PRE-DEVELOPMENT	POST-DEVELOPMENT			
(Nodes 1S and 2S)	(Nodes 3S, 4S, 5S, 6S,			
	and 7S)			
2.776 Ac.	1.554 Ac.			
0.545 Ac.	1.430 Ac.			
0.133 Ac.	0.470 Ac.			
3.454 Ac.	3.454 Ac.			
	PRE-DEVELOPMENT (Nodes 1S and 2S) 2.776 Ac. 0.545 Ac. 0.133 Ac. 3.454 Ac.			

Table 1: Summary of Total Areas for Hydrologic Analysis

For analyzing the development from this project, two (2) points of interest were established.

• Point of Interest #1 (POI #1)

POI#1 is the point where runoff from the site (Lots 1 and 2) is discharged directly to the wetland (to the south and east of the site). Table 1.1 below shows the pre-development and post-development areas for POI#1:

	PRE-DEVELOPMENT	POST-DEVELOPMENT	
	(Node 1S)	(Nodes 3S, 4S, and 5S)	
Woods, B-soils	0.974 Ac.	0.563 Ac.	
Lawn, B-soils	0.545 Ac.	0.844 Ac.	
Impervious	0.133 Ac.	0.245 Ac.	
Surfaces			
TOTAL ON-SITE	1.652 Ac.	1.652 Ac	
AREA			

Table 1.1: Summary of To	tal Areas for Hydro	ologic Analysis of POI#1
--------------------------	---------------------	--------------------------

To mitigate the increase in runoff, two (2) surface bioretention areas on Lots 1 and 2 have been designed to reduce both peak runoff rates and volumes in the post-development condition to acceptable pre-development levels prior to discharging from the site. This practice is described further in Post-Construction Stormwater Management Practices below.

• Point of Interest #2 (POI #2)

POI#2 is the point where runoff from the site (Lot 3) is directly discharged to the wetland (to the south and east of the site). Table 1.2 below shows the pre-development and post-development areas for POI#2:

	PRE-DEVELOPMENT (Node 2S)	POST-DEVELOPMENT (Node 6S and 7S)
Woods, B-soils	1.802 Ac.	0.991 Ac.
Lawn, B-soils	0 Ac.	0.586 Ac.
Impervious Surfaces	0 Ac.	0.225 Ac.
TOTAL ON-SITE AREA	1.802 Ac.	1.802 Ac

Table 1.2: Summary of Total Areas for Hydrologic Analysis of POI#2

To mitigate the increase in runoff, one (1) surface bioretention area on Lot 3 has been designed to reduce both runoff rates and volumes in the post-development condition to acceptable predevelopment levels prior to discharging from the site. This practice is described further in Post-Construction Stormwater Management Practices below.

Pre-Development Hydrology

Using the established points of interest, drainage areas were delineated. Time of concentrations and runoff curve numbers were determined for the drainage areas and input into HydroCAD. Pre-Development conditions were analyzed for the 1-, 10-, and 100-year frequency storm events using SCS TR-20 Method as provided by *HydroCAD version 10.20*. All program input and output can be found in Attachment 6 of this report.

Post-Development Hydrology

Post-Development drainage areas were established to the points of interest. For each point of interest, drainage areas were delineated to each of the proposed stormwater practices as well as any areas bypassing any stormwater practices. The runoff curve numbers, and time of concentration values were determined for the post-development conditions. A minimum time of concentration value of 6 minutes was utilized for the post-development calculations in the developed areas, due to the large amount of impervious area compared to the drainage area sizes. Again, by using the SCS TR-20 method as provided by *HydroCAD version 10.20*, the peak runoff rates were determined for the 1-, 10-, and 100-year frequency storm events.

Stormwater Objectives

The following section outlines how the stated stormwater objectives above were satisfied for the project.

Objective 1: Reduction of Peak Runoff Rates

Table 2 summarizes the results of the stormwater management analysis for the total site area concerning the pre-development and post-development runoff rate and volume control.

(HydroCAD Link Nodes 3Lv and 3Lc)				
	1-YR 10-YR		100-YR	
	Rate	Rate	Rate	
PRE-DEV	0.03 CFS	1.03 CFS	5.29 CFS	
POST-DEV	0.02 CFS	0.94 CFS	5.02 CFS	
% decrease	33.3%	8.7%	5.1%	

Table 2: Summary of Peak Flows at Study Point for Entire Site

As summarized in Table 2, the peak rates for all design storms for the project area have been reduced to less than pre-development levels. Therefore, Objective 1 has been satisfied.

To further demonstrate that the proposed development will not adversely impact the hydrology at each point of interest, Tables 2.1-2.2 summarize the results of the stormwater management analysis at each point of interest concerning the pre-development and post-development runoff rate and volume control.

	1-YR	10-YR	100-YR
	Rate	Rate	Rate
PRE-DEV	0.03 CFS	0.65 CFS	2.82 CFS
POST-DEV	0.02 CFS	0.55 CFS	2.82 CFS

Table 2.1: Summary of Peak Flows at POI#1 (HydroCAD Link Nodes 1Lv and 1Lc)

Table 2.2: Summary of Peak Flows at POI#2 (HydroCAD Link Nodes 2Lv and 2Lc)

	1-YR	10-YR	100-YR
	Rate	Rate	Rate
PRE-DEV	0.01 CFS	0.38 CFS	2.48 CFS
POST-DEV	0.01 CFS	0.39 CFS	2.21 cfs

As summarized by Table 2.1 there is no net increase in peak flows from pre-development to post-development. As summarized by Table 2.2, there is a very slight increase in flows in the post-development condition for the 10-YR storm compared to pre-development. The negligible increase in flows at POI#2 is due to the 1.338 acres of bypass areas that discharge directly to the wetland. The project has been designed to direct as much of the proposed impervious areas as practically possible into the proposed bio-retention areas. 97% of the new impervious surfaces in POI#2 have been directed to the surface bioretention basin at Lot 3. Table 2 demonstrates that the total flow to the wetland, for the 10-YR storm, is decreased in the post-development condition. Therefore, Objective 1 has been satisfied.

Objective 2: Water Quality Volume, Runoff Reduction Volume, and Compliance with Requirements of the NYS Stormwater Manual

• Water Quality Volume (WQv)/ Reduction Volume (RRv) Calculation

The design has made every possible attempt to direct the new impervious areas to one of the stormwater management practices. It was assumed that infiltration on the entire site is not feasible due to the proximity of the site to the freshwater wetlands. WQv will be achieved in the three (3) proposed surface bioretention areas on the site. The minimum RRv will be achieved within the proposed bio-retention areas. Refer to Attachment 7 of this report for supporting WQv and RRv calculations.

Required WQv:

WQv was calculated using the equation WQv = (P)(Rv)(A)/12 (from Section 4.2 of the New York State Stormwater Manual). The Required Water Quality Volume to each practice is as follows:

- Surface Bioretention Area Lot 1: 311 CF
- Surface Bioretention Area Lot 2: 390 CF
- Surface Bioretention Area Lot 3: 876 CF TOTAL for Site: 1,577 CF

Required RRv:

The minimum RRv for the site was calculated using the equation RRv = (P)(Rv)(Aic)(S)/12 (from Section 4.3 of the New York State Stormwater Manual).

P = 1.10''Aic = Total Area of New Impervious = 0.388 Ac. I = 100%Rv = 0.05 + 0.009(I) = 0.95S (for HSG B) = 0.40Min. RRv = (P)(Rv)(Aic)(S)/12 = 0.0756 Ac-ft = 589 CF

Table 3 below shows the WQv/RRv volumes achieved in each of these devices:

	RRv Achieved	Runoff not treated by RRv	Total WQv Achieved by		
Stormwater Practice	by Practice	but treated by WQv	Practice		
Bioretention Area Lot 1	176	135	311		
Bioretention Area Lot 2	264	126	390		
Bioretention Area Lot 3	638	238	876		
TOTALS	1,078 CF		1,577 CF		

Channel Protection Volume (CPv) Due to infiltration not being utilized for this practice, the proposed bio-retention structures have been oversized to store the 1-YR, 24-hour storm within the 6" of above ground ponding. Therefore, all of the runoff from a 1-YR 24-hour storm event will filter through the bio-retention area and will not utilize the overflow, which results in 0.00 CFS of runoff being discharged from the site. Therefore, we would consider the Cpv requirement to be met.

Total Overbank Flood Control Criteria (Qp)
 The post-development peak runoff rate during the 10-year storm event for the entire site has been reduced to less than pre-development levels. The flows are as follows:

Pre-Development (Node 3Lv) = 1.03 CFS Post-Development (Node 3Lc) = 0.94 CFS

Total Extreme Flood Control Criteria (Qf)
 The post-development peak runoff rate during the 100-year storm event for the entire site has been reduced to less than pre-development levels. The flows are as follows:

Pre-Development (Node 3Lv) = 5.29 CFS Post-Development (Node 3Lc) = 5.02 CFS

Post-Construction Stormwater Management Treatment Practices

Bioretention Areas Lot 1, Lot 2, and Lot 3:

Bio-Retention Areas #1, #2, and #3 have been designed to treat runoff from each developed lot of the proposed 3-lot subdivision. These areas consist of 6" of above ground/surface ponding, 18" max extended detention for extreme flood control, 30" of amended soil mix, and 6" of underdrain gravel. A 6" underdrain has been designed at the bottom of the underdrain gravel to allow the treated WQv to be conveyed to the proposed storm system. A 6" diameter riser, with a cut out low-flow orifice, has been designed as an overflow for each bio-retention area to allow the larger storm events to be conveyed overland to the wetland. The bio-retention areas will filter the runoff through the amended soil/filter media while promoting evapotranspiration through surface plantings. The following table shows the specific information for the three bioretention areas:

	BIO-RETENTION AREA LOT 1	BIO-RETENTION AREA LOT 2	BIO-RETENTION AREA LOT 3
TOP OF BERM (ELEV 'A')	300.50	292.50	296.50
OVERFLOW (ELEV 'B')	300.40	292.40	296.40
INLET (ELEV 'C')	299.50	291.50	295.50
BIO-RET SURFACE (ELEV 'D')	299.00	291.00	295.00
BOT. OF FILTER MEDIA (ELEV 'E')	296.50	288.50	292.50
BOT. OF UNDERDRAIN GRAVEL/ INV OUT (ELEV 'F')	296.00	288.00	292.00
SURFACE AREA OF FILTER MED.	417 SF	608 SF	1,450 SF

Pre-treatment: Runoff from the proposed roofs and driveways will flow overland into the bioretention areas. Pre-treatment will be achieved by stone drip edges along the end of pavement areas and grass-filter strips between the drip edges and the bottom of the basins.

Soil Restoration (per Section 5.1.6 of the NYS Stormwater Manual):

In accordance with Section 5.1.6 of the NYS Stormwater Manual, Soil Restoration techniques shall be applied in all proposed lawn areas where native soils have been compacted due to construction activities. Soil Restoration shall consist of the following procedure:

- Apply three (3) inches of compost to subsoil. Compost shall be aged, from plant derived materials, free of viable weed seeds, have no visible free water or dust produced when handling, pass through a 1/2" screen, and have a pH suitable to grow desired plants.
- 2) Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor mounted disc, or tiller, mixing, and circulating air and compost into subsoils. In area of proposed infiltration basin, install orange construction fencing around basin bottom to keep construction equipment from crossing the proposed basin bottom.
- 3) Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site.
- 4) Apply topsoil to a depth of 6 inches.
- 5) Vegetate as required by approved plan.

IX. EROSION AND SEDIMENT CONTROL

A. Erosion and Sediment Control Design

Typical Erosion and Sediment Control facilities, details, specifications, and construction sequencing are shown on the attached subdivision plans, see Attachment 8. These measures are intended to minimize the impact of the project on surrounding and downstream properties, both during and after construction. All erosion and sediment control measures will be installed in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Erosion and sediment control measures provided on the site include:

Temporary Measures

• <u>Silt Fence</u>

Silt Fence has been designed downslope of any disturbed areas and/or around the perimeter of the site unless another sediment trapping device is noted. The silt fence provided shall meet the specifications in the NYS E&S Manual. Silt fence shall remain in place until all upslope areas have achieved permanent stabilization.

- <u>Stabilized Construction Access</u> A Stabilized Construction Access will be provided to prevent the tracking of sediment onto River Road and Seneca Road. The stabilized construction access shall remain in place until the site has been stabilized and there is no potential for sediment to be tracked off-site from construction vehicles.
- Erosion Control Blanket

Erosion Control Blanket will be provided on all steep sloped areas and within conveyance swales. North American Green S75BN, or approved equivalent, shall be provided on all berms and disturbed/proposed 3:1 slopes or greater. North American Green S150BN shall be provided within all conveyance swales.

• <u>Stone Check Dams</u>

Stone check dams will be provided within proposed swales as shown on the plan. In addition, stone check dams will be provided at all inlet flared end sections.

Dust Control

Dust shall be controlled through the application of water, as required to prevent migration beyond the project limits. Control of dust remains an ongoing responsibility of the contractor until the site is fully stabilized.

<u>Concrete Truck Washout</u>

This is an approved location 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 the soil. The facility shall be lined to prevent runoff from leaching into the soil. Temporary signage shall be provided to direct drivers to the facility.

Vegetative Measures

• <u>Topsoiling/Seeding/Mulching</u>

All proposed grass/lawn areas will be covered with 4"-6" of topsoil to achieve final grade. These areas will be seeded and mulched within 48 hours of final grading per the details and specs shown on the plan.

B. General Housekeeping & Spill Prevention and Procedures

During Construction activities, the following materials are anticipated to be stored on-site:

• Construction Debris: Existing asphalt pavement/concrete debris, tress/vegetation, stumps, on-site fill and gravel materials.

- Construction/Building Materials: Roofing materials, steel and/or wood framing, building materials, concrete structures, riprap, gravel, sand, mulch, topsoil, asphalt sealants, piping
- Chemicals: Pesticides, fertilizers, herbicides
- Hazardous/Toxic Materials: Paints, caulks, sealants, solvents, petroleum products, wood preservatives, additives.

The Owner/ and Contractor shall implement general house-keeping measures, as listed below, during construction activities:

- All stockpile materials, including gravel, sand, topsoil, etc. shall be stored in designated stockpile areas located upslope of disturbed areas and shall be surrounded with the appropriate erosion and sedimentation controls to prevent pollution from the materials, including, but not limited to, silt fence around the perimeter of the stockpile areas. The Contractor shall notify the Qualified Inspector if additional stockpile areas or a different location is required.
- Construction materials, debris, and equipment shall be stored in designated staging areas as shown on the Erosion and Sediment Control Plan. The Contractor shall notify the Qualified Inspector if additional staging areas or a different location is required. The location of the storage/staging areas shall be located away from existing or proposed storm catch basins, pipe inlets, or other devices that have an adverse impact to water quality of the surrounding areas.
- Trash and waste materials shall be stored in the appropriate trash receptacles or containers.
- Chemicals, solvents, paints, sealants, fertilizers, and other toxic materials shall be contained and stored within the appropriate containers. Any runoff discovered to contain any of these materials must be disposed of at an approved NYSDEC off-site facility.
- All concrete trucks must utilize the concrete truck washout as described in Section IX-A. The Contractor shall locate the concrete washout area as shown on the Erosion and Sediment Control Plan. The Contractor shall notify the Qualified Inspector if a different location is required. The Contractor shall maintain the concrete washout area as noted on the plans.
- The Contractor shall ensure that spilled oil/grease from construction vehicles/equipment are cleaned up immediately. Any re-fueling of construction vehicles shall take place in an area designated by the Qualified Inspector/Qualified Professional, to be determined at the pre-construction meeting.
- On-site sanitary facilities shall be in an approved area by the Qualified Inspector/Qualified Professional, to be determined at the pre-construction meeting.

The Contractor shall immediately notify the Owner/Operator and the Town of Niskayuna Stormwater Management Officer or designated agent in the event of any non-stormwater related spill within two (2) hours of the spill release. All non-stormwater related spills more than two (2) gallons shall be reported to the NYSDEC Spill Hotline (1-800-457-7362) within two (2) hours of the spill release. The following spill prevention and procedures shall be implemented during construction:

- Comply with all manufacturer's recommended methods for spill cleanup and storage. All manufacturer spill prevention/cleanup recommended methods shall be posted onsite at an appropriate location, such as the construction trailer.
- A Spill Response Contractor shall be designated at the pre-construction meeting.
- All spill management personnel shall be properly qualified and shall wear appropriate hazardous waste clothing and safety appliances. The names of all qualified on-site

personnel to handle spill cleanups shall be posted on-site at an appropriate location, such as the construction trailer.

- The names and phone numbers of the Owner/Operator and the Town of Niskayuna Stormwater Management Officer or designated agent, as well as the NYSDEC Spill Hotline noted above, shall be posted on-site at an appropriate location, such as the construction trailer.
- All materials and equipment for spill cleanup shall be kept in the appropriate staging/storage area onsite.
- Once properly cleaned, all spill materials shall be stored in the appropriate containers and disposed of at an approved NYSDEC facility.

C. Maintenance, Inspections, and Record Keeping

The Owner/Operator and Contractor shall comply with all aspects of the following regarding maintenance, inspections, and record keeping:

- 1) New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-20-001). A copy of the General permit is included in Attachment 11.
- 2) New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.
- 3) New York State Stormwater Management Design Manual, dated January 2015 (or most current).
- 4) Town of Niskayuna Soil Erosion and Sediment Controls Regulations (Chapter 180 of the Town of Niskayuna Code).
- 5) The Owner/Operator shall certify their understanding of the permit conditions of the New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-20-001). A certification form is included in Attachment 10. A copy of the certification must remain with this report.
- 6) The Contactor shall make a certification statement before undertaking any land development activity. A certification form is included in Attachment 10. A copy of the certification must remain with this report.
- 7) A copy of the preparer's certification must remain with this report. A copy of certification is included in Attachment 10.
- 8) A copy of the Notice of Intent (NOI) and a brief description of the project shall be posted at the construction site in a prominent place for public viewing. A copy of SWPPP shall be retained at the site of the land development activity during construction from the beginning of construction activities to the date of final stabilization. The SWPPP and inspection reports are public documents that the operator must make available for inspection, review, and copying by any person within five business days of the operator receiving a written request by such person to review the SWPPP and/or the inspection reports. Copying of the documents will be done at the requester's expense. The Stormwater Management Officer or designated agent shall enter the property of the applicant as deemed necessary to make regular inspections to ensure the validity of the reports filed.
- 9) The Owner/Operator shall maintain a record of all inspection reports in a site logbook. The site logbook shall be maintained on site and be made available to the Town of Niskayuna upon request. The operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis.
- 10) The Town Stormwater Management Officer or designated agent is responsible for conducting inspections of stormwater management practices (permanent water quantity/quality improvement structures). The Owner/Operator shall submit as-built plans certified by a licensed/certified professional for any permanent stormwater

management practices located on site after final stabilization. The Owner/Operator shall also provide the owner(s) of each lot with a manual describing the operation and maintenance practices that will be necessary in order for the structure to function as designed. The Owner/Operator must also certify that the permanent structure(s) have been constructed as described in this SWPPP. This certification can be accomplished by providing the Town of Niskayuna with a copy of the notice of termination (NOT) filed with the NYSDEC.

11) Upon certification by the Owner/Operator's licensed/certified professional that a final site inspection has been conducted and that final stabilization has been accomplished and all stormwater management practices have been constructed as described in this SWPPP, the operator shall complete and file an NOT as prescribed by the NYSDEC and file a copy with the Town of Niskayuna to notify them that they have complied with item 10 above and that the project is complete.

Please Note:

- The Owner/Operator shall notify the Town of Niskayuna Stormwater Management Officer or designated agent at least 48-hours before the following project milestones:
 - Start of construction and initial installation of sediment and erosion controls.
 - Installation of sediment and erosion measures as site clearing and grading progresses.
 - Completion of site clearing.
 - Completion of rough grading.
 - Completion of final grading.
 - Close of the seasonal lad development activity.
 - Completion of final landscaping.
- SWPPP Inspections must be performed by a qualified professional (see below) and all reports must be available on-site.
- A pre-construction meeting with the Owner/Operator, Contactor, Town of Niskayuna Stormwater Management Officer or designated agent, and the qualified professional is required prior to any construction activities. A copy of the pre-construction meeting documents is included in Attachment 10.
- A site assessment that certifies erosion and sediment controls described in the SWPPP are in place prior to construction commencement must be completed by a qualified professional.

Requirements for the Qualified Inspector and Qualified Professional

The operator is responsible for designating a "qualified inspector" to perform the inspections for the site during construction. Per the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001), a qualified inspector means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individuals.

A qualified inspector can also be someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that the 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 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 has received four (4) hours of Department endorsed entity.

A qualified inspector can also be a person that meets the "qualified professional" qualifications in addition to the qualified inspector qualifications. Per the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001), a 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 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 (Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

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.

Inspections

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 to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved final stabilization, and all points of discharge. The qualified inspector shall prepare an inspection report subsequent to each and every inspection, including all aspects listed within Part IV.C.4 of the General Permit and the following information.

- On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next fourteen-day period.
- Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization.
- Indicate all disturbed site areas that have not undergone active site work during the previous fourteen-day period.
- Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of the sediment storage volume.
- Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier ordiversion systems and containment systems. Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water.
- All deficiencies that are identified with the implementation of the SWPPP.

Within one (1) business day of the completion of an inspection, the qualified inspector shall notify the owner or operator and appropriate contractor or subcontractor of any corrective actions that need to be taken. The contractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

During Construction, all inspections shall be conducted as follows:

- During construction and when soil disturbance is on-going, the qualified inspector shall conduct a site inspection at least every seven (7) calendar days and within 24-hours of the end of a storm event 0.5 inches or greater.
- When soil disturbances have been temporarily suspended (e.g., winter shutdown, etc.), and temporary measures have been applied to all disturbed areas, the qualified inspector shall conduct a site inspection at least once every thirty (30) calendar days.
- When soil disturbances have been stopped with partial project completion, the qualified inspector can stop conducting inspections if all areas disturbed as part 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. If soil disturbances are not resumed within two (2) years from the date of the shutdown, the owner or operator shall have the qualified inspector perform a final inspection and certify that all disturbed activities 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 conformation 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.

Construction duration inspections forms, monthly summary of site inspection activities forms, and the biorientation area construction inspection checklists are included in Attachment 10 of this report.

After construction, the bioretention areas on each lot shall be inspected on an annual basis to ensure that they are functioning properly. A copy of the bioretention area post-construction inspection checklist is included in Attachment 10 of this report.

Maintenance

• <u>Temporary Erosion and Sediment Control Practices</u>

Maintenance procedures and guidelines for specific temporary erosion and sediment control features are detailed in the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. The following detail maintenance procedures for temporary measures at a minimum:

Silt Fence:

Damaged silt fence shall be repaired as needed. Maintenance shall be performed, and sediment shall be removed when sediment is visibly built up behind the silt fence (typically to a height of about 1/2 the fence height).

> Inlet Protection:

Remove sediment as needed and maintain stone around inlet to ensure that runoff passes over the stone into the catch basin and not past the structure. After rain storms, remove sediment to provide accurate storage volume for subsequent rain storms. Fabric over catch basins shall be maintained to ensure that runoff is not bypassing the catch basin.

Stabilized Construction Access:

The stabilized construction access shall be maintained in a condition which will prevent tracking of sediment onto public right-of-way. When washing is required, it shall be done on the area stabilized with aggregate, which drains to an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or watercourses.

Stone Check Dams:

The stone check dams should be inspected after each runoff event. Correct all the damage immediately. If significant erosion has occurred between structures, a liner of stone or other suitable material should be installed in that portion of the channel or additional check dams added. Remove sediment accumulated behind the dam as needed to allow channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam.

Erosion Control Blanket:

Blanketed areas shall be inspected weekly and after each runoff event until perennial vegetation is established to a uniform 80% coverage throughout the blanketed area. Damaged or displaced blankets shall be restored or replaced within 2 calendar days.

Concrete Truck Washout:

- 1. 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.
- 2. Accumulated hardened material shall be removed when 75% of the storage capacity of the structure is filled. Any excess water shall be pumped into a containment vessel and properly disposed of off-site.
- 3. Dispose of the hardened material off-site in an approved construction/demolition landfill.
- 4. The plastic lining shall be replaced with each cleaning of the washout facility.
- 5. Inspect the project site frequently to ensure that no concrete discharges are taking place in non-designated areas.

Permanent Erosion and Sediment Control Practices and Post Construction Stormwater <u>Features</u>

Maintenance procedures and guidelines for specific permanent erosion and sediment control features are detailed in the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016 and the New York State Stormwater Management Design Manual, dated January 2015 (or most current). The following detail maintenance procedures for permanent measures at a minimum:

Infiltration Basin

During, construction, special care shall be taken not to allow sediment laden runoff from entering the infiltration basin. This can be achieved with diversion berms around the basin, and/or immediately stabilizing all disturbed areas draining directly to the facility. When the filtering capacity of the infiltration basin diminishes substantially (i.e., when water ponds on the surface of the area for more than 48 hours), maintenance is required. The top few inches of soil shall be removed and replaced with fresh material in order to promote infiltration. The design engineer shall monitor the basin as needed after any repairs to ensure that the design infiltration rate has been restored.

Rock Outlet Protection (Rip Rap Aprons):

Repairs shall be made as needed if scour beneath the riprap or dislodged stones are discovered during inspection.

> Drip Edges

The surface of drip edges shall be swept as needed to prevent leaves, debris, etc. from accumulating on the surface. If sediment is observed flowing over grassed areas, the stone shall be removed and clean, washed stone shall be installed.

> Catch Basins

Catch basins shall be inspected annually and shall be cleaned out when sediment has accumulated to within 6 inches of the invert out.

D. Winter Construction Standards and Procedures

Winter construction standards and erosion and sediment control measures apply to all construction activities involved with ongoing land disturbance and exposure between November 15th to the following April 1st.

Winter Construction Procedures

- 1. During winter construction, inspections by the On-Site Plan Coordinator shall occur daily when areas are un-stable, and weekly prior to any forecasted rain, thaw or spring melt when temporary stabilization is in place.
- 2. If the site will not have earth disturbing activities ongoing during the winter construction period, all bare exposed soil must be stabilized by establishing vegetation, straw or other acceptable mulch, matting, rock, or other approved material such as rolled erosion control products. Seeding of areas with mulch cover is preferred but seeding alone is not acceptable for proper stabilization.
- 3. Prepare a snow management plan with adequate storage for snow and control of melt water, requiring cleared snow to be stored in a manner not affecting ongoing construction activities.
- 4. Enlarge and stabilize access points to provide for snow management and stockpiling. Snow management activities must not destroy or degrade installed erosion and sediment control practices.
- 5. Limits of disturbance shall be moved or replaced to reflect boundary of winter work.
- 6. A minimum 25-ft buffer shall be maintained from all perimeter controls (such as silt fence) to allow for clearing and maintenance. Mark silt fence with tall stakes that are visible above the snow pack.
- 7. Snow is to be removed from all structural erosion and sediment control measures following each significant snowfall. No snow storage up-gradient of disturbance. No snow disposal in sediment ponds/basins. If necessary, snow/ice must be removed prior to stabilization of disturbed areas.
- 8. Edges of disturbed areas that drain to a waterbody within 100 ft shall have 2 rows of silt fence, 5 feet apart, installed on the contour.

- 9. Drainage structures shall be kept open and free of snow and ice dams. All debris, ice dams, or debris from plowing operations, that restrict the flow of runoff and meltwater, shall be removed.
- 10. Sediment barriers must be installed at all appropriate perimeter and sensitive locations. Silt fence and other practices requiring earth disturbance must be installed before the ground freezes.
- 11. Soil stockpiles must be protected by the use of established vegetation, anchored straw mulch, rolled stabilization matting, or other durable covering. A barrier must be installed at least 15 ft from the toe of the stockpile to prevent soil migration and to capture loose soil.
- 12. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures should be initiated by the end of the next business day and completed within three (3) days. Rolled erosion control blankets must be used on all slopes 3h:1v or steeper.
- 13. If straw mulch alone is used for temporary stabilization, it shall be applied at double the standard rate of 2 tons per acre, making the application rate 4 tons per acre. Other manufactured mulches should be applied at double the manufacturer's recommended rate.
- 14. To ensure adequate stabilization of disturbed soil in advance of a melt event, areas of disturbed soil should be stabilized at the end of each work day unless:
 - a. Work will resume within 24 hours in the same area and no precipitation is forecast or;
 - b. The work is in disturbed areas that collect and retain runoff, such as open utility trenches, foundation excavations, or water management areas.
- 15. Use stone paths to stabilize access perimeters of buildings under construction and areas where construction vehicle traffic is anticipated. Stone paths should be a minimum 10 ft in width but wider as necessary to accommodate equipment.
- 16. All erosion prevention and sediment control measures are to be in place by October 15, or if not possible, then prior to ground freeze.
- 17. Snow and ice shall be removed to less than 1" thickness prior to stabilization.

Attachment 1

Site Location Map Short Environmental Assessment Form



Short Environmental Assessment Form Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information

Name of Action or Project:

2890 River Road Subdivision

Project Location (describe, and attach a location map):

2890 River Rd, Niskayuna, New York 12309

Brief Description of Proposed Action:

The Applicant proposes a 4-lot subdivision of Town of Niskayuna tax parcels 51.-1-7.1 and 51.9-2-1.1. Each new lot will have a single family residence per lot. The proposed dwellings will be serviced by public water and sanitary sewer systems.

Name of Applicant or Sponsor: Telephone: 518-374-1461	Telephone: 518-374-1461								
RPL Family Trust E-Mail: ryan@midstateltd.co	om								
Address:									
2505 Whamer Lane									
City/PO: State: Z	Zip Code:	······							
Niskayuna NY 12	2309								
 Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? 	NO	YES							
If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.									
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval: US ACOE Nationwide Permit #29 for disturbance to freshwater	NO	YES							
wetlands.									
3. a. Total acreage of the site of the proposed action? 6. acres									
b. Total acreage to be physically disturbed? <u>2.00</u> acres									
or controlled by the applicant or project sponsor? 6.09 acres									
4. Check all land uses that occur on, are adjoining or near the proposed action:									
5. 🗌 Urban 🔲 Rural (non-agriculture) 🔲 Industrial 🔲 Commercial 🗹 Residential (suburba	ın)								
Forest Agriculture Aquatic Other(Specify):									
Parkland									

5. Is the proposed action,	NO	YES	N/A
a. A permitted use under the zoning regulations?			
b. Consistent with the adopted comprehensive plan?			
6. Is the proposed action consistent with the predominant character of the existing built or natural landscap	e?	NO	YES
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?		NO	YES
If Yes, identify:			
8. a. Will the proposed action result in a substantial increase in traffic above present levels?		NO	YES
b. Are public transportation services available at or near the site of the proposed action?			
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed			
action? 9 Does the proposed action meet or exceed the state energy code requirements?		NO	
If the proposed action will exceed requirements, describe design features and technologies:			IES
10. Will the proposed action connect to an existing public/private water supply?		NO	YES
If No, describe method for providing potable water:		,,	
11. Will the proposed action connect to existing wastewater utilities?		NO	YES
If No, describe method for providing wastewater treatment:			
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or dist	rict	NO	YES
which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on t	he		
State Register of Historic Places?	113		
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	<u>#</u> 2		
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?		NO	YES
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?			
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres:			
The proposed action does not plan to exceed 0.1 acre of freshwater wetland disturbance.			

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:		1
Shoreline Z Forest Agricultural/grasslands Early mid-successional		
✓ Wetland 🗌 Urban 🖌 Suburban		
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or	NO	YES
Federal government as threatened or endangered?		
16. Is the project site located in the 100-year flood plan?	NO	YES
17. Will the proposed action create storm water discharge, either from point or non-point sources?	NO	YES
If Yes,		
a. Will storm water discharges flow to adjacent properties?		
 Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: 		
Site storm water will be directed through roadside ditches and pipe conveyance systems to public storm sewer.		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? If Yes, explain the purpose and size of the impoundment:	NO	YES
		Ш
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility?	NO	YES
If Yes, describe:		
20.Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or	NO	YES
If Yes, describe:		
		Ш
I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BE MY KNOWLEDGE	ST OF	
Applicant/manage/server BPI Family Trust - Byan Lucy		
Signature: TressTree		_

EAF Mapper Summary Report



No

Part 1 / Question 15 [Threatened or Endangered Animal]

Part 1 / Question 16 [100 Year Flood Plain] No

Part 1 / Question 20 [Remediation Site] No

Attachment 2

Soils Resource Report



United States Department of Agriculture

NRCS

Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Schenectady County, New York



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/? cid=nrcs142p2 053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map	9
Legend	10
Map Unit Legend	11
Map Unit Descriptions	12
Schenectady County, New York	14
BvA—Burdett-Scriba channery silt loams, 0 to 3 percent slopes	14
Ce—Cheektowaga fine sandy loam	16
CIA—Claverack loamy fine sand, 0 to 3 percent slopes	17
CIB—Claverack loamy fine sand, 3 to 8 percent slopes	18
CoA—Colonie loamy fine sand, 0 to 3 percent slopes	20
CoC—Colonie loamy fine sand, 3 to 15 percent slopes	21
Cu—Cut and fill land	22
FL—Fluvaquents, loamy	24
IIA—Ilion silt loam, 0 to 3 percent slopes	25
IIB—Ilion silt loam, 3 to 8 percent slopes	27
Ma—Madalin silty clay loam, 0 to 3 percent slopes	28
MrD—Mardin gravelly silt loam, 15 to 25 percent slopes	30
NuB—Nunda channery silt loam, 3 to 8 percent slopes	31
NuC—Nunda channery silt loam, 8 to 15 percent slopes	33
OtB—Otisville gravelly loamy sand, 0 to 8 percent slopes	34
RhA—Rhinebeck silty clay loam, 0 to 3 percent slopes	35
RhB—Rhinebeck silty clay loam, 3 to 8 percent slopes	37
ScA—Scio silt loam, 0 to 3 percent slopes	38
ScB—Scio silt loam, 3 to 8 percent slopes	39
UnB—Unadilla silt loam, 0 to 8 percent slopes	41
References	43

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Image and interest (AOI) Soil Area Area of Interest (AOI) Image and interest (AOI) Image and Story Spot Soil Map Unit Polygons Image and Story Spot Very Story Spot Soil Map Unit Lines Image and Story Spot Very Story Spot Soil Map Unit Lines Image and Story Spot Very Story Spot Soil Map Unit Points Image and C Very Story Spot Soil Map Unit Lines Image and C Image and C Soil Map Unit Points Image and C Image and C Point Features Very Story Spot Image and C Point Features Image and C Image and C Point Features Image and C Image and C Borrow Pit Image and C Image and C Clay Spot Image and C Image and C	MAP INFORMATION	The soil surveys that comprise your AOI were mapped 1:15,800.	ot Warning: Soil Map may not be valid at this scale.	Enlargement of maps beyond the scale of mapping can misunderstanding of the detail of mapping and accuracy	aatures line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more	scale.		Please fely on the par scale on each map sileet for map measurements.	Ways	Source of Map: Natural Resources Conservation Servic Web Soil Survey URL:	Coordinate System: Web Mercator (EPSG:3857)	Maps from the Web Soil Survey are based on the Web M	projection, which preserves direction and shape but disto	about and and and area. A projection inta preserves area, such aphy Albers equal-area conic projection, should be used if mor	accurate calculations of distance or area are required.	This product is generated from the USDA-NRCS certified	of the version date(s) listed below.	Soil Survey Area: Schenectady County, New York	Survey Area Data: Version 22, Sep 5, 2023	Soil map units are labeled (as space allows) for map scal	1:50,000 or larger.	Date(s) aerial images were photographed: Aug 15, 202	8, 2021
MAP LF erest (AOI) Area of Interest (AOI) Soil Map Unit Polygons Soil Map Unit Lines Soil Map Unit Points Soil Map Unit Points Soil Map Unit Points Point Features Blowout Borrow Pit Closed Depression Gravelly Spot Closed Depression Gravelly Spot Closed Depression Gravelly Spot Closed Depression Gravelly Spot Lava Flow Marsh or swamp Mine or Quarry Miscellaneous Water Perennial Water Perennial Water Perennial Water Perennial Water Sandy Spot Sandy Spot Sandy Spot Sinkhole Sinkhole Sinkhole			Spot		Line Fea				tate Highwa	outes	Roads	Roads		Photograp									
	EGEND	👯 Spoil Area 👌	Very Stony	v ⇒ Other	Special	Water Features	Transnortation	Rails	I Inters	US Re	Major	Local	Background	Aerial									

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BvA	Burdett-Scriba channery silt loams, 0 to 3 percent slopes	17.6	9.4%
Се	Cheektowaga fine sandy loam	8.6	4.6%
CIA	Claverack loamy fine sand, 0 to 3 percent slopes	2.8	1.5%
CIB	Claverack loamy fine sand, 3 to 8 percent slopes	8.0	4.3%
СоА	Colonie loamy fine sand, 0 to 3 percent slopes	1.7	0.9%
CoC	Colonie loamy fine sand, 3 to 15 percent slopes	1.2	0.6%
Cu	Cut and fill land	10.5	5.6%
FL	Fluvaquents, loamy	1.6	0.8%
IIA	Ilion silt loam, 0 to 3 percent slopes	6.6	3.5%
IIB	Ilion silt loam, 3 to 8 percent slopes	2.2	1.2%
Ма	Madalin silty clay loam, 0 to 3 percent slopes	6.9	3.7%
MrD	Mardin gravelly silt loam, 15 to 25 percent slopes	4.7	2.5%
NuB	Nunda channery silt loam, 3 to 8 percent slopes	57.7	30.9%
NuC	Nunda channery silt loam, 8 to 15 percent slopes	1.8	1.0%
OtB	Otisville gravelly loamy sand, 0 to 8 percent slopes	7.5	4.0%
RhA	Rhinebeck silty clay loam, 0 to 3 percent slopes	2.8	1.5%
RhB	Rhinebeck silty clay loam, 3 to 8 percent slopes	19.2	10.3%
ScA	Scio silt loam, 0 to 3 percent slopes	5.1	2.7%
ScB	Scio silt loam, 3 to 8 percent slopes	18.3	9.8%
UnB	Unadilla silt loam, 0 to 8 percent slopes	2.1	1.1%
Totals for Area of Interest		186.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas
shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Schenectady County, New York

BvA—Burdett-Scriba channery silt loams, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: bd3h Elevation: 210 to 1,600 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Prime farmland if drained

Map Unit Composition

Burdett and similar soils: 50 percent *Scriba and similar soils:* 30 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Burdett

Setting

Landform: Till plains, hills, drumlinoid ridges Landform position (two-dimensional): Footslope, summit Landform position (three-dimensional): Base slope Down-slope shape: Concave Across-slope shape: Linear Parent material: A thin silt mantle overlying till that is strongly influenced by shale

Typical profile

H1 - 0 to 9 inches: channery silt loam
H2 - 9 to 16 inches: channery silt loam
H3 - 16 to 44 inches: very gravelly silty clay loam
H4 - 44 to 60 inches: very gravelly silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3w Hydrologic Soil Group: C/D Ecological site: F101XY013NY - Moist Till Hydric soil rating: No

Description of Scriba

Setting

Landform: Till plains, drumlins

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Loamy till dominated by sandstone, with lesser amounts of limestone and shale

Typical profile

H1 - 0 to 7 inches: channery silt loam H2 - 7 to 15 inches: channery silt loam Bx - 15 to 43 inches: very gravelly loam C - 43 to 60 inches: very gravelly loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 12 to 18 inches to fragipan
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3w Hydrologic Soil Group: D Ecological site: F101XY013NY - Moist Till Hydric soil rating: No

Minor Components

Darien

Percent of map unit: 5 percent Hydric soil rating: No

Varick

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Angola

Percent of map unit: 5 percent Hydric soil rating: No

llion

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Ce—Cheektowaga fine sandy loam

Map Unit Setting

National map unit symbol: bd3p Elevation: 200 to 800 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Cheektowaga and similar soils: 75 percent Minor components: 25 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cheektowaga

Setting

Landform: Depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Concave Parent material: Sandy deltaic deposits over clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 18 inches: loamy fine sand
H3 - 18 to 26 inches: loamy fine sand
H4 - 26 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4w Hydrologic Soil Group: C/D Ecological site: F101XY007NY - Wet Outwash Hydric soil rating: Yes

Minor Components

Junius

Percent of map unit: 5 percent Hydric soil rating: No

Claverack

Percent of map unit: 5 percent Hydric soil rating: No

Granby

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Madalin

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Palms

Percent of map unit: 5 percent Landform: Marshes, swamps Hydric soil rating: Yes

CIA—Claverack loamy fine sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: bd3s Elevation: 600 to 1,800 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: All areas are prime farmland

Map Unit Composition

Claverack and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Claverack

Setting

Landform: Lake plains Landform position (two-dimensional): Summit Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Convex Parent material: Sandy glaciolacustrine deposits, derived primarily from noncalcareous sandstone or granite, that overlie clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 11 inches: loamy fine sand H2 - 11 to 30 inches: loamy fine sand H3 - 30 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: C/D Ecological site: F101XY006NY - Moist Outwash Hydric soil rating: No

Minor Components

Plainfield

Percent of map unit: 5 percent *Hydric soil rating:* No

Cheektowaga

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Elnora

Percent of map unit: 5 percent *Hydric soil rating:* No

Colonie

Percent of map unit: 5 percent Hydric soil rating: No

Junius

Percent of map unit: 5 percent Hydric soil rating: No

CIB—Claverack loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bd3t

Elevation: 600 to 1,800 feet *Mean annual precipitation:* 38 to 44 inches *Mean annual air temperature:* 45 to 48 degrees F *Frost-free period:* 110 to 170 days *Farmland classification:* All areas are prime farmland

Map Unit Composition

Claverack and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Claverack

Setting

Landform: Lake plains Landform position (two-dimensional): Summit Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Convex Parent material: Sandy glaciolacustrine deposits, derived primarily from noncalcareous sandstone or granite, that overlie clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 11 inches: loamy fine sand

H2 - 11 to 30 inches: loamy fine sand

H3 - 30 to 60 inches: silty clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 24 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Available water supply, 0 to 60 inches: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: C/D Ecological site: F101XY006NY - Moist Outwash Hydric soil rating: No

Minor Components

Junius

Percent of map unit: 5 percent Hydric soil rating: No

Cheektowaga

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Colonie

Percent of map unit: 5 percent *Hydric soil rating:* No

Plainfield

Percent of map unit: 5 percent *Hydric soil rating:* No

Elnora

Percent of map unit: 5 percent Hydric soil rating: No

CoA—Colonie loamy fine sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: bd3v Elevation: 150 to 1,000 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: All areas are prime farmland

Map Unit Composition

Colonie and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Colonie

Setting

Landform: Deltas, beach ridges Landform position (two-dimensional): Summit Landform position (three-dimensional): Tread Down-slope shape: Convex Across-slope shape: Convex Parent material: Sandy glaciofluvial or eolian deposits

Typical profile

H1 - 0 to 6 inches: loamy fine sand *H2 - 6 to 70 inches:* fine sand *H3 - 70 to 110 inches:* fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2s Hydrologic Soil Group: A Ecological site: F101XY005NY - Dry Outwash Hydric soil rating: No

Minor Components

Plainfield

Percent of map unit: 5 percent *Hydric soil rating:* No

Elnora

Percent of map unit: 5 percent Hydric soil rating: No

Junius

Percent of map unit: 5 percent Hydric soil rating: No

Howard

Percent of map unit: 5 percent Hydric soil rating: No

Unadilla

Percent of map unit: 5 percent Hydric soil rating: No

CoC—Colonie loamy fine sand, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1qcvw Elevation: 150 to 1,000 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Colonie and similar soils: 75 percent Minor components: 25 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colonie

Setting

Landform: Deltas, beach ridges Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Tread *Down-slope shape:* Convex *Across-slope shape:* Convex *Parent material:* Sandy glaciofluvial or eolian deposits

Typical profile

H1 - 0 to 6 inches: loamy fine sand *H2 - 6 to 70 inches:* fine sand

H3 - 70 to 110 inches: fine sand

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: A Ecological site: F101XY005NY - Dry Outwash Hydric soil rating: No

Minor Components

Plainfield

Percent of map unit: 5 percent Hydric soil rating: No

Elnora

Percent of map unit: 5 percent Hydric soil rating: No

Howard

Percent of map unit: 5 percent Hydric soil rating: No

Nunda

Percent of map unit: 5 percent Hydric soil rating: No

Junius

Percent of map unit: 5 percent Hydric soil rating: No

Cu—Cut and fill land

Map Unit Setting

National map unit symbol: 1vggp

Elevation: 180 to 1,380 feet *Mean annual precipitation:* 38 to 44 inches *Mean annual air temperature:* 45 to 48 degrees F *Frost-free period:* 110 to 170 days *Farmland classification:* Not prime farmland

Map Unit Composition

Udorthents and similar soils: 70 percent *Minor components:* 30 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Udorthents

Typical profile

H1 - 0 to 4 inches: gravelly loam *H2 - 4 to 70 inches:* very gravelly loam

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7s Hydrologic Soil Group: A Hydric soil rating: No

Minor Components

Sun

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Angola

Percent of map unit: 5 percent *Hydric soil rating:* No

llion

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Raynham

Percent of map unit: 5 percent Hydric soil rating: No

Hudson

Percent of map unit: 5 percent Hydric soil rating: No Alton

Percent of map unit: 5 percent *Hydric soil rating:* No

FL—Fluvaquents, loamy

Map Unit Setting

National map unit symbol: bd44 Elevation: 300 to 1,800 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Not prime farmland

Map Unit Composition

Fluvaquents and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Fluvaquents

Setting

Landform: Flood plains Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium with highly variable texture

Typical profile

H1 - 0 to 5 inches: gravelly silt loam *H2 - 5 to 70 inches:* very gravelly silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 19.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: FrequentNone
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 5w Hydrologic Soil Group: B/D Ecological site: F101XY003NY - Low Floodplain Depression Hydric soil rating: Yes

Minor Components

Wayland

Percent of map unit: 5 percent Landform: Flood plains Hydric soil rating: Yes

Granby

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Teel

Percent of map unit: 5 percent Hydric soil rating: No

Hamlin

Percent of map unit: 5 percent Hydric soil rating: No

Saprists

Percent of map unit: 3 percent Landform: Swamps, marshes Hydric soil rating: Yes

Aquents

Percent of map unit: 2 percent Landform: Flood plains Hydric soil rating: Yes

IIA—Ilion silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: bd4t Elevation: 600 to 1,800 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Ilion and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Ilion

Setting

Landform: Depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Concave Across-slope shape: Concave Parent material: Loamy till derived from calcareous dark shale

Typical profile

Ap - 0 to 9 inches: silt loam E - 9 to 14 inches: silty clay loam 2B - 14 to 39 inches: channery silty clay loam 3C - 39 to 60 inches: gravelly silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4w Hydrologic Soil Group: C/D Ecological site: F101XY014NY - Wet Till Depression Hydric soil rating: Yes

Minor Components

Madalin

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Fonda

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Varick

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Darien

Percent of map unit: 5 percent Hydric soil rating: No

Scriba

Percent of map unit: 5 percent Hydric soil rating: No

IIB—Ilion silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bd4v Elevation: 600 to 1,800 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Ilion and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Ilion

Setting

Landform: Depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Concave Across-slope shape: Concave Parent material: Loamy till derived from calcareous dark shale

Typical profile

Ap - 0 to 9 inches: silt loam

E - 9 to 14 inches: silty clay loam

- 2B 14 to 39 inches: channery silty clay loam
- 3C 39 to 60 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4w Hydrologic Soil Group: C/D Ecological site: F101XY014NY - Wet Till Depression Hydric soil rating: Yes

Minor Components

Burdett

Percent of map unit: 5 percent Hydric soil rating: No

Madalin

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Fonda

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Varick

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Scriba

Percent of map unit: 5 percent Hydric soil rating: No

Ma—Madalin silty clay loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2spjz Elevation: 330 to 1,200 feet Mean annual precipitation: 31 to 57 inches Mean annual air temperature: 41 to 50 degrees F Frost-free period: 100 to 190 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Madalin and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Madalin

Setting

Landform: Depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Concave Parent material: Brown clayey glaciolacustrine deposits derived from calcareous shale

Typical profile

Ap - 0 to 7 inches: silty clay loam Bg - 7 to 9 inches: silty clay loam Btg1 - 9 to 21 inches: clay Btg2 - 21 to 30 inches: silty clay Cg - 30 to 79 inches: stratified silt to clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 7 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4w Hydrologic Soil Group: C/D Ecological site: F101XY010NY - Wet Lake Plain Depression Hydric soil rating: Yes

Minor Components

Rhinebeck

Percent of map unit: 5 percent Landform: Lake plains Landform position (two-dimensional): Footslope Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: No

Fonda

Percent of map unit: 4 percent Landform: Depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: Yes

Canandaigua

Percent of map unit: 4 percent Landform: Depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: Yes

Barre

Percent of map unit: 2 percent Landform: Depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope, tread Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: Yes

MrD—Mardin gravelly silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: bd5m Elevation: 800 to 1,800 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Not prime farmland

Map Unit Composition

Mardin and similar soils: 75 percent Minor components: 25 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mardin

Setting

Landform: Till plains, hills, drumlinoid ridges Landform position (two-dimensional): Summit Landform position (three-dimensional): Side slope Down-slope shape: Concave Across-slope shape: Convex Parent material: Loamy till derived mainly from acid sedimentary rock

Typical profile

H1 - 0 to 2 inches: gravelly silt loam
H2 - 2 to 27 inches: gravelly loam
H3 - 27 to 47 inches: gravelly silt loam
H4 - 47 to 60 inches: gravelly silt loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 18 to 27 inches to fragipan
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: C Ecological site: F140XY024NY - Moist Dense Till Hydric soil rating: No

Minor Components

Unnamed soils Percent of map unit: 5 percent

Nunda

Percent of map unit: 5 percent Hydric soil rating: No

Nassau

Percent of map unit: 5 percent Hydric soil rating: No

Lordstown

Percent of map unit: 5 percent Hydric soil rating: No

Broadalbin

Percent of map unit: 5 percent Hydric soil rating: No

NuB—Nunda channery silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bd61 Elevation: 400 to 1,600 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: All areas are prime farmland

Map Unit Composition

Nunda and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Nunda

Setting

Landform: Till plains, hills, drumlinoid ridges Landform position (two-dimensional): Summit Landform position (three-dimensional): Crest Down-slope shape: Concave Across-slope shape: Convex

Parent material: A silty mantle over loamy till derived from calcareous shale and siltstone

Typical profile

- H1 0 to 7 inches: channery silt loam
- H2 7 to 25 inches: channery silt loam
- H3 25 to 42 inches: gravelly silty clay loam
- H4 42 to 60 inches: gravelly loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 15 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: C/D Ecological site: F101XY013NY - Moist Till Hydric soil rating: No

Minor Components

Mohawk

Percent of map unit: 5 percent Hydric soil rating: No

Burdett

Percent of map unit: 5 percent Hydric soil rating: No

Lansing

Percent of map unit: 5 percent Hydric soil rating: No

Darien

Percent of map unit: 5 percent Hydric soil rating: No

Angola

Percent of map unit: 5 percent Hydric soil rating: No

NuC—Nunda channery silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: bd62 Elevation: 400 to 1,600 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Nunda and similar soils: 75 percent Minor components: 25 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nunda

Setting

Landform: Till plains, hills, drumlinoid ridges Landform position (two-dimensional): Summit Landform position (three-dimensional): Crest Down-slope shape: Concave Across-slope shape: Convex Parent material: A silty mantle over loamy till derived from calcareous shale and siltstone

Typical profile

- H1 0 to 7 inches: channery silt loam
- H2 7 to 25 inches: channery silt loam
- H3 25 to 42 inches: gravelly silty clay loam
- H4 42 to 60 inches: gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 15 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C/D Ecological site: F101XY013NY - Moist Till Hydric soil rating: No

Minor Components

Mohawk

Percent of map unit: 5 percent Hydric soil rating: No

Burdett

Percent of map unit: 5 percent Hydric soil rating: No

Darien

Percent of map unit: 5 percent *Hydric soil rating:* No

Angola

Percent of map unit: 5 percent Hydric soil rating: No

Lansing

Percent of map unit: 5 percent Hydric soil rating: No

OtB—Otisville gravelly loamy sand, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: bd65 Elevation: 260 to 740 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Not prime farmland

Map Unit Composition

Otisville and similar soils: 80 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Otisville

Setting

Landform: Terraces, outwash plains, deltas Landform position (two-dimensional): Summit Landform position (three-dimensional): Tread Down-slope shape: Convex Across-slope shape: Convex Parent material: Sandy and gravelly glaciofluvial deposits

Typical profile

H1 - 0 to 7 inches: gravelly loamy sand
H2 - 7 to 36 inches: very gravelly loamy sand
H3 - 36 to 60 inches: stratified very gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4s Hydrologic Soil Group: A Ecological site: F144AY022MA - Dry Outwash Hydric soil rating: No

Minor Components

Colonie

Percent of map unit: 5 percent Hydric soil rating: No

Elnora

Percent of map unit: 5 percent Hydric soil rating: No

Plainfield

Percent of map unit: 5 percent Hydric soil rating: No

Alton

Percent of map unit: 5 percent Hydric soil rating: No

RhA—Rhinebeck silty clay loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: bd6p Elevation: 80 to 1,000 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Prime farmland if drained

Map Unit Composition

Rhinebeck and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Rhinebeck

Setting

Landform: Lake plains Landform position (two-dimensional): Footslope Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Linear Parent material: Clayey and silty glaciolacustrine deposits

Typical profile

H1 - 0 to 13 inches: silty clay loam

- H2 13 to 28 inches: silty clay
- H3 28 to 70 inches: stratified silt loam to clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3w Hydrologic Soil Group: C/D Ecological site: F101XY009NY - Moist Lake Plain Hydric soil rating: No

Minor Components

Churchville

Percent of map unit: 5 percent Hydric soil rating: No

Odessa

Percent of map unit: 5 percent Hydric soil rating: No

Hudson

Percent of map unit: 5 percent Hydric soil rating: No

Madalin

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Fonda

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

RhB—Rhinebeck silty clay loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bd6q Elevation: 80 to 1,000 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: Prime farmland if drained

Map Unit Composition

Rhinebeck and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Rhinebeck

Setting

Landform: Lake plains Landform position (two-dimensional): Footslope Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Linear Parent material: Clayey and silty glaciolacustrine deposits

Typical profile

H1 - 0 to 13 inches: silty clay loam H2 - 13 to 28 inches: silty clay H3 - 28 to 70 inches: stratified silt loam to clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3w Hydrologic Soil Group: C/D Ecological site: F101XY009NY - Moist Lake Plain Hydric soil rating: No

Minor Components

Fonda

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Churchville

Percent of map unit: 5 percent *Hydric soil rating:* No

Hudson

Percent of map unit: 5 percent Hydric soil rating: No

Odessa

Percent of map unit: 5 percent Hydric soil rating: No

Madalin

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

ScA—Scio silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: bd6s Elevation: 100 to 1,000 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: All areas are prime farmland

Map Unit Composition

Scio and similar soils: 80 percent Minor components: 20 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scio

Setting

Landform: Lake plains Landform position (two-dimensional): Summit Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Convex Parent material: Glaciolacustrine deposits, eolian deposits, or old alluvium, comprised mainly of silt and very fine sand

Typical profile

H1 - 0 to 10 inches: silt loam

H2 - 10 to 33 inches: silt loam

H3 - 33 to 60 inches: stratified very fine sandy loam to silt loam to loamy very fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: B/D Ecological site: F101XY006NY - Moist Outwash Hydric soil rating: No

Minor Components

Raynham

Percent of map unit: 5 percent *Hydric soil rating:* No

Unadilla

Percent of map unit: 5 percent Hydric soil rating: No

Rhinebeck

Percent of map unit: 5 percent Hydric soil rating: No

Elnora

Percent of map unit: 5 percent Hydric soil rating: No

ScB—Scio silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bd6t Elevation: 100 to 1,000 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: All areas are prime farmland

Map Unit Composition

Scio and similar soils: 80 percent *Minor components:* 20 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Scio

Setting

Landform: Lake plains Landform position (two-dimensional): Summit Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Convex Parent material: Glaciolacustrine deposits, eolian deposits, or old alluvium, comprised mainly of silt and very fine sand

Typical profile

H1 - 0 to 10 inches: silt loam

H2 - 10 to 33 inches: silt loam

H3 - 33 to 60 inches: stratified very fine sandy loam to silt loam to loamy very fine sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: B/D Ecological site: F101XY006NY - Moist Outwash Hydric soil rating: No

Minor Components

Raynham

Percent of map unit: 5 percent Hydric soil rating: No

Unadilla

Percent of map unit: 5 percent Hydric soil rating: No

Colonie

Percent of map unit: 5 percent Hydric soil rating: No Hudson

Percent of map unit: 5 percent *Hydric soil rating:* No

UnB—Unadilla silt loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: bd71 Elevation: 600 to 1,800 feet Mean annual precipitation: 38 to 44 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 170 days Farmland classification: All areas are prime farmland

Map Unit Composition

Unadilla and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Unadilla

Setting

Landform: Lake plains Landform position (two-dimensional): Summit Landform position (three-dimensional): Tread Down-slope shape: Convex Across-slope shape: Convex Parent material: Glaciolacustrine deposits, eolian deposits, or old alluvium, comprised mainly of silt and very fine sand

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 28 inches: very fine sandy loam
C - 28 to 50 inches: very fine sandy loam
2C - 50 to 60 inches: stratified very gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e Hydrologic Soil Group: B Ecological site: F101XY008NY - Well Drained Lake Plain Hydric soil rating: No

Minor Components

Scio

Percent of map unit: 5 percent Hydric soil rating: No

Raynham

Percent of map unit: 5 percent Hydric soil rating: No

Howard

Percent of map unit: 5 percent Hydric soil rating: No

Hamlin

Percent of map unit: 5 percent *Hydric soil rating:* No

Hudson

Percent of map unit: 5 percent Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ home/?cid=nrcs142p2 053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/ detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/ nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/? cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Attachment 3

Drainage Area Maps

Figure 1 – Lot 2 Culvert Drainage Area Map Figure 2 – Lot 3 Culvert Drainage Area Map Figure 3 – River Road Watershed

Figure 4 – 2890 River Road Subdivision – Pre-Development Drainage Area Map Figure 5 – 2890 River Road Subdivision – Post-Development Drainage Area Map



		STUD	
<u>Plan view</u> 11 drainage	LOT 3 ARFA	LEGEND	SCALE: 1" = 125'
SURFACE CONDITIONS LAWN IMPERVIOUS WOODS TIME OF CONCENTRATION 1. 100' LAWN SHEET FLOW AT 2. 275' GRASS PARKLAND SH 3. 335' GRASS SWALE SHALLO	$= 2.95 \text{ AC} \\ = 1.41 \text{ AC} \\ = 0.50 \text{ AC} \\ = 1.04 \text{ AC} \\ = 18.3 \text{ MIN} \\ \hline 1\% \\ \text{ALLOW CONCENTRATED FLOW AT 2.6\% } \\ \text{W CONCENTRATED FLOW AT 3.3\%} $		LAWN WOODS WATERSHED BOUNDARY TIME OF CONCENTRATION WETLAND BOUNDARY STUDY POINT
208 Flynn Ave, Suite 2A, Burlington, VT 05401 85 Mechanic St, Suite E2-3, Lebanon, NH 03766 414 Union St, Schenectady, NY 12305	Sheet Title: LOT 3 CULVERT DRAINA Project Title: 2890 RIVER ROAD MINOR TOWN OF NISKAYI	GE AREA MAP SUBDIVISION NA, NY SEV Project # Drawn By: Checked By: Scale: Date: Date:	Eigure: HMB MHD AS NOTED 12/6/2023




PLOTTED: 12/7/2023 12:15 PM

S/PROJECTS/0-2022/22323352 NY 2890 RIVER ROAD/HYDRO/DWG/SHEETS/22352 DRAINAGE AREAS - POST CONSTRUCTION.DWG



PLOTTED: 12/7/2023 12:15 PM

S/PROJECTS/0-2022/222552 DIV 2890 RIVER ROAD/H/DRO/DWG/S/DECTS/22355 DRAINAGE AREAS - POST CONSTRUCTION.DWG

Attachment 4

Extreme Precipitation Values

Table A – Intensity Frequency Duration Curve (25-year) Table B – Extreme Precipitation Tables

x						Lot 2									Lot 3																						
Intensit	(in/hr)	6.65	6.12	5.74	5.46	5.24	5.06	4.83	4.63	4.47	4.32	4.20	4.05	3.92	3.80	3.70	3.60	3.51	3.44	3.37	3.30	3.24	3.19	3.13	3.09	3.04	3.00	2.93	2.87	2.81	2.76	2.71	2.66	2.61	2.57	2.53	2.49
Time	(hours)	S*	9	7*	8°	9*	*01	*11	12	13*	14*	15*	16*	+11*	18*	*61	20*	21*	22*	23*	24	25*	26*	27*	28*	29*	30*	31*	32*	33*	34*	35*	36*	37*	38*	39*	40*



Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

	Metadata for Poin	t
Smoothing State Location Latitude	Yes New York New York, United States 42.801 degrees North 73.86 degrees Wort	2890 River Road Niskayuna, NY
Longitude Elevation Date/Time	73.86 degrees West 80 feet Wed Sep 27 2023 10:33:53 (Time)	GMT-0400 (Eastern Daylight

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10
1yr	0.26	0.41	0.50	0.66	0.82	1.03	1yr	0.71	0.97	1.18	1.45	1.78	2.18	2.49	1yr	1.93	2.40	2.80	3.38	3.
2yr	0.33	0.51	0.63	0.83	1.05	1.30	2yr	0.90	1.16	1.48	1.79	2.15	2.57	2.90	2yr	2.28	2.79	3.26	3.87	4.
5yr	0.39	0.61	0.77	1.03	1.32	1.64	5yr	1.14	1.43	1.87	2.25	2.67	3.14	3.58	5yr	2.78	3.44	3.99	4.65	5.
10yr	0.45	0.70	0.89	1.21	1.57	1.96	10yr	1.35	1.67	2.24	2.68	3.15	3.66	4.19	10yr	3.24	4.03	4.65	5.35	6.
25yr	0.53	0.85	1.08	1.49	1.97	2.47	25yr	1.70	2.06	2.82	3.35	3.91	4.49	5.17	25yr	3.97	4.97	5.71	6.44	7.
50yr	0.60	0.97	1.24	1.75	2.35	2.97	50yr	2.03	2.41	3.38	3.99	4.61	5.23	6.06	50yr	4.63	5.83	6.66	7.41	8.
100yr	0.70	1.13	1.46	2.06	2.81	3.54	100yr	2.42	2.82	4.02	4.73	5.43	6.11	7.12	100yr	5.41	6.84	7.78	8.54	9.
200yr	0.80	1.31	1.69	2.43	3.35	4.23	200yr	2.89	3.30	4.80	5.62	6.40	7.14	8.36	200yr	6.32	8.04	9.10	9.84	10
500yr	0.97	1.60	2.08	3.02	4.23	5.35	500yr	3.65	4.08	6.06	7.04	7.94	8.78	10.35	500yr	7.77	9.95	11.20	11.87	12

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10
1yr	0.21	0.32	0.39	0.53	0.65	0.85	1yr	0.56	0.83	0.93	1.28	1.51	1.90	2.16	1yr	1.68	2.07	2.43	3.05	3.
2yr	0.31	0.49	0.60	0.81	1.00	1.15	2yr	0.86	1.12	1.29	1.66	2.05	2.50	2.81	2yr	2.21	2.71	3.16	3.77	4.
5yr	0.36	0.55	0.69	0.94	1.20	1.34	5yr	1.04	1.31	1.52	1.94	2.47	2.94	3.30	5yr	2.60	3.17	3.69	4.33	4.
10yr	0.40	0.61	0.76	1.06	1.37	1.51	10yr	1.18	1.48	1.71	2.18	2.74	3.30	3.69	10yr	2.92	3.55	4.14	4.80	5.
25yr	0.46	0.69	0.86	1.23	1.62	1.76	25yr	1.40	1.72	2.02	2.55	3.16	3.87	4.27	25yr	3.43	4.11	4.81	5.49	6.
50yr	0.50	0.76	0.95	1.37	1.84	1.99	50yr	1.59	1.94	2.28	2.87	3.51	4.37	4.77	50yr	3.86	4.59	5.39	6.05	6.
100yr	0.56	0.84	1.05	1.52	2.09	2.24	100yr	1.80	2.19	2.58	3.22	3.89	4.92	5.33	100yr	4.36	5.13	6.04	6.66	7.
200yr	0.62	0.93	1.17	1.70	2.37	2.53	200yr	2.05	2.47	2.94	3.62	4.32	5.56	5.92	200yr	4.92	5.69	6.76	7.32	8.
500yr	0.71	1.06	1.36	1.98	2.81	2.97	500yr	2.43	2.90	3.49	4.22	4.97	6.53	6.75	500yr	5.78	6.49	7.85	8.27	9.

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10
1yr	0.29	0.44	0.54	0.73	0.90	1.07	1yr	0.77	1.04	1.22	1.52	1.96	2.35	2.70	1yr	2.08	2.60	3.04	3.68	4.
2yr	0.35	0.53	0.66	0.89	1.10	1.23	2yr	0.95	1.21	1.38	1.77	2.28	2.66	3.03	2yr	2.35	2.92	3.38	4.02	4.
5yr	0.43	0.67	0.83	1.14	1.45	1.58	5yr	1.25	1.55	1.77	2.24	2.80	3.37	3.86	5yr	2.98	3.71	4.31	4.96	5.
10yr	0.52	0.80	1.00	1.39	1.80	1.91	10yr	1.55	1.87	2.14	2.68	3.30	4.05	4.66	10yr	3.58	4.49	5.18	5.88	6.
25yr	0.68	1.03	1.28	1.83	2.41	2.45	25yr	2.08	2.40	2.74	3.42	4.12	5.17	6.01	25yr	4.57	5.78	6.63	7.35	8.
50yr	0.82	1.24	1.55	2.23	3.00	2.96	50yr	2.59	2.89	3.30	4.11	4.88	6.22	7.30	50yr	5.51	7.02	8.01	8.71	9.
100yr	1.00	1.51	1.89	2.72	3.74	3.58	100yr	3.22	3.50	3.97	4.93	5.77	7.50	8.88	100yr	6.64	8.54	9.68	10.33	11
200yr	1.21	1.83	2.32	3.35	4.68	4.33	200yr	4.04	4.24	4.79	5.93	6.84	9.06	10.80	200yr	8.01	10.39	11.70	12.28	13
500yr	1.59	2.37	3.05	4.43	6.31	5.58	500yr	5.44	5.45	6.13	7.57	8.61	11.63	14.04	500yr	10.29	13.50	15.06	15.48	16



Attachment 5

Culvert Calculations

Lot 2 Culvert Calculation Lot 3 Culvert Calculation Seneca Road Culverts Calculations – Unimproved Channel (Study Point 1) Seneca Road Culverts Calculations – Improved Channel (Study Point 1) River Road Culvert Calculations (Study Point 2, 25-Year Storm) River Road Culvert Calculations (Study Point 2, 100-Year Storm)

Manning Formula Uniform Pipe Flow at Given Slope and Depth

2890 River Road					
Lot 2 Driveway Culvert					
			Results		
			Flow depth, y	12.0000	in 🗸
			Flow area, a	0.7854	ft^2 🗸
			Pipe area, a0	0.7854	ft^2 🗸
Inputs			Relative area, a/a0	1.0000	fraction 🗸
Pipe diameter, do	12	in X/	Wetted perimeter, P _w	3.1416	ft 🗸
	12		Hydraulic radius, R _h	0.2500	ft 🗸
Manning roughness, n	0.013		Top width, T	0.0000	ft 🗸
Pressure slope (possibly ? equal to pipe slope),	0.017		Velocity, v	5.9142	ft/sec 🗸
S ₀	rise/ru	1 🗸	Velocity head, h _v	0.5436	ft H20 🗸
Relative flow depth. v/do	100	%	Froude number, F	0.00	
	100	70 🗸	Average shear stress (tractive force), tau	0.2653	psf 🗸
			Flow, Q (See notes)	4.6449	cfs 🗸
			Full flow, Q0	4.6449	cfs 🗸
			Ratio to full flow, Q/Q0	1.0000	fraction 🗸



Notes:

This is the flow and depth inside an *infinitely long* pipe.

Getting the flow into the pipe may require significantly higher headwater depth. Add at least 1.5 times the velocity head to get the headwater depth or see my 2-minute tutorial for standard culvert headwater calculations using HY-8.

Manning Formula Uniform Pipe Flow at Given Slope and Depth

2890 River Road					
Lot 3 Driveway Culvert					
			Results		
			Flow depth, y	12.0000	in 🗸
			Flow area, a	0.7854	ft^2 🗸
			Pipe area, a0	0.7854	ft^2 🗸
Inputs			Relative area, a/a0	1.0000	fraction 🗸
Pipe diameter, do	10	in XZ	Wetted perimeter, P _w	3.1416	ft 🗸
	12		Hydraulic radius, R _h	0.2500	ft 🗸
Manning roughness, n	0.013		Top width, T	0.0000	ft 🗸
Pressure slope (possibly ? equal to pipe slope),	0.02		Velocity, v	6.4149	ft/sec 🗸
S ₀	rise/ru	1 🗸	Velocity head, h _v	0.6396	ft H20 🗸
Relative flow depth. v/do	100	%	Froude number, F	0.00	
	100	70 •	Average shear stress (tractive force), tau	0.3121	psf 🗸
			Flow, Q (See notes)	5.0381	cfs 🗸
			Full flow, Q0	5.0381	cfs 🗸
			Ratio to full flow, Q/Q0	1.0000	fraction 🗸



Notes:

This is the flow and depth inside an *infinitely long* pipe.

Getting the flow into the pipe may require significantly higher headwater depth. Add at least 1.5 times the velocity head to get the headwater depth or see my 2-minute tutorial for standard culvert headwater calculations using HY-8.

HY-8 Culvert Analysis Report for 30" and 36" Culverts at Seneca Road – Unimproved Channel

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 291.20 cfs

Design Flow: 291.20 cfs

Maximum Flow: 291.20 cfs

Table 1 - Summary of Culvert Flows at Crossing: Study Point 1 - Seneca Road

Headwater Elevation (ft)	Total Discharge (cfs)	36" Culvert Discharge (cfs)	30" Culvert Discharge (cfs)	Roadway Discharge (cfs)	Iterations
289.56	291.20	44.75	30.94	215.51	6
289.56	291.20	44.75	30.94	215.51	2
289.56	291.20	44.75	30.94	215.51	2
289.56	291.20	44.75	30.94	215.51	2
289.56	291.20	44.75	30.94	215.51	2
289.56	291.20	44.75	30.94	215.51	2
289.56	291.20	44.75	30.94	215.51	2
289.56	291.20	44.75	30.94	215.51	2
289.56	291.20	44.75	30.94	215.51	2
289.56	291.20	44.75	30.94	215.51	2
289.56	291.20	44.75	30.94	215.51	2
288.17	40.33	22.03	18.31	0.00	Overtopping



Rating Curve Plot for Crossing: Study Point 1 - Seneca Road

Culvert Data: 36" Culvert

Table 1	- Culvert	Summary	Table: 3	6" Culv	ert						
Total Discha rge (cfs)	Culvert Discha rge (cfs)	Headwa ter Elevatio n (ft)	Inlet Contr ol Dept h (ft)	Outle t Contr ol Dept h (ft)	Flo w Ty pe	Norm al Dept h (ft)	Critic al Dept h (ft)	Outl et Dep th (ft)	Tailwa ter Depth (ft)	Outle t Veloci ty (ft/s)	Tailwa ter Velocit y (ft/s)
291.20 cfs	44.75 cfs	289.56	3.61	3.551	6- FFt	1.96	2.18	2.80	2.80	6.52	0.85
291.20 cfs	44.75 cfs	289.56	3.61	3.551	6- FFt	1.96	2.18	2.80	2.80	6.52	0.85
291.20 cfs	44.75 cfs	289.56	3.61	3.551	6- FFt	1.96	2.18	2.80	2.80	6.52	0.85
291.20 cfs	44.75 cfs	289.56	3.61	3.551	6- FFt	1.96	2.18	2.80	2.80	6.52	0.85
291.20 cfs	44.75 cfs	289.56	3.61	3.551	6- FFt	1.96	2.18	2.80	2.80	6.52	0.85
291.20 cfs	44.75 cfs	289.56	3.61	3.551	6- FFt	1.96	2.18	2.80	2.80	6.52	0.85
291.20 cfs	44.75 cfs	289.56	3.61	3.551	6- FFt	1.96	2.18	2.80	2.80	6.52	0.85
291.20 cfs	44.75 cfs	289.56	3.61	3.551	6- FFt	1.96	2.18	2.80	2.80	6.52	0.85
291.20	44.75	289.56	3.61	3.551	6-	1.96	2.18	2.80	2.80	6.52	0.85

cfs	cfs				FFt						
291.20	44.75	289.56	3.61	3.551	6-	1.96	2.18	2.80	2.80	6.52	0.85
cfs	cfs				FFt						
291.20	44.75	289.56	3.61	3.551	6-	1.96	2.18	2.80	2.80	6.52	0.85
cfs	cfs				FFt						

Culvert Barrel Data

Culvert Barrel Type Straight Culvert

Inlet Elevation (invert): 285.95 ft,

Outlet Elevation (invert): 285.52 ft

Culvert Length: 65.00 ft,

Culvert Slope: 0.0066

Culvert Performance Curve Plot: 36" Culvert



Water Surface Profile Plot for Culvert: 36" Culvert



Site Data - 36" Culvert

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 285.95 ft

Outlet Station: 65.00 ft

Outlet Elevation: 285.52 ft

Number of Barrels: 1

Culvert Data Summary - 36" Culvert

Barrel Shape: Circular

Barrel Diameter: 3.00 ft

Barrel Material: Smooth HDPE

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Culvert Data: 30" Culvert

Table 2	- Culvert	Summary	Table: 3	0" Culv	ert						
Total Discha rge (cfs)	Culvert Discha rge (cfs)	Headwa ter Elevatio n (ft)	Inlet Contr ol Dept h (ft)	Outle t Contr ol Dept h (ft)	Flo w Ty pe	Norm al Dept h (ft)	Critic al Dept h (ft)	Outl et Dep th (ft)	Tailwa ter Depth (ft)	Outle t Veloci ty (ft/s)	Tailwa ter Velocit y (ft/s)
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85
291.20 cfs	30.94 cfs	289.56	3.25	3.578	4- FFf	1.89	1.90	2.50	2.80	6.30	0.85

Culvert Barrel Data

Culvert Barrel Type Straight Culvert

Inlet Elevation (invert): 285.98 ft,

Outlet Elevation (invert): 285.61 ft

Culvert Length: 65.00 ft,

Culvert Slope: 0.0057





Water Surface Profile Plot for Culvert: 30" Culvert



Site Data - 30" Culvert

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 285.98 ft

Outlet Station: 65.00 ft

Outlet Elevation: 285.61 ft

Number of Barrels: 1

Culvert Data Summary - 30" Culvert

Barrel Shape: Circular

Barrel Diameter: 2.50 ft

Barrel Material: Smooth HDPE

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Tailwater Data for Crossing: Study Point 1 - Seneca Road

Flow (cfs)	Water Surface Elev (ft)	Velocity (ft/s)	Depth (ft)	Shear (psf)	Froude Number
291.20	288.32	2.80	0.85	0.17	0.13
291.20	288.32	2.80	0.85	0.17	0.13
291.20	288.32	2.80	0.85	0.17	0.13
291.20	288.32	2.80	0.85	0.17	0.13
291.20	288.32	2.80	0.85	0.17	0.13
291.20	288.32	2.80	0.85	0.17	0.13
291.20	288.32	2.80	0.85	0.17	0.13
291.20	288.32	2.80	0.85	0.17	0.13
291.20	288.32	2.80	0.85	0.17	0.13
291.20	288.32	2.80	0.85	0.17	0.13
291.20	288.32	2.80	0.85	0.17	0.13

 Table 2 - Downstream Channel Rating Curve (Crossing: Study Point 1 - Seneca Road)

Tailwater Channel Data - Study Point 1 - Seneca Road

Tailwater Channel Option: Irregular Channel

Channel Slope: Irregular Channel

User Defined Channel Cross-Section

Coord No.	Station (ft)	Elevation (ft)	Manning's n
1	0.00	290.00	0.0700
2	60.00	288.00	0.0700
3	215.00	285.52	0.0700
4	217.00	285.52	0.0700
5	275.00	288.00	0.0700
6	362.00	290.00	0.0000

Roadway Data for Crossing: Study Point 1 - Seneca Road

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Coord No.	Station (ft)	Elevation (ft)
0	0.00	291.85
1	53.00	289.85
2	113.00	288.17
3	160.00	289.13
4	200.00	290.11

Irregular Roadway Cross-Section

5	205.00	290.22
6	223.00	290.53
7	270.00	291.33

Roadway Surface: Paved

Roadway Top Width: 24.00 ft

HY-8 Culvert Analysis Report for 30" and 36" Culverts at Seneca Road – Improved Channel

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 291.20 cfs

Design Flow: 291.20 cfs

Maximum Flow: 291.20 cfs

Table 1 - Summary of Culvert Flows at Crossing: Study Point 1 - Seneca Road

Headwater Elevation (ft)	Total Discharge (cfs)	36" Culvert Discharge (cfs)	30" Culvert Discharge (cfs)	Roadway Discharge (cfs)	Iterations
289.55	291.20	44.69	32.78	213.73	6
289.55	291.20	44.69	32.78	213.73	2
289.55	291.20	44.69	32.78	213.73	2
289.55	291.20	44.69	32.78	213.73	2
289.55	291.20	44.69	32.78	213.73	2
289.55	291.20	44.69	32.78	213.73	2
289.55	291.20	44.69	32.78	213.73	2
289.55	291.20	44.69	32.78	213.73	2
289.55	291.20	44.69	32.78	213.73	2
289.55	291.20	44.69	32.78	213.73	2
289.55	291.20	44.69	32.78	213.73	2
288.17	40.34	22.03	18.31	0.00	Overtopping



Rating Curve Plot for Crossing: Study Point 1 - Seneca Road

Culvert Data: 36" Culvert

Tuble 1	Current	Jannary	Tubici u	Curr							
Total Discha rge (cfs)	Culvert Discha rge (cfs)	Headwa ter Elevatio n (ft)	Inlet Contr ol Dept h (ft)	Outle t Contr ol Dept h (ft)	Flo w Ty pe	Norm al Dept h (ft)	Critic al Dept h (ft)	Outl et Dep th (ft)	Tailwa ter Depth (ft)	Outle t Veloci ty (ft/s)	Tailwa ter Velocit y (ft/s)
291.20 cfs	44.69 cfs	289.55	3.60	3.392	6- FFt	1.95	2.18	2.64	2.64	6.78	0.93
291.20 cfs	44.69 cfs	289.55	3.60	3.392	6- FFt	1.95	2.18	2.64	2.64	6.78	0.93
291.20 cfs	44.69 cfs	289.55	3.60	3.392	6- FFt	1.95	2.18	2.64	2.64	6.78	0.93
291.20 cfs	44.69 cfs	289.55	3.60	3.392	6- FFt	1.95	2.18	2.64	2.64	6.78	0.93
291.20 cfs	44.69 cfs	289.55	3.60	3.392	6- FFt	1.95	2.18	2.64	2.64	6.78	0.93
291.20 cfs	44.69 cfs	289.55	3.60	3.392	6- FFt	1.95	2.18	2.64	2.64	6.78	0.93
291.20 cfs	44.69 cfs	289.55	3.60	3.392	6- FFt	1.95	2.18	2.64	2.64	6.78	0.93
291.20 cfs	44.69 cfs	289.55	3.60	3.392	6- FFt	1.95	2.18	2.64	2.64	6.78	0.93
291.20	44.69	289.55	3.60	3.392	6-	1.95	2.18	2.64	2.64	6.78	0.93

Table 1 - Culvert Summary Table: 36" Culvert

cfs	cfs				FFt						
291.20 cfs	44.69 cfs	289.55	3.60	3.392	6- FFt	1.95	2.18	2.64	2.64	6.78	0.93
291.20 cfs	44.69 cfs	289.55	3.60	3.392	6- FFt	1.95	2.18	2.64	2.64	6.78	0.93

Culvert Barrel Data

Culvert Barrel Type Straight Culvert

Inlet Elevation (invert): 285.95 ft,

Outlet Elevation (invert): 285.52 ft

Culvert Length: 65.00 ft,

Culvert Slope: 0.0066

Culvert Performance Curve Plot: 36" Culvert



Water Surface Profile Plot for Culvert: 36" Culvert



Site Data - 36" Culvert

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 285.95 ft

Outlet Station: 65.00 ft

Outlet Elevation: 285.52 ft

Number of Barrels: 1

Culvert Data Summary - 36" Culvert

Barrel Shape: Circular

Barrel Diameter: 3.00 ft

Barrel Material: Smooth HDPE

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall (Ke=0.5)

Inlet Depression: None

Culvert Data: 30" Culvert

Table 2	- Culvert	Summary	Table: 3	0" Culv	ert						
Total Discha rge (cfs)	Culvert Discha rge (cfs)	Headwa ter Elevatio n (ft)	Inlet Contr ol Dept h (ft)	Outle t Contr ol Dept h (ft)	Flo w Ty pe	Norm al Dept h (ft)	Critic al Dept h (ft)	Outl et Dep th (ft)	Tailwa ter Depth (ft)	Outle t Veloci ty (ft/s)	Tailwa ter Velocit y (ft/s)
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93
291.20 cfs	32.78 cfs	289.55	3.44	3.574	4- FFf	2.00	1.95	2.50	2.64	6.68	0.93

Culvert Barrel Data

Culvert Barrel Type Straight Culvert

Inlet Elevation (invert): 285.98 ft,

Outlet Elevation (invert): 285.61 ft

Culvert Length: 65.00 ft,

Culvert Slope: 0.0057

Culvert Performance Curve Plot: 30" Culvert



Water Surface Profile Plot for Culvert: 30" Culvert



Site Data - 30" Culvert

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 285.98 ft

Outlet Station: 65.00 ft

Outlet Elevation: 285.61 ft

Number of Barrels: 1

Culvert Data Summary - 30" Culvert

Barrel Shape: Circular

Barrel Diameter: 2.50 ft

Barrel Material: Smooth HDPE

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Tailwater Data for Crossing: Study Point 1 - Seneca Road

Flow (cfs)	Water Surface Elev (ft)	Velocity (ft/s)	Depth (ft)	Shear (psf)	Froude Number
291.20	288.16	2.64	0.93	0.16	0.14
291.20	288.16	2.64	0.93	0.16	0.14
291.20	288.16	2.64	0.93	0.16	0.14
291.20	288.16	2.64	0.93	0.16	0.14
291.20	288.16	2.64	0.93	0.16	0.14
291.20	288.16	2.64	0.93	0.16	0.14
291.20	288.16	2.64	0.93	0.16	0.14
291.20	288.16	2.64	0.93	0.16	0.14
291.20	288.16	2.64	0.93	0.16	0.14
291.20	288.16	2.64	0.93	0.16	0.14
291.20	288.16	2.64	0.93	0.16	0.14

 Table 2 - Downstream Channel Rating Curve (Crossing: Study Point 1 - Seneca Road)

Tailwater Channel Data - Study Point 1 - Seneca Road

Tailwater Channel Option: Irregular Channel

Channel Slope: Irregular Channel

User Defined Channel Cross-Section

Coord No.	Station (ft)	Elevation (ft)	Manning's n
1	0.00	290.00	0.0700
2	60.00	288.00	0.0700
3	210.00	285.52	0.0350
4	218.00	285.52	0.0700
5	275.00	288.00	0.0700
6	362.00	290.00	0.0000

Roadway Data for Crossing: Study Point 1 - Seneca Road

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Coord No.	Station (ft)	Elevation (ft)
0	0.00	291.85
1	53.00	289.85
2	113.00	288.17
3	160.00	289.13
4	200.00	290.11

Irregular Roadway Cross-Section

5	205.00	290.22
6	223.00	290.53
7	270.00	291.33

Roadway Surface: Paved

Roadway Top Width: 24.00 ft

HY-8 Culvert Analysis Report for 42" Culvert at River Road – 25-Year

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 314.50 cfs

Design Flow: 314.50 cfs

Maximum Flow: 314.50 cfs

Headwater Elevation (ft)	Total Discharge	42" Culvert Discharge	Roadway Discharge	Iterations
	(CfS)	(CIS)	(CIS)	
290.06	314.50	125.11	189.35	13
290.06	314.50	125.11	189.35	2
290.06	314.50	125.11	189.35	2
290.06	314.50	125.11	189.35	2
290.06	314.50	125.11	189.35	2
290.06	314.50	125.11	189.35	2
290.06	314.50	125.11	189.35	2
290.06	314.50	125.11	189.35	2
290.06	314.50	125.11	189.35	2
290.06	314.50	125.11	189.35	2
290.06	314.50	125.11	189.35	2
288.66	111.46	111.46	0.00	Overtopping

Table 1 - Summary of Culvert Flows at Crossing: River Road Culvert

Rating Curve Plot for Crossing: River Road Culvert



Culvert Data: 42" Culvert

Tuble 1		Jannary	Tuble: 4	L Cuiv							
Total Discha rge (cfs)	Culvert Discha rge (cfs)	Headwa ter Elevatio n (ft)	Inlet Contr ol Dept h (ft)	Outle t Contr ol Dept h (ft)	Flo w Ty pe	Norm al Dept h (ft)	Critic al Dept h (ft)	Outl et Dep th (ft)	Tailwa ter Depth (ft)	Outle t Veloci ty (ft/s)	Tailwa ter Velocit y (ft/s)
314.50 cfs	125.11 cfs	290.06	9.02	6.863	5- S2n	2.36	3.28	2.72	0.00	15.62	0.00
314.50 cfs	125.11 cfs	290.06	9.02	6.863	5- S2n	2.36	3.28	2.72	0.00	15.62	0.00
314.50 cfs	125.11 cfs	290.06	9.02	6.863	5- S2n	2.36	3.28	2.72	0.00	15.62	0.00
314.50 cfs	125.11 cfs	290.06	9.02	6.863	5- S2n	2.36	3.28	2.72	0.00	15.62	0.00
314.50 cfs	125.11 cfs	290.06	9.02	6.863	5- S2n	2.36	3.28	2.72	0.00	15.62	0.00
314.50 cfs	125.11 cfs	290.06	9.02	6.863	5- S2n	2.36	3.28	2.72	0.00	15.62	0.00
314.50 cfs	125.11 cfs	290.06	9.02	6.863	5- S2n	2.36	3.28	2.72	0.00	15.62	0.00
314.50 cfs	125.11 cfs	290.06	9.02	6.863	5- S2n	2.36	3.28	2.72	0.00	15.62	0.00
314.50	125.11	290.06	9.02	6.863	5-	2.36	3.28	2.72	0.00	15.62	0.00

Table 1 - Culvert	Summary	Table:	42"	Culvert
-------------------	---------	--------	-----	---------

cfs	cfs				S2n						
314.50	125.11	290.06	9.02	6.863	5-	2.36	3.28	2.72	0.00	15.62	0.00
cfs	cfs				S2n						
314.50	125.11	290.06	9.02	6.863	5-	2.36	3.28	2.72	0.00	15.62	0.00
cfs	cfs				S2n						

Culvert Barrel Data

Culvert Barrel Type Straight Culvert

Inlet Elevation (invert): 281.04 ft,

Outlet Elevation (invert): 279.77 ft

Culvert Length: 73.01 ft,

Culvert Slope: 0.0174

Culvert Performance Curve Plot: 42" Culvert



Water Surface Profile Plot for Culvert: 42" Culvert



Site Data - 42" Culvert

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 281.04 ft

Outlet Station: 73.00 ft

Outlet Elevation: 279.77 ft

Number of Barrels: 1

Culvert Data Summary - 42" Culvert

Barrel Shape: Circular

Barrel Diameter: 3.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0110

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall (Ke=0.5)

Inlet Depression: None

Tailwater Data for Crossing: River Road Culvert

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)				
314.50	278.23	0.00				
314.50	278.23	0.00				
314.50	278.23	0.00				
314.50	278.23	0.00				
314.50	278.23	0.00				
314.50	278.23	0.00				
314.50	278.23	0.00				
314.50	278.23	0.00				
314.50	278.23	0.00				
314.50	278.23	0.00				
314.50	278.23	0.00				

Table 2 - Downstream Channel Rating Curve (Crossing: River Road Culvert)

Tailwater Channel Data - River Road Culvert

Tailwater Channel Option: Enter Constant Tailwater Elevation

Constant Tailwater Elevation: 278.23 ft

Roadway Data for Crossing: River Road Culvert

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Irregular Roadway Cross-Section						
Coord No.	Station (ft)	Elevation (ft)				
0	0.00	291.11				
1	54.00	290.39				
2	109.00	290.00				
3	169.00	289.82				
4	207.00	289.66				
5	233.00	289.25				
6	240.00	288.98				
7	244.00	288.88				
8	250.00	288.66				
9	255.00	288.89				
10	260.00	289.21				
11	271.00	289.63				
12	326.00	291.06				

Irregular Roadway Cross-Section

Roadway Surface: Paved

Roadway Top Width: 30.00 ft

HY-8 Culvert Analysis Report for 42" Culvert at River Road – 100-Year

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 509.47 cfs

Design Flow: 509.47 cfs

Maximum Flow: 509.47 cfs

Headwater Elevation (ft)	Total Discharge (cfs)	42" Culvert Discharge (cfs)	Roadway Discharge (cfs)	Iterations
290.36	509.47	127.85	381.60	14
290.36	509.47	127.85	381.60	2
290.36	509.47	127.85	381.60	2
290.36	509.47	127.85	381.60	2
290.36	509.47	127.85	381.60	2
290.36	509.47	127.85	381.60	2
290.36	509.47	127.85	381.60	2
290.36	509.47	127.85	381.60	2
290.36	509.47	127.85	381.60	2
290.36	509.47	127.85	381.60	2
290.36	509.47	127.85	381.60	2
288.66	111.46	111.46	0.00	Overtopping

Table 1 - Summary of Culvert Flows at Crossing: River Road Culvert

Rating Curve Plot for Crossing: River Road Culvert



Culvert Data: 42" Culvert

		,									
Total Discha rge (cfs)	Culvert Discha rge (cfs)	Headwa ter Elevatio n (ft)	Inlet Contr ol Dept h (ft)	Outle t Contr ol Dept h (ft)	Flo w Ty pe	Norm al Dept h (ft)	Critic al Dept h (ft)	Outl et Dep th (ft)	Tailwa ter Depth (ft)	Outle t Veloci ty (ft/s)	Tailwa ter Velocit y (ft/s)
509.47 cfs	127.85 cfs	290.36	9.32	7.081	5- S2n	2.40	3.30	2.75	0.00	15.76	0.00
509.47 cfs	127.85 cfs	290.36	9.32	7.081	5- S2n	2.40	3.30	2.75	0.00	15.76	0.00
509.47 cfs	127.85 cfs	290.36	9.32	7.081	5- S2n	2.40	3.30	2.75	0.00	15.76	0.00
509.47 cfs	127.85 cfs	290.36	9.32	7.081	5- S2n	2.40	3.30	2.75	0.00	15.76	0.00
509.47 cfs	127.85 cfs	290.36	9.32	7.081	5- S2n	2.40	3.30	2.75	0.00	15.76	0.00
509.47 cfs	127.85 cfs	290.36	9.32	7.081	5- S2n	2.40	3.30	2.75	0.00	15.76	0.00
509.47 cfs	127.85 cfs	290.36	9.32	7.081	5- S2n	2.40	3.30	2.75	0.00	15.76	0.00
509.47 cfs	127.85 cfs	290.36	9.32	7.081	5- S2n	2.40	3.30	2.75	0.00	15.76	0.00
509.47	127.85	290.36	9.32	7.081	5-	2.40	3.30	2.75	0.00	15.76	0.00

Table 1 - Culvert Summary Table: 42" Culvert

cfs	cfs				S2n						
509.47 cfs	127.85 cfs	290.36	9.32	7.081	5- S2n	2.40	3.30	2.75	0.00	15.76	0.00
509.47 cfs	127.85 cfs	290.36	9.32	7.081	5- S2n	2.40	3.30	2.75	0.00	15.76	0.00

Culvert Barrel Data

Culvert Barrel Type Straight Culvert

Inlet Elevation (invert): 281.04 ft,

Outlet Elevation (invert): 279.77 ft

Culvert Length: 73.01 ft,

Culvert Slope: 0.0174

Culvert Performance Curve Plot: 42" Culvert



Water Surface Profile Plot for Culvert: 42" Culvert



Site Data - 42" Culvert

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 281.04 ft

Outlet Station: 73.00 ft

Outlet Elevation: 279.77 ft

Number of Barrels: 1

Culvert Data Summary - 42" Culvert

Barrel Shape: Circular

Barrel Diameter: 3.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0110

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Tailwater Data for Crossing: River Road Culvert

Table 2 - Doministicani channel nating carre (clossing, nivel noud current)						
Flow (cfs)	Water Surface Elev (ft)	Depth (ft)				
509.47	278.23	0.00				
509.47	278.23	0.00				
509.47	278.23	0.00				
509.47	278.23	0.00				
509.47	278.23	0.00				
509.47	278.23	0.00				
509.47	278.23	0.00				
509.47	278.23	0.00				
509.47	278.23	0.00				
509.47	278.23	0.00				
509.47	278.23	0.00				

Table 2 - Downstream Channel Rating Curve (Crossing: River Road Culvert)

Tailwater Channel Data - River Road Culvert

Tailwater Channel Option: Enter Constant Tailwater Elevation

Constant Tailwater Elevation: 278.23 ft

Roadway Data for Crossing: River Road Culvert

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Irregular Roadway Cross-Section				
Coord No.	Station (ft)			
0	0.00			
1	54.00			

Coord No.	Station (ft)	Elevation (ft)
0	0.00	291.11
1	54.00	290.39
2	109.00	290.00
3	169.00	289.82
4	207.00	289.66
5	233.00	289.25
6	240.00	288.98
7	244.00	288.88
8	250.00	288.66
9	255.00	288.89
10	260.00	289.21
11	271.00	289.63
12	326.00	291.06

Roadway Surface: Paved

Roadway Top Width: 30.00 ft
Attachment 6

HydroCAD Models

River Road Watershed (Study Point 1 & 2) 2890 River Road Subdivision (Pre & Post-Development)



Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve Mode		Duration (hours)	B/B	Depth (inches)	AMC
1	25-YR	Type II 24-hr		Default	24.00	1	4.49	2
2	100-YR	Type II 24-hr		Default	24.00	1	6.11	2

Area Listing (all nodes)

Area	CN	Description
 (acres)		(subcatchment-numbers)
94.845	80	1/2 acre lots, 25% imp, HSG C (B, C, D, E, F)
14.700	74	>75% Grass cover, Good, HSG C (A1, A2, B, F)
3.380	70	Brush, Fair, HSG C (F)
0.190	89	Gravel roads, HSG C (B, C)
4.760	89	Pasture/grassland/range, Poor, HSG D (B, C, F)
7.742	98	Paved parking, HSG C (A1, A2, B, C, F)
2.930	98	Roofs, HSG C (A2, B)
29.010	70	Woods, Good, HSG C (B, C, D, E)
157.557	79	TOTAL AREA

Soil Listing (all nodes)

Area	Soil	Subcatchment
 (acres)	Group	Numbers
0.000	HSG A	
0.000	HSG B	
152.797	HSG C	A1, A2, B, C, D, E, F
4.760	HSG D	B, C, F
0.000	Other	
157.557		TOTAL AREA

Ground Covers (all nodes)

HSG-A	HSG-B	HSG-C	HSG-D	Other	Total	Ground	Subcatchment
(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	Cover	Numbers
0.000	0.000	94.845	0.000	0.000	94.845	1/2 acre lots, 25% imp	B, C, D, E, F
0.000	0.000	14.700	0.000	0.000	14.700	>75% Grass cover, Good	A1, A2, B, F
0.000	0.000	3.380	0.000	0.000	3.380	Brush, Fair	F
0.000	0.000	0.190	0.000	0.000	0.190	Gravel roads	B, C
0.000	0.000	0.000	4.760	0.000	4.760	Pasture/grassland/range, Poor	B, C, F
0.000	0.000	7.742	0.000	0.000	7.742	Paved parking	A1, A2, B, C, F
0.000	0.000	2.930	0.000	0.000	2.930	Roofs	A2, B
0.000	0.000	29.010	0.000	0.000	29.010	Woods, Good	B, C, D, E
0.000	0.000	152.797	4.760	0.000	157.557	TOTAL AREA	

Pipe Listing (all nodes)

	Line#	Node	In-Invert	Out-Invert	Length	Slope	n	Width	Diam/Height	Inside-Fill	Node
_		Number	(feet)	(feet)	(feet)	(ft/ft)		(inches)	(inches)	(inches)	Name
-	1	F	0.00	0.00	30.0	0.0200	0.012	0.0	12.0	0.0	POST-F DA
	2	SS1	298.25	296.50	296.0	0.0059	0.012	0.0	12.0	0.0	EX- A1 CHAMBERS
	3	SS2	298.00	296.50	215.0	0.0070	0.012	0.0	12.0	0.0	EX-A2 CHAMBERS

Notes Listing (all nodes)

Line#	Node	Notes
	Number	
1	SS1	Node SS1 (Existing A1 Chambers) is modeled after Pond No. 1 - A1 SUBSURFACE from the Stormwater Management Report
		and Stormwater Pollution Prevention Plan for Iroquois Middle School, prepared by Appel Osborne Landscape Architecture
		dated January 2023 (Pages 325-326).
2	SS2	Node SS2 (Existing A2 Chambers) is modeled after Pond No. 2 - A2 SUBSURFACE from the Stormwater Management Report
		and Stormwater Pollution Prevention Plan for Iroquois Middle School, prepared by Appel Osborne Landscape Architecture
		dated January 2023 (Pages 327-328).

Type II 24-hr	25-YR Rail	nfall=4.49"
	Printed	12/5/2023
		Page 8

Time span=0.00-98.00 hrs, dt=0.05 hrs, 1961 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA1: A1 DA	Runoff Area=2.310 ac 58.01% Impervious Runoff Depth=3.19" Flow Length=200' Slope=0.0150 '/' Tc=18.7 min CN=88 Runoff=8.32 cfs 0.613 af
SubcatchmentA2: A2 DA	Runoff Area=3.150 ac 74.29% Impervious Runoff Depth=3.59" Flow Length=91' Tc=14.3 min CN=92 Runoff=14.14 cfs 0.943 af
SubcatchmentB: B DA	Runoff Area=34.870 ac 21.45% Impervious Runoff Depth=2.37" Flow Length=2,693' Tc=32.9 min CN=79 Runoff=67.08 cfs 6.881 af
SubcatchmentC: C DA	Runoff Area=44.572 ac 17.24% Impervious Runoff Depth=2.20" Flow Length=2,100' Tc=25.8 min CN=77 Runoff=93.02 cfs 8.181 af
SubcatchmentD: D DA	Runoff Area=3.025 ac 14.59% Impervious Runoff Depth=2.12" Flow Length=524' Tc=17.1 min CN=76 Runoff=7.71 cfs 0.535 af
SubcatchmentE: E DA	Runoff Area=57.210 ac 23.30% Impervious Runoff Depth=2.37" Flow Length=2,200' Tc=26.2 min CN=79 Runoff=127.68 cfs 11.290 af
SubcatchmentF: POST-FDA	Runoff Area=12.420 ac 14.23% Impervious Runoff Depth=2.37" Flow Length=1,525' Tc=32.2 min CN=79 Runoff=24.22 cfs 2.451 af
Pond SS1: EX- A1 CHAMBERS	Peak Elev=300.87' Storage=13,470 cf Inflow=8.32 cfs 0.613 af Outflow=1.29 cfs 0.581 af
Pond SS2: EX-A2 CHAMBERS	Peak Elev=300.64' Storage=24,900 cf Inflow=14.14 cfs 0.943 af Outflow=0.58 cfs 0.943 af
Link 1: POINT OF STUDY 1	Inflow=291.20 cfs 28.410 af Primary=291.20 cfs 28.410 af
Link 2: POINT OF STUDY 2	Inflow=314.50 cfs 30.861 af Primary=314.50 cfs 30.861 af

Total Runoff Area = 157.557 ac Runoff Volume = 30.894 af Average Runoff Depth = 2.35" 78.18% Pervious = 123.174 ac 21.82% Impervious = 34.383 ac

Summary for Subcatchment A1: A1 DA

Runoff = 8.32 cfs @ 12.11 hrs, Volume= 0.61 Routed to Pond SS1 : EX- A1 CHAMBERS

0.613 af, Depth= 3.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 25-YR Rainfall=4.49"

Area	(ac)	CN	Desc	cription		
0	.970	74	>75%	% Grass co	over, Good	, HSG C
1	.340	98	Pave	ed parking	, HSG C	
2	.310	88	Weig	phted Aver	age	
0	.970		41.9	9% Pervio	us Area	
1	.340		58.0	1% Imperv	∕ious Area	
_						
Tc	Lengt	ņ	Slope	Velocity	Capacity	Description
(min)	(teet)	(ft/ft)	(ft/sec)	(cts)	
17.9	100	0 0	0.0150	0.09		Sheet Flow, 100' Lawn sheet flow at 1.5%
						Grass: Dense n= 0.240 P2= 2.57"
0.8	100) C	0.0150	1.97		Shallow Concentrated Flow, 100' Unpaved Shallow concentrated flow at 1.5%
						Unpaved Kv= 16.1 fps
18.7	200	D T	Fotal			

22352_River Road Watershed Prepared by Engineering Ventures, Inc



Summary for Subcatchment A2: A2 DA

Runoff = 14.14 cfs @ 12.06 hrs, Volume= Routed to Pond SS2 : EX-A2 CHAMBERS 0.943 af, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 25-YR Rainfall=4.49"

_	Area	(ac) C	N Des	cription								
	0.	810 7	74 >75	4 >75% Grass cover, Good, HSG C								
	2.	010 9	98 Paved parking, HSG C									
_	0.	0.330 98 Roofs, HSG Č										
	3.	150 9	92 Wei	ghted Avei	rage							
	0.	810	25.7	1% Pervio	us Area							
	2.	340	74.2	29% Imperv	vious Area							
	_											
	TC	Length	Slope	Velocity	Capacity	Description						
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cts)							
	3.3	14	0.0200	0.07		Sheet Flow, 14' Lawn sheet flow at 2.0%						
						Grass: Dense n= 0.240 P2= 2.57"						
	0.2	8	0.0150	0.66		Sheet Flow, 8' Pavement sheet flow at 1.5%						
						Smooth surfaces n= 0.011 P2= 2.57"						
	10.8	69	0.0250	0.11		Sheet Flow, 69' Lawn sheet flow at 2.5%						
_						Grass: Dense n= 0.240 P2= 2.57"						
	14.3	91	Total									

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment B: B DA

Runoff = 67.08 cfs @ 12.28 hrs, Volume= Routed to Link 1 : POINT OF STUDY 1 6.881 af, Depth= 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 25-YR Rainfall=4.49"

Area	(ac) C	N Des	cription		
0.	140 8	39 Gra	vel roads, l	HSG C	
11.	170 7	74 >75	% Grass c	over, Good	, HSG C
2.	740 9	98 Pav	ed parking	, HSG C	
8.	560 8	30 1/2	acre lots, 2	25% imp, H	SG C
2.	600 9	98 Roo	fs, HSG C		
1.	960 8	39 Pas	ture/grassl	and/range,	Poor, HSG D
7.	700 7	70 Woo	ods, Good,	HSG C	
34.	870 7	79 Wei	ghted Aver	age	
27.	390	78.5	5% Pervio	us Area	
7.	480	21.4	5% Imperv	vious Area	
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
14.6	100	0.0250	0.11		Sheet Flow, 100' Lawn sheet flow at 2.5%
					Grass: Dense n= 0.240 P2= 2.57"
5.4	897	0.0300	2.79		Shallow Concentrated Flow, 610'+287' Unpaved Shallow concentrated flow at 3%
					Unpaved Kv= 16.1 fps
0.9	233	0.0800	4.55		Shallow Concentrated Flow, 233' Unpaved Shallow concentrated flow at 8%
10.0					Unpaved Kv= 16.1 tps
12.0	1,463	0.0160	2.04		Shallow Concentrated Flow, 1463' Unpaved Shallow concentrated flow at 1.6%
					Unpaved Kv= 16.1 tps

32.9 2,693 Total

22352_River Road Watershed Prepared by Engineering Ventures, Inc

HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment C: C DA

Runoff = 93.02 cfs @ 12.20 hrs, Volume= Routed to Link 1 : POINT OF STUDY 1 8.181 af, Depth= 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 25-YR Rainfall=4.49"

	Area (ac) C	N De	scription							
	0.0	050 8	39 Gra	Gravel roads, HSG C							
	1.()22 9	98 Pav	ed parking	, HSG C						
	26.6	650 8	30 1/2	acre lots, 2	25% imp, H	SGC					
	0.6	590 8	39 Pa	sture/grassl	land/range,	Poor, HSG D					
_	16.1	160 7	70 Wo	ods, Good,	HSG C						
	44.5	572 7	77 We	ighted Ave	rage						
	36.8	387	82.	76% Pervic	ous Area						
	7.6	584	17.	24% Imper	vious Area						
	_										
	Tc	Length	Slope	Velocity	Capacity	Description					
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	13.5	100	0.0300	0.12		Sheet Flow, 100' Lawn sheet flow at 3%					
						Grass: Dense n= 0.240 P2= 2.57"					
	1.5	250	0.0300	2.79		Shallow Concentrated Flow, 250' Shallow concentrated flow at 3%					
						Unpaved Kv= 16.1 fps					
	10.8	1,750	0.0280	2.69		Shallow Concentrated Flow, 1750' Unpaved Shallow concentrated flow at 2.8%					
_						Unpaved Kv= 16.1 fps					
	~ - ~										

25.8 2,100 Total

22352_River Road Watershed Prepared by Engineering Ventures, Inc

HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment D: D DA

Runoff = 7.71 cfs @ 12.10 hrs, Volume= Routed to Link 1 : POINT OF STUDY 1

0.535 af, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 25-YR Rainfall=4.49"

Area	(ac)	CN	Desc	ription		
1.	765	80	1/2 a	cre lots, 2	5% imp, H	SG C
1.	260	70	Woo	ds, Good,	HSG Ċ	
3.	025	76	Weig	hted Aver	age	
2.	584		85.4	1% Pervio	us Area	
0.	441		14.59	3% Imper∖	∕ious Area	
Tc (min)	Length (feet)	ר ני)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100) ()	.0250	0.11		Sheet Flow, 100' Lawn sheet flow at 2.5%
2.5	424	1 0	.0300	2.79		Grass: Dense n= 0.240 P2= 2.57" Shallow Concentrated Flow, 424' Unpaved Shallow concentrated flow at 3% Unpaved Kv= 16.1 fps
17.1	524	I T	otal			

22352_River Road Watershed Prepared by Engineering Ventures, Inc

HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment E: E DA

Runoff = 127.68 cfs @ 12.20 hrs, Volume= 11.290 af, Depth= 2.37" Routed to Link 1 : POINT OF STUDY 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 25-YR Rainfall=4.49"

Area	(ac) C	N Des	cription					
53.	.320 8	30 1/2 a	/2 acre lots, 25% imp, HSG C					
3.	.890 7	70 Woo	ds, Good,	HSG Ċ				
57.	210 7	79 Weig	ghted Avei	age				
43.	880	76.7	0% Pervio	us Area				
13.	.330	23.3	0% Imperv	vious Area				
Тс	Length	Slope	Velocity	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
14.0	100	0.0275	0.12		Sheet Flow, 100' Lawn sheet flow at 2.75%			
					Grass: Dense n= 0.240 P2= 2.57"			
9.8	1,640	0.0300	2.79		Shallow Concentrated Flow, 1640' Unpaved Shallow concentrated flow at 3%			
					Unpaved Kv= 16.1 fps			
2.4	460	0.0390	3.18		Shallow Concentrated Flow, 460' Unpaved Shallow concentrated flow at 3.9%			
					Unpaved Kv= 16.1 fps			

26.2 2,200 Total

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Subcatchment F: POST-F DA

[47] Hint: Peak is 444% of capacity of segment #5

Runoff = 24.22 cfs @ 12.27 hrs, Volume= 2.451 af, Depth= 2.37" Routed to Link 2 : POINT OF STUDY 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 25-YR Rainfall=4.49"

Area (ac)	CN	Description
1.750	74	>75% Grass cover, Good, HSG C
0.630	98	Paved parking, HSG C
4.550	80	1/2 acre lots, 25% imp, HSG C
2.110	89	Pasture/grassland/range, Poor, HSG D
3.380	70	Brush, Fair, HSG C
12.420	79	Weighted Average
10.652		85.77% Pervious Area
1.767		14.23% Impervious Area

Тс	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
23.0	100	0.0080	0.07		Sheet Flow, 100' Lawn sheet flow at 0.8%
					Grass: Dense n= 0.240 P2= 2.57"
2.8	475	0.0300	2.79		Shallow Concentrated Flow, 430' Unpaved Shallow concentrated flow at 3%
					Unpaved Kv= 16.1 fps
1.0	157	0.0240	2.49		Shallow Concentrated Flow, 157' Unpaved Shallow concentrated flow at 2.4%
					Unpaved Kv= 16.1 fps
0.2	30	0.0240	2.32		Shallow Concentrated Flow, 30' Grassed Waterway Shallow concentrated flow at 2.4%
					Grassed Waterway Kv= 15.0 fps
0.1	30	0.0200	6.95	5.46	Pipe Channel, 30' Pipe Flow at 2%
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
					n= 0.012
0.2	30	0.0240	2.32		Shallow Concentrated Flow, 30' Grassed Waterway Shallow concentrated flow at 2.4%
					Grassed Waterway Kv= 15.0 fps
0.6	88	0.0240	2.49		Shallow Concentrated Flow, 68' Unpaved Shallow concentrated flow at 2.4%
					Unpaved Kv= 16.1 fps
4.3	615	0.0114	2.41	28.92	Trap/Vee/Rect Channel Flow, 615' Earth, dense weeds channel flow at 1.14%
					Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00'
					n= 0.070

32.2 1,525 Total

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Pond SS1: EX- A1 CHAMBERS

Node SS1 (Existing A1 Chambers) is modeled after Pond No. 1 - A1 SUBSURFACE from the Stormwater Management Report and Stormwater Pollution Prevention Plan for Iroquois Middle School, prepared by Appel Osborne Landscape Architecture dated January 2023 (Pages 325-326).

[92] Warning: Device #5 is above defined storage

Inflow Area	a =	2.310 ac, 5	8.01% Imp	ervious, Inflow	/ Depth =	3.19"	for 25-Y	R event	
Inflow	=	8.32 cfs @	12.11 hrs,	Volume=	0.613 a	af			
Outflow	=	1.29 cfs @	12.65 hrs,	Volume=	0.581 a	af, Atte	n= 84%,	Lag= 32.5 r	nin
Primary	=	1.29 cfs @	12.65 hrs,	Volume=	0.581 a	af		•	
Routed	to Link	1 : POINT OF	STUDY 1						

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Peak Elev= 300.87' @ 12.65 hrs Storage= 13,470 cf

Plug-Flow detention time= 182.2 min calculated for 0.581 af (95% of inflow) Center-of-Mass det. time= 151.2 min (961.7 - 810.5)

Volume	Invert	Avail.Storage	Storage	Description
#1	298.25'	15,953 cf	Custom	Stage DataListed below
Elevation (feet)	Inc.Sto (cubic-fe	ore Cun eet) (cub	n.Store	
298 25	(0	0	
298.60	7	735	735	
298.95	1,6	610	2,345	
299.30	2,2	250	4,595	
299.65	2,2	201	6,796	
300.00	2,1	18	8,914	
300.35	1,9	993	10,907	
300.70	1,8	311	12,718	
301.05	1,5	534	14,252	
301.40	ç	966	15,218	
301.75	7	735	15,953	

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Device	Routing	Invert	Outlet Devices
#1	Primary	298.25'	12.0" Round Culvert L= 296.0' Ke= 0.600
	-		Inlet / Outlet Invert= 298.25' / 296.50' S= 0.0059 '/' Cc= 0.900
			n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Device 1	298.75'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	300.92'	2.5' long x 0.5' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	301.16'	2.2' long x 0.5' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	303.25'	18.8' long x 0.7' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50
			Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=1.29 cfs @ 12.65 hrs HW=300.87' (Free Discharge)

1=Culvert (Passes 1.29 cfs of 3.75 cfs potential flow)

-2=Orifice/Grate (Orifice Controls 1.29 cfs @ 6.59 fps)

-3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

-4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Pond SS1: EX- A1 CHAMBERS

Summary for Pond SS2: EX-A2 CHAMBERS

Node SS2 (Existing A2 Chambers) is modeled after Pond No. 2 - A2 SUBSURFACE from the Stormwater Management Report and Stormwater Pollution Prevention Plan for Iroquois Middle School, prepared by Appel Osborne Landscape Architecture dated January 2023 (Pages 327-328).

[92] Warning: Device #4 is above defined storage

Inflow Are	a =	3.150 ac, 7	4.29% Imp	ervious,	Inflow Dep	oth =	3.59"	for 25-Y	'R even	t
Inflow	=	14.14 cfs @	12.06 hrs,	Volume	= 0	.943 ;	af			
Outflow	=	0.58 cfs @	13.96 hrs,	Volume	= 0	.943 a	af, Atte	n= 96%,	Lag= 1	14.2 min
Primary	=	0.58 cfs @	13.96 hrs,	Volume	= 0	.943 ;	af		-	
Routed	l to Link	1: POINT OI	STUDY 1							

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Peak Elev= 300.64' @ 13.96 hrs Storage= 24,900 cf

Plug-Flow detention time= 521.2 min calculated for 0.942 af (100% of inflow) Center-of-Mass det. time= 522.6 min (1,313.1 - 790.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	298.58'	37,155 cf	Custom Stage DataListed below	
Elevation (feet)	Inc.Ste (cubic-fe	ore Cum eet) (cubi	n.Store _{vic-feet)}	
298.58		0	0	
298.93	1,7	711	1,711	
299.28	3,7	751	5,462	
299.63	5,2	240 ·	10,702	
299.98	5,1	27 ·	15,829	
300.33	4,9	933 2	20,762	
300.68	4,6	642 2	25,404	
301.03	4,2	219 2	29,623	
301.38	3,5	572 3	33,195	
301.73	2,2	249 :	35,444	
302.08	1,7	711 :	37,155	

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Routing	Invert	Outlet Devices
Primary	298.00'	12.0" Round Culvert L= 215.0' Ke= 0.600
-		Inlet / Outlet Invert= 298.00' / 296.50' S= 0.0070 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
Device 1	298.58'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
Device 1	301.33'	4.7' long x 0.5' breadth Broad-Crested Rectangular Weir
		Head (feet) 0.20 0.40 0.60 0.80 1.00
		Coef. (English) 2.80 2.92 3.08 3.30 3.32
Device 1	303.58'	18.8' long x 0.5' breadth Broad-Crested Rectangular Weir
		Head (feet) 0.20 0.40 0.60 0.80 1.00
		Coef. (English) 2.80 2.92 3.08 3.30 3.32
	Routing Primary Device 1 Device 1 Device 1	RoutingInvertPrimary298.00'Device 1298.58'Device 1301.33'Device 1303.58'

Primary OutFlow Max=0.58 cfs @ 13.96 hrs HW=300.64' (Free Discharge)

1=Culvert (Passes 0.58 cfs of 4.12 cfs potential flow)

-2=Orifice/Grate (Orifice Controls 0.58 cfs @ 6.63 fps)

-3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

-4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond SS2: EX-A2 CHAMBERS



Summary for Link 1: POINT OF STUDY 1

 Inflow Area =
 145.137 ac, 22.47% Impervious, Inflow Depth =
 2.35" for 25-YR event

 Inflow =
 291.20 cfs @
 12.21 hrs, Volume=
 28.410 af

 Primary =
 291.20 cfs @
 12.21 hrs, Volume=
 28.410 af, Atten= 0%, Lag= 0.0 min

 Routed to Link 2 : POINT OF STUDY 2
 2
 2

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs



Link 1: POINT OF STUDY 1

Summary for Link 2: POINT OF STUDY 2

Inflow Area = 157.557 ac, 21.82% Impervious, Inflow Depth = 2.35" for 25-YR event

Inflow = 314.50 cfs @ 12.22 hrs, Volume= 30.861 af

Primary = 314.50 cfs (2) 12.22 hrs, Volume= 30.861 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs

Link 2: POINT OF STUDY 2



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Type II 24-hr	100-YR Rail	nfall=6.11"
	Printed	12/5/2023
		Page 32

Time span=0.00-98.00 hrs. dt=0.05 hrs. 1961 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method SubcatchmentA1: A1 DA Runoff Area=2.310 ac 58.01% Impervious Runoff Depth=4.73" Flow Length=200' Slope=0.0150 '/' Tc=18.7 min CN=88 Runoff=12.15 cfs 0.911 af SubcatchmentA2: A2 DA Runoff Area=3.150 ac 74.29% Impervious Runoff Depth=5.18" Flow Length=91' Tc=14.3 min CN=92 Runoff=19.96 cfs 1.359 af SubcatchmentB: B DA Runoff Area=34.870 ac 21.45% Impervious Runoff Depth=3.78" Flow Length=2,693' Tc=32.9 min CN=79 Runoff=107.57 cfs 10.978 af SubcatchmentC: C DA Runoff Area=44.572 ac 17.24% Impervious Runoff Depth=3.58" Flow Length=2,100' Tc=25.8 min CN=77 Runoff=151.91 cfs 13.280 af Runoff Area=3.025 ac 14.59% Impervious Runoff Depth=3.48" SubcatchmentD: D DA Flow Length=524' Tc=17.1 min CN=76 Runoff=12.66 cfs 0.876 af SubcatchmentE: E DA Runoff Area=57.210 ac 23.30% Impervious Runoff Depth=3.78" Flow Length=2,200' Tc=26.2 min CN=79 Runoff=203.96 cfs 18.012 af SubcatchmentF: POST-FDA Runoff Area=12.420 ac 14.23% Impervious Runoff Depth=3.78" Flow Length=1,525' Tc=32.2 min CN=79 Runoff=38.78 cfs 3.910 af Pond SS1: EX- A1 CHAMBERS Peak Elev=311.04' Storage=15,953 cf Inflow=12.15 cfs 0.911 af Outflow=7.59 cfs 0.878 af Pond SS2: EX-A2CHAMBERS Peak Elev=301.53' Storage=34,132 cf Inflow=19.96 cfs 1.359 af Outflow=1.84 cfs 1.359 af Link 1: POINT OF STUDY 1 Inflow=471.90 cfs 45.383 af Primary=471.90 cfs 45.383 af

Inflow=509.47 cfs 49.293 af Primary=509.47 cfs 49.293 af

Link 2: POINT OF STUDY 2

Total Runoff Area = 157.557 ac Runoff Volume = 49.326 af Average Runoff Depth = 3.76" 78.18% Pervious = 123.174 ac 21.82% Impervious = 34.383 ac

Summary for Subcatchment A1: A1 DA

Runoff = 12.15 cfs @ 12.10 hrs, Volume= 0 Routed to Pond SS1 : EX- A1 CHAMBERS

0.911 af, Depth= 4.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 100-YR Rainfall=6.11"

Area	(ac) (CN	Desc	ription		
0.	970	74	>75%	6 Grass co	over, Good	, HSG C
1.	340	98	Pave	d parking	, HSG C	
2.	310	88	Weig	hted Aver	age	
0.	970		41.99	9% Pervio	us Area	
1.	340		58.0	1% Imper\	∕ious Area	
_		_				
Tc	Length	S	Slope	Velocity	Capacity	Description
<u>(min)</u>	(teet)		(ft/ft)	(ft/sec)	(cts)	
17.9	100	0.0	0150	0.09		Sheet Flow, 100' Lawn sheet flow at 1.5%
						Grass: Dense n= 0.240 P2= 2.57"
0.8	100	0.0	0150	1.97		Shallow Concentrated Flow, 100' Unpaved Shallow concentrated flow at 1.5%
						Unpaved Kv= 16.1 fps
18.7	200	Тс	otal			

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC


Summary for Subcatchment A2: A2 DA

Runoff = 19.96 cfs @ 12.05 hrs, Volume= Routed to Pond SS2 : EX-A2 CHAMBERS 1.359 af, Depth= 5.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 100-YR Rainfall=6.11"

_	Area	(ac) C	N Des	cription								
	0.	810 7	74 >75	>75% Grass cover, Good, HSG C								
	2.	010 9	98 Pav	ed parking	, HSG C							
_	0.	330 9	98 Roo	fs, HSG C								
	3.	150 9	92 Wei	ghted Avei	rage							
	0.	810	25.7	1% Pervio	us Area							
	2.	340	74.2	9% Imperv	vious Area							
	_				_							
	TC	Length	Slope	Velocity	Capacity	Description						
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cts)							
	3.3	14	0.0200	0.07		Sheet Flow, 14' Lawn sheet flow at 2.0%						
						Grass: Dense n= 0.240 P2= 2.57"						
	0.2	8	0.0150	0.66		Sheet Flow, 8' Pavement sheet flow at 1.5%						
						Smooth surfaces n= 0.011 P2= 2.57"						
	10.8	69	0.0250	0.11		Sheet Flow, 69' Lawn sheet flow at 2.5%						
_						Grass: Dense n= 0.240 P2= 2.57"						
	14.3	91	Total									



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment B: B DA

Runoff = 107.57 cfs @ 12.27 hrs, Volume= Routed to Link 1 : POINT OF STUDY 1

10.978 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 100-YR Rainfall=6.11"

Area	(ac) C	N Des	cription								
0.	140 8	39 Grav	vel roads,	HSG C							
11.	170 7	74 >75	>75% Grass cover, Good, HSG C								
2.	740 9	98 Pav	ed parking	, HSG C							
8.	560 8	30 1/2 a	acre lots, 2	25% imp, H	SG C						
2.	600 9	98 Roo	fs, HSG C								
1.	960 8	39 Pas	ture/grassl	and/range,	Poor, HSG D						
7.	700 7	70 Woo	ods, Good,	HSG C							
34.	870 7	79 Wei	ghted Avei	rage							
27.	390	78.5	5% Pervio	ous Area							
7.	480	21.4	5% Imperv	vious Area							
Tc	Length	Slope	Velocity	Capacity	Description						
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
14.6	100	0.0250	0.11		Sheet Flow, 100' Lawn sheet flow at 2.5%						
					Grass: Dense n= 0.240 P2= 2.57"						
5.4	897	0.0300	2.79		Shallow Concentrated Flow, 610'+287' Unpaved Shallow concentrated flow at 3%						
					Unpaved Kv= 16.1 fps						
0.9	233	0.0800	4.55		Shallow Concentrated Flow, 233' Unpaved Shallow concentrated flow at 8%						
					Unpaved Kv= 16.1 fps						
12.0	1,463	0.0160	2.04		Shallow Concentrated Flow, 1463' Unpaved Shallow concentrated flow at 1.6%						
					Unpaved Kv= 16.1 fps						
32.9	2,693	Total									



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment C: C DA

Runoff = 151.91 cfs @ 12.19 hrs, Volume= 13. Routed to Link 1 : POINT OF STUDY 1

13.280 af, Depth= 3.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 100-YR Rainfall=6.11"

_	Area (ac) C	N De	scription		
	0.0)50 8	39 Gr	avel roads,	HSG C	
	1.0)22 9	98 Pa	ved parking	J, HSG C	
	26.6	650 8	30 1/2	2 acre lots, 2	25% imp, H	SGC
	0.6	690 8	39 Pa	sture/grass	land/range,	Poor, HSG D
_	16.1	160 7	70 W	oods, Good	, HSG C	
	44.5	572 7	77 W	eighted Ave	rage	
	36.8	387	82	.76% Pervic	ous Area	
	7.6	684	17	.24% Imper	vious Area	
	-				o :.	
	IC	Length	Slop	e Velocity	Capacity	Description
_	(min)	(feet)	(ft/f) (ft/sec)	(cfs)	
	13.5	100	0.030	0.12		Sheet Flow, 100' Lawn sheet flow at 3%
						Grass: Dense n= 0.240 P2= 2.57"
	1.5	250	0.030) 2.79		Shallow Concentrated Flow, 250' Shallow concentrated flow at 3%
						Unpaved Kv= 16.1 fps
	10.8	1,750	0.028	2.69		Shallow Concentrated Flow, 1750' Unpaved Shallow concentrated flow at 2.8%
_						Unpaved Kv= 16.1 fps

25.8 2,100 Total



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment D: D DA

Runoff = 12.66 cfs @ 12.09 hrs, Volume= 0. Routed to Link 1 : POINT OF STUDY 1

0.876 af, Depth= 3.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 100-YR Rainfall=6.11"

Area	(ac) (CN	Desc	ription		
1.	765	80	1/2 a	cre lots, 2	5% imp, H	SG C
1.	260	70	Woo	ds, Good,	HSG Ċ	
3.	025	76	Weig	hted Aver	age	
2.	584		85.4	1% Pervio	us Area	
0.	441		14.59	9% Imper\	∕ious Area	
_						
Tc	Length		Slope	Velocity	Capacity	Description
(min)	(teet)		<u>(†t/†t)</u>	(ft/sec)	(cts)	
14.6	100	0.	0250	0.11		Sheet Flow, 100' Lawn sheet flow at 2.5%
						Grass: Dense n= 0.240 P2= 2.57"
2.5	424	0.	.0300	2.79		Shallow Concentrated Flow, 424' Unpaved Shallow concentrated flow at 3%
						Unpaved Kv= 16.1 fps
17.1	524	- To	otal			



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment E: E DA

Runoff = 203.96 cfs @ 12.20 hrs, Volume= 18.012 af, Depth= 3.78" Routed to Link 1 : POINT OF STUDY 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 100-YR Rainfall=6.11"

i (ac) – C	N Des	cription						
3.320	80 1/2	1/2 acre lots, 25% imp, HSG C						
3.890	70 Woo	ods, Good,	HSG Ċ					
7.210	79 Wei	ghted Ave	rage					
43.880 76.70% Pervious Area			us Area					
13.330 23.30% Impervious Area			vious Area					
Length	Slope	Velocity	Capacity	Description				
(feet)	(ft/ft)	(ft/sec)	(cfs)					
100	0.0275	0.12		Sheet Flow, 100' Lawn sheet flow at 2.75%				
				Grass: Dense n= 0.240 P2= 2.57"				
1,640	0.0300	2.79		Shallow Concentrated Flow, 1640' Unpaved Shallow concentrated flow at 3%				
				Unpaved Kv= 16.1 fps				
460	0.0390	3.18		Shallow Concentrated Flow, 460' Unpaved Shallow concentrated flow at 3.9%				
				Unpaved Kv= 16.1 fps				
	(ac) C .320 8 .890	(ac) CN Des .320 80 1/2 .890 70 Woo .210 79 Wei .880 76.7 .330 23.3 Length Slope (feet) (ft/ft) 100 0.0275 1,640 0.0300 460 0.0390	(ac) CN Description .320 80 1/2 acre lots, 2 .890 70 Woods, Good, .210 79 Weighted Aver .880 76.70% Pervic .330 23.30% Impervic Length Slope Velocity (feet) (ft/ft) (ft/sec) 100 0.0275 0.12 1,640 0.0300 2.79 460 0.0390 3.18	(ac) CN Description .320 80 1/2 acre lots, 25% imp, Hi .890 70 Woods, Good, HSG C .210 79 Weighted Average .880 76.70% Pervious Area .330 23.30% Impervious Area Length Slope Velocity (feet) (ft/ft) (ft/sec) (cfs) 100 0.0275 0.12 1,640 0.0300 2.79 460 0.0390 3.18				

26.2 2,200 Total

22352_River Road Watershed Prepared by Engineering Ventures, Inc

HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Subcatchment F: POST-F DA

[47] Hint: Peak is 711% of capacity of segment #5 [47] Hint: Peak is 134% of capacity of segment #8

Runoff = 38.78 cfs @ 12.27 hrs, Volume= 3.910 af, Depth= 3.78" Routed to Link 2 : POINT OF STUDY 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Type II 24-hr 100-YR Rainfall=6.11"

Area (ac)	CN	Description
1.750	74	>75% Grass cover, Good, HSG C
0.630	98	Paved parking, HSG C
4.550	80	1/2 acre lots, 25% imp, HSG C
2.110	89	Pasture/grassland/range, Poor, HSG D
3.380	70	Brush, Fair, HSG C
12.420	79	Weighted Average
10.652		85.77% Pervious Area
1.767		14.23% Impervious Area

22352_River Road Watershed Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
23.0	100	0.0080	0.07		Sheet Flow, 100' Lawn sheet flow at 0.8%
					Grass: Dense n= 0.240 P2= 2.57"
2.8	475	0.0300	2.79		Shallow Concentrated Flow, 430' Unpaved Shallow concentrated flow at 3%
					Unpaved Kv= 16.1 fps
1.0	157	0.0240	2.49		Shallow Concentrated Flow, 157' Unpaved Shallow concentrated flow at 2.4%
					Unpaved Kv= 16.1 fps
0.2	30	0.0240	2.32		Shallow Concentrated Flow, 30' Grassed Waterway Shallow concentrated flow at 2.4%
					Grassed Waterway Kv= 15.0 fps
0.1	30	0.0200	6.95	5.46	Pipe Channel, 30' Pipe Flow at 2%
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
					n= 0.012
0.2	30	0.0240	2.32		Shallow Concentrated Flow, 30' Grassed Waterway Shallow concentrated flow at 2.4%
					Grassed Waterway Kv= 15.0 fps
0.6	88	0.0240	2.49		Shallow Concentrated Flow, 68' Unpaved Shallow concentrated flow at 2.4%
					Unpaved Kv= 16.1 fps
4.3	615	0.0114	2.41	28.92	Trap/Vee/Rect Channel Flow, 615' Earth, dense weeds channel flow at 1.14%
					Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00'
					n= 0.070

32.2 1,525 Total



Summary for Pond SS1: EX- A1 CHAMBERS

Node SS1 (Existing A1 Chambers) is modeled after Pond No. 1 - A1 SUBSURFACE from the Stormwater Management Report and Stormwater Pollution Prevention Plan for Iroquois Middle School, prepared by Appel Osborne Landscape Architecture dated January 2023 (Pages 325-326).

[92] Warning: Device #5 is above defined storage [93] Warning: Storage range exceeded by 9.29'

 Inflow Area =
 2.310 ac, 58.01% Impervious, Inflow Depth = 4.73" for 100-YR event

 Inflow =
 12.15 cfs @ 12.10 hrs, Volume=
 0.911 af

 Outflow =
 7.59 cfs @ 12.27 hrs, Volume=
 0.878 af, Atten= 38%, Lag= 9.6 min

 Primary =
 7.59 cfs @ 12.27 hrs, Volume=
 0.878 af

 Routed to Link 1 : POINT OF STUDY 1
 0.878 af

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Peak Elev= 311.04'@ 12.26 hrs Storage= 15,953 cf

Plug-Flow detention time= 147.6 min calculated for 0.878 af (96% of inflow) Center-of-Mass det. time= 125.3 min (924.7 - 799.4)

Volume	Invert	Avail.Storage	Storage	Description			
#1	298.25'	15,953 cf	Custom	Stage DataListed below			
Elevation	Inc.St	ore Cun	n.Store				
(feet)	(cubic-fe	et) (cub	ic-feet)				
298.25		0	0				
298.60	7	'35	735				
298.95	1,6	510	2,345				
299.30	2,2	250	4,595				
299.65	2,2	201	6,796				
300.00	2,1	18	8,914				
300.35	1,9	93	10,907				
300.70	1,8	811	12,718				
301.05	1,5	534	14,252				
301.40	ģ	66	15,218				
301.75	7	'35	15.953				

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Device	Routing	Invert	Outlet Devices
#1	Primary	298.25'	12.0" Round Culvert L= 296.0' Ke= 0.600
	-		Inlet / Outlet Invert= 298.25' / 296.50' S= 0.0059 '/' Cc= 0.900
			n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#2	Device 1	298.75'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	300.92'	2.5' long x 0.5' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	301.16'	2.2' long x 0.5' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	303.25'	18.8' long x 0.7' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50
			Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=7.16 cfs @ 12.27 hrs HW=309.78' (Free Discharge) 1=Culvert (Barrel Controls 7.16 cfs @ 9.12 fps) 2=Orifice/Grate (Passes < 3.10 cfs potential flow)

-3=Broad-Crested Rectangular Weir(Passes < 218.92 cfs potential flow)

-4=Broad-Crested Rectangular Weir(Passes < 184.88 cfs potential flow)

-5=Broad-Crested Rectangular Weir (Passes < 1,041.72 cfs potential flow)



Summary for Pond SS2: EX-A2 CHAMBERS

Node SS2 (Existing A2 Chambers) is modeled after Pond No. 2 - A2 SUBSURFACE from the Stormwater Management Report and Stormwater Pollution Prevention Plan for Iroquois Middle School, prepared by Appel Osborne Landscape Architecture dated January 2023 (Pages 327-328).

[92] Warning: Device #4 is above defined storage

Inflow Are	ea =	3.150 ac, 7	4.29% Imp	ervious,	Inflow Depth =	5.1	18" for	100-	YR even	t
Inflow	=	19.96 cfs @	12.05 hrs,	Volume	= 1.359	af				
Outflow	=	1.84 cfs @	12.71 hrs,	Volume	= 1.359	af,	Atten=	91%,	Lag= 39	.2 min
Primary	=	1.84 cfs @	12.71 hrs,	Volume	= 1.359	af			-	
Routed	d to Li	nk 1 : POINT OF	STUDY 1							

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs Peak Elev= 301.53' @ 12.71 hrs Storage= 34,132 cf

Plug-Flow detention time=554.9 min calculated for 1.358 af (100% of inflow) Center-of-Mass det. time= 556.2 min (1,337.1 - 780.9)

Volume	Invert /	Avail.Storage	Storage	e Description
#1	298.58'	37,155 cf	Custor	m Stage DataListed below
Elevation (feet)	Inc.Sto (cubic-fe	ore Cun et) (cubi	n.Store ic-feet)	
298.58		0	0	
298.93	1,7	'11	1,711	
299.28	3,7	'51	5,462	
299.63	5,2	240	10,702	
299.98	5,1	27	15,829	
300.33	4,9	33	20,762	
300.68	4,6	42	25,404	
301.03	4,2	19	29,623	
301.38	3,5	572	33,195	
301.73	2,2	49	35,444	
302.08	1,7	'11 :	37,155	

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Device	Routing	Invert	Outlet Devices
#1	Primary	298.00'	12.0" Round Culvert L= 215.0' Ke= 0.600
			Inlet / Outlet Invert= 298.00' / 296.50' S= 0.0070 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	298.58'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	301.33'	4.7' long x 0.5' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	303.58'	18.8' long x 0.5' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.84 cfs @ 12.71 hrs HW=301.53' (Free Discharge)

1=Culvert (Passes 1.84 cfs of 4.66 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.70 cfs @ 8.03 fps)

-3=Broad-Crested Rectangular Weir (Weir Controls 1.14 cfs @ 1.24 fps)

-4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond SS2: EX-A2 CHAMBERS



Summary for Link 1: POINT OF STUDY 1

 Inflow Area =
 145.137 ac, 22.47% Impervious, Inflow Depth =
 3.75" for 100-YR event

 Inflow =
 471.90 cfs @
 12.21 hrs, Volume=
 45.383 af

 Primary =
 471.90 cfs @
 12.21 hrs, Volume=
 45.383 af, Atten= 0%, Lag= 0.0 min

 Routed to Link 2 : POINT OF STUDY 2

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs



Link 1: POINT OF STUDY 1

Prepared by Engineering Ventures, Inc HvdroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Link 2: POINT OF STUDY 2

Inflow Area = 157.557 ac, 21.82% Impervious, Inflow Depth = 3.75" for 100-YR event

Inflow 509.47 cfs @ 12.21 hrs, Volume= 49.293 af =

509.47 cfs @ 12.21 hrs, Volume= Primary = 49.293 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.05 hrs

Hydrograph

Link 2: POINT OF STUDY 2





Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event	Storm Type	Curve	Mode	Duration	B/B	Depth	AMC
	Name				(hours)		(inches)	
1	1-YR	Type II 24-hr		Default	24.00	1	2.18	2
2	10-YR	Type II 24-hr		Default	24.00	1	3.66	2
3	100-YR	Type II 24-hr		Default	24.00	1	6.11	2

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area	CN	Description
(acres)		(subcatchment-numbers)
1.975	61	>75% Grass cover, Good, HSG B (1S, 3S, 4S, 5S, 6S, 7S)
0.033	98	Future Impervious Area (4S, 5S, 7S)
0.075	98	Impervious, HSG C (3S)
0.495	98	Paved parking, HSG B (1S, 4S, 5S, 6S, 7S)
4.330	55	Woods, Good, HSG B (1S, 2S, 3S, 6S, 7S)
6.908	60	TOTAL AREA

Printed 12/8/2023 Page 3

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Soil Listing (all nodes)

A	rea	Soil	Subcatchment
(ac	res)	Group	Numbers
0.	000	HSG A	
6.	800	HSG B	1S, 2S, 3S, 4S, 5S, 6S, 7S
0.	075	HSG C	3S
0.	000	HSG D	
0.	033	Other	4S, 5S, 7S
6.	908		TOTAL AREA

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Ground Covers (all nodes)

HSG-A	HSG-B	HSG-C	HSG-D	Other	Total	Ground	Subcatchment
 (acres)	(acres)	(acres)	(acres)	(acres)	(acres)	Cover	Numbers
0.000	1.975	0.000	0.000	0.000	1.975	>75% Grass cover, Good	1S, 3S, 4S, 5S, 6S, 7S
0.000	0.000	0.000	0.000	0.033	0.033	Future Impervious Area	4S, 5S, 7S
0.000	0.000	0.075	0.000	0.000	0.075	Impervious	3S
0.000	0.495	0.000	0.000	0.000	0.495	Paved parking	1S, 4S, 5S, 6S, 7S
0.000	4.330	0.000	0.000	0.000	4.330	Woods, Good	1S, 2S, 3S, 6S, 7S
0.000	6.800	0.075	0.000	0.033	6.908	TOTAL AREA	

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Pipe Listing (all nodes)

	Line#	Node	In-Invert	Out-Invert	Length	Slope	n	Width	Diam/Height	Inside-Fill	Node
_		Number	(feet)	(feet)	(feet)	(ft/ft)		(inches)	(inches)	(inches)	Name
	1	1P	296.00	295.81	38.0	0.0050	0.010	0.0	6.0	0.0	Bioretention Lot 1
	2	2P	288.00	287.75	28.0	0.0089	0.010	0.0	6.0	0.0	Bioretention Lot 2
	3	3P	292.00	291.75	30.0	0.0083	0.010	0.0	6.0	0.0	Bioretention Lot 3

Time span=0.00-98.00 hrs, dt=0.02 hrs, 4901 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: PRE-DEV POI #1	Runoff Area=1.652 ac 8.05% Impervious Runoff Depth=0.10" Flow Length=245' Tc=27.7 min CN=60 Runoff=0.03 cfs 0.013 af
Subcatchment2S: PRE-DEV POI #2	Runoff Area=1.802 ac 0.00% Impervious Runoff Depth=0.03" Flow Length=275' Tc=24.5 min CN=55 Runoff=0.01 cfs 0.005 af
Subcatchment3S: POST-DEVPOI #1	Runoff Area=1.205 ac 6.22% Impervious Runoff Depth=0.10" Flow Length=245' Tc=22.7 min CN=60 Runoff=0.02 cfs 0.010 af
Subcatchment4S: POST-BioretentionLot 1	Runoff Area=0.152 ac 51.32% Impervious Runoff Depth=0.68" Tc=6.0 min CN=80 Runoff=0.18 cfs 0.009 af
Subcatchment5S: POST-BioretentionLot 2	Runoff Area=0.295 ac 31.19% Impervious Runoff Depth=0.40" Tc=6.0 min CN=73 Runoff=0.19 cfs 0.010 af
Subcatchment6S: POST-DEVPOI #2	Runoff Area=1.338 ac 0.52% Impervious Runoff Depth=0.05" Flow Length=275' Tc=24.2 min CN=57 Runoff=0.01 cfs 0.006 af
Subcatchment7S: POST-BioretentionLot 3	Runoff Area=0.464 ac 46.98% Impervious Runoff Depth=0.59" Tc=6.0 min CN=78 Runoff=0.47 cfs 0.023 af
Pond 1P: BioretentionLot 1	Peak Elev=299.35' Storage=373 cf Inflow=0.18 cfs 0.009 af Outflow=0.00 cfs 0.000 af
Pond 2P: Bioretention Lot 2	Peak Elev=291.20' Storage=432 cf Inflow=0.19 cfs 0.010 af Outflow=0.00 cfs 0.000 af
Pond 3P: Bioretention Lot 3	Peak Elev=295.18' Storage=991 cf Inflow=0.47 cfs 0.023 af Outflow=0.00 cfs 0.000 af
Link 1Lc: POI #1	Inflow=0.02 cfs 0.010 af Primary=0.02 cfs 0.010 af

22352 2890 River Road Subdivision	Type II 24-hr 1-YR Rainfall=2.18"
Prepared by Engineering Ventures, Inc	Printed 12/8/2023
HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Softwar	Solutions LLC Page 8
Link 1Lv: POI #1	Inflow=0.03 cfs_0.013 af
	Primary=0.03 cfs 0.013 af
Link 2Lc: POI #2	Inflow=0.01 cfs_0.006 af
	Primary=0.01 cfs 0.006 af
Link 2Lv: POI #2	Inflow=0.01 cfs_0.005 af
	Primary=0.01 cfs 0.005 af
Link 3Lc: TOTALSITE	Inflow=0.02 cfs_0.016 af
	Primary=0.02 cfs 0.016 af
Link 3Lv: TOTAL SITE	Inflow=0.03 cfs_0.018 af
	Primary=0.03 cfs 0.018 af
Тс	al Runoff Area = 6.908 ac Runoff Volume = 0.075 af Average Runoff Depth = 0.13" 91.27% Pervious = 6.305 ac 8.73% Impervious = 0.603 ac

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: PRE-DEV POI #1

Runoff = 0.03 cfs @ 12.67 hrs, Volume= Routed to Link 1Lv : POI #1 0.013 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 1-YR Rainfall=2.18"

(ac) C	N De	scription		
974 5	55 Wo	ods, Good,	HSG B	
545 6	51 >7	5% Grass c	over, Good	, HSG B
133 9	98 Pa	/ed parking	, HSG B	
652 6	60 We	ighted Ave	rage	
519	91.	95% Pervic	ous Area	
133	8.0	5% Impervi	ous Area	
	~			
Length	Slope	e Velocity	Capacity	Description
(feet)	(ft/ft	(ft/sec)	(cfs)	
29	0.0170	0.08		Sheet Flow, 29' Lawn Sheet Flow at 1.7%
				Grass: Dense n= 0.240 P2= 2.57"
71	0.0170	0.06		Sheet Flow, 71' Sheet Flow at 1.7%
				Woods: Light underbrush n= 0.400 P2= 2.57"
64	0.0360	0.95		Shallow Concentrated Flow, 64' Shallow Concentrated Flow at 3.6%
				Woodland Kv= 5.0 fps
81	0.0900	1.50		Shallow Concentrated Flow, 81' Shallow Concentrated Flow at 9.0%
				Woodland Kv= 5.0 tps
	ac) C 974 5 545 6 133 5 552 6 519 133 Length (feet) 29 71 64 81	ac) CN Des 974 55 Wo 545 61 >75 133 98 Pave 552 60 We 519 91.1 133 8.0 Length Slope (feet) (ft/ft) 29 0.0170 64 0.0360 81 0.0900	ac) CN Description 974 55 Woods, Good, 545 61 >75% Grass c 133 98 Paved parking 552 60 Weighted Ave 519 91.95% Pervic 133 8.05% Impervic Length Slope Velocity (feet) (ft/ft) (ft/sec) 29 0.0170 0.08 71 0.0360 0.95 81 0.0900 1.50	ac) CN Description 974 55 Woods, Good, HSG B 545 61 >75% Grass cover, Good 133 98 Paved parking, HSG B 552 60 Weighted Average 519 91.95% Pervious Area 133 8.05% Impervious Area 133 8.05% Impervious Area Length Slope Velocity Capacity (feet) (ft/ft) (ft/sec) (cfs) 29 0.0170 0.08 71 0.0360 0.95 81 0.0900 1.50 1.50 1.50

27.7 245 Total



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 2S: PRE-DEV POI #2

Runoff = 0.01 cfs @ 15.60 hrs, Volume= Routed to Link 2Lv : POI #2 0.005 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 1-YR Rainfall=2.18"

Area	(ac) C	N Desc	cription			
1.	802 5	5 Woo	ds, Good,	HSG B		_
1.	802	100.	00% Pervi	ious Area		_
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
21.6	100	0.0260	0.08		Sheet Flow, 100' Sheet Flow at 2.6%	-
2.9	175	0.0400	1.00		Woods: Light underbrush n= 0.400 P2= 2.57" Shallow Concentrated Flow, 175' Shallow Concentrated Flow at 4% Woodland Kv= 5.0 fps	
24.5	275	Total				



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 3S: POST-DEV POI #1

Runoff = 0.02 cfs @ 12.58 hrs, Volume= Routed to Link 1Lc : POI #1 0.010 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 1-YR Rainfall=2.18"

	Area	(ac) (CN	Desc	ription		
	0.	563	55	Woo	ds, Good,	HSG B	
	0.	567	61	>75%	6 Grass co	over, Good	, HSG B
*	0.	075	98	Impe	rvious, HS	SG C	
	1.	205	60	Weig	hted Aver	age	
	1.	130		93.78	8% Pervio	us Area	
	0.	075		6.229	% Impervi	ous Area	
	Тс	Length	S	Slope	Velocity	Capacity	Description
	(min)	(feet)		(ft/ft)	(ft/sec)	(cfs)	
	4.3	29	0.0	0170	0.11		Sheet Flow, 29' Lawn Sheet Flow at 1.7%
							Grass: Short n= 0.150 P2= 2.57"
	12.0	39	0.0	0170	0.05		Sheet Flow, 39' Sheet Flow at 1.7%
							Woods: Light underbrush n= 0.400 P2= 2.57"
	4.7	32	0.0	0170	0.11		Sheet Flow, 32' Sheet Flow at 1.7%
							Grass: Short n= 0.150 P2= 2.57"
	0.8	64	0.0	0360	1.33		Shallow Concentrated Flow, 64' Shallow Concentrated Flow at 3.6%
							Short Grass Pasture Kv= 7.0 fps
	0.9	81	0.0	0900	1.50		Shallow Concentrated Flow, 81' Shallow Concentrated Flow at 9.0%
							Woodland Kv= 5.0 fps

22.7 245 Total

(cfs)

Flow

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Time (hours)

Summary for Subcatchment 4S: POST-Bioretention Lot 1

Runoff = 0.18 cfs @ 11.98 hrs, Volume= Routed to Pond 1P : Bioretention Lot 1

0.009 af, Depth= 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 1-YR Rainfall=2.18"

_	Area	(ac)	CN	Desc	ription		
	0.	067	98	Pave	d parking,	HSG B	
	0.	074	61	>75%	6 Grass co	over, Good,	HSG B
*	0.	011	98	Futu	re Impervi	ous Area	
	0.	152	80	Weig	hted Aver	age	
	0.	074		48.68	8% Pervio	us Area	
	0.	078		51.32	2% Imperv	vious Area	
	Тс	Lengt	h	Slope	Velocity	Capacity	Description
_	(min)	(feet	t)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry, Assumed Minimum

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HvdroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Subcatchment 4S: POST-Bioretention Lot 1
Summary for Subcatchment 5S: POST-Bioretention Lot 2

Runoff = 0.19 cfs @ 11.99 hrs, Volume= Routed to Pond 2P : Bioretention Lot 2

0.010 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 1-YR Rainfall=2.18"

_	Area (ac)	CN	Desc	cription		
	0.0)81	98	Pave	ed parking,	, HSG B	
	0.2	203	61	>75%	6 Grass co	over, Good,	HSG B
*	0.0)11	98	Futu	re Impervi	ous Area	
	0.2	295	73	Weig	hted Aver	age	
	0.2	203		68.8	1% Pervio	us Area	
	0.0)92		31.19	9% Imperv	vious Area	
	Tc	Length	n S	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry, Assumed Minimium

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HvdroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Subcatchment 5S: POST-Bioretention Lot 2

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 6S: POST-DEV POI #2

Runoff = 0.01 cfs @ 13.68 hrs, Volume= Routed to Link 2Lc : POI #2 0.006 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 1-YR Rainfall=2.18"

Area	(ac) C	N De	scription		
0.	954 క	55 Wo	ods, Good,	HSG B	
0.	377 6	61 >7	5% Grass c	over, Good	, HSG B
0.	007 9	98 Pa	ved parking	, HSG B	
1.	338 5	57 W	eighted Ave	rage	
1.	331	99	48% Pervic	ous Area	
0.	007	0.5	2% Impervi	ious Area	
Тс	Length	Slop	e Velocity	Capacity	Description
(min)	(feet)	(ft/ft) (ft/sec)	(cfs)	
21.6	100	0.026	0.08		Sheet Flow, 100' Sheet Flow at 2.6%
					Woods: Light underbrush n= 0.400 P2= 2.57"
1.5	93	0.040) 1.00		Shallow Concentrated Flow, 93' Shallow Concentrated Flow at 4%
					Woodland Kv= 5.0 fps
0.7	62	0.040) 1.40		Shallow Concentrated Flow, 62' Shallow Concentrated Flow at 4%
					Short Grass Pasture Kv= 7.0 fps
0.3	20	0.040	0 1.00		Shallow Concentrated Flow, 20' Shallow Concentrated Flow at 4%
					Woodland Kv= 5.0 fps
24.2	275	Total			

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Subcatchment 7S: POST-Bioretention Lot 3

Runoff = 0.47 cfs @ 11.98 hrs, Volume= Routed to Pond 3P : Bioretention Lot 3

0.023 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 1-YR Rainfall=2.18"

_	Area (ac)	CN	Desc	cription		
	0.207	98	Pave	ed parking	, HSG B	
	0.209	61	>75%	% Grass co	over, Good	HSG B
	0.037	55	Woo	ds, Good,	HSG B	
*	0.011	98	Futu	re Impervi	ous Area	
	0.464	78	Weig	ghted Aver	age	
	0.246		53.0	2% Pervio	us Area	
	0.218		46.9	8% Imper\	/ious Area	
	Tc Ler	igth	Slope	Velocity	Capacity	Description
_	<u>(min)</u> (fe	eet)	(ft/ft)	(ft/sec)	(cfs)	
	6.0					Direct Entry, Assumed Minimum

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc

HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Pond 1P: Bioretention Lot 1

 Inflow Area =
 0.152 ac, 51.32% Impervious, Inflow Depth =
 0.68" for 1-YR event

 Inflow =
 0.18 cfs @
 11.98 hrs, Volume=
 0.009 af

 Outflow =
 0.00 cfs @
 0.00 hrs, Volume=
 0.000 af, Atten= 100%, Lag= 0.0 min

 Primary =
 0.00 cfs @
 0.00 hrs, Volume=
 0.000 af

 Routed to Link 1Lc : POI #1
 1
 1

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Peak Elev= 299.35' @ 24.36 hrs Surf.Area= 508 sf Storage= 373 cf

Plug-Flow detention time=(not calculated: initial storage exceeds outflow) Center-of-Mass det. time=(not calculated: no outflow)

Volume	Inve	rt Ava	il.Storage	Storage Descript	tion			
#1	296.50	כ'	1,139 cf	Custom Stage	Data (Prismatio	Listed below (Recalc)		
Elevatio (fee	n S	Surf.Area (sɑ-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)			
296.5	0	417 417	0.0	0 209	0 209			
299.5 300.0 300.5	0 0 0	545 686 842	100.0 100.0 100.0	241 308 382	449 757 1,139			
Device	Routing	In	vert Out	let Devices	·			
#1	Primary	296.00' 6.0'' Inlei n= (' Round Culvert L= 38.0' CPP, square edge headwall, Ke= 0.500 t / Outlet Invert= 296.00' / 295.81' S= 0.0050 '/' Cc= 0.900				
#2 #3	Device 1 Device 1	vice 1 299.50' 3.0" vice 1 300.40' 6.0"		Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads				

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=296.50' (Free Discharge)

1=Culvert (Passes 0.00 cfs of 0.42 cfs potential flow)

2=Orifice/Grate (Controls 0.00 cfs)

-3=Orifice/Grate (Controls 0.00 cfs)

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Pond 2P: Bioretention Lot 2

 Inflow Area =
 0.295 ac, 31.19% Impervious, Inflow Depth =
 0.40" for 1-YR event

 Inflow =
 0.19 cfs @
 11.99 hrs, Volume=
 0.010 af

 Outflow =
 0.00 cfs @
 0.00 hrs, Volume=
 0.000 af, Atten= 100%, Lag= 0.0 min

 Primary =
 0.00 cfs @
 0.00 hrs, Volume=
 0.000 af

 Routed to Link 1Lc : POI #1
 1
 1

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Peak Elev= 291.20' @ 24.36 hrs Surf.Area= 675 sf Storage= 432 cf

Plug-Flow detention time=(not calculated: initial storage exceeds outflow) Center-of-Mass det. time=(not calculated: no outflow)

Volume	Inve	rt Ava	il.Storage	Storage Descrip	tion			
#1	288.5	0'	1,609 cf	Custom Stage I	Data (Prismatio	Listed below (Recalc)		
Elevatio	n :	Surf.Area	Voids	Inc.Store	Cum.Store			
	()	(sq-it)	(70)					
288.5	0	608	0.0	0	0			
291.0	0	608	20.0	304	304			
291.5	0	776	100.0	346	650			
292.0	0	955	100.0	433	1,083			
292.5	0	1,151	100.0	527	1,609			
Device	Routing	In	vert Ou	tlet Devices				
#1	Primary	288.00' 6.0' Inle		Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 : / Outlet Invert= 288.00' / 287.75' S= 0.0089 '/' Cc= 0.900 0.010 PVC, smooth interior, Flow Area= 0.20 sf				
#2 #3	#2 Device 1 291.50' 3.0" \ #3 Device 1 292.40' 6.0" \		" Vert. Orifice/Gra " Horiz. Orifice/Gi	Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads				

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=288.50' (Free Discharge)

1=Culvert (Passes 0.00 cfs of 0.47 cfs potential flow)

2=Orifice/Grate (Controls 0.00 cfs)

-3=Orifice/Grate (Controls 0.00 cfs)

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Pond 3P: Bioretention Lot 3

 Inflow Area =
 0.464 ac, 46.98% Impervious, Inflow Depth =
 0.59" for 1-YR event

 Inflow =
 0.47 cfs @
 11.98 hrs, Volume=
 0.023 af

 Outflow =
 0.00 cfs @
 0.00 hrs, Volume=
 0.000 af, Atten= 100%, Lag= 0.0 min

 Primary =
 0.00 cfs @
 0.00 hrs, Volume=
 0.000 af

 Routed to Link 2Lc : POI #2
 POI
 POI

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Peak Elev= 295.18' @ 24.36 hrs Surf.Area= 1,548 sf Storage= 991 cf

Plug-Flow detention time=(not calculated: initial storage exceeds outflow) Center-of-Mass det. time=(not calculated: no outflow)

Volume	Inve	rt Ava	il.Storage	Storage Descript	Storage Description					
#1	292.50	0'	3,539 ct	Custom Stage I	Data (Prismatio	Listed below (Recalc)				
Elevatio (feet	n S t)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)					
292.5	0	1,450	0.0	0	0					
295.0	0	1,450	20.0	725	725					
295.5	0	1,726	100.0	794	1,519					
296.0	0	2,016	100.0	936	2,455					
296.5	0	2,321	100.0	1,084	3,539					
Device	Routing	In	vert Ou	tlet Devices						
#1	Primary	ry 292.00' 6.0'' Inlei		" Round Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 t / Outlet Invert= 292.00' / 291.75' S= 0.0083 '/' Cc= 0.900						
#2 #3	Device 1 295.50' 2.0" Device 1 296.40' 6.0 "		" Vert. Orifice/Gra " Horiz. Orifice/Gr	ate $C = 0.600$ rate $C = 0.600$	Limited to weir flow at low heads					

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=292.50' (Free Discharge)

1=Culvert (Passes 0.00 cfs of 0.47 cfs potential flow)

2=Orifice/Grate (Controls 0.00 cfs)

-3=Orifice/Grate (Controls 0.00 cfs)

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Pond 3P: Bioretention Lot 3

Summary for Link 1Lc: POI #1

Inflow Area = 1.652 ac, 14.83% Impervious, Inflow Depth = 0.07" for 1-YR event Inflow = 0.02 cfs @ 12.58 hrs, Volume= 0.010 af Primary = 0.02 cfs @ 12.58 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min Routed to Link 3Lc : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 1Lc: POI #1

Summary for Link 1Lv: POI #1

Inflow Area = 1.652 ac, 8.05% Impervious, Inflow Depth = 0.10" for 1-YR event Inflow = 0.03 cfs @ 12.67 hrs, Volume= 0.013 af Primary = 0.03 cfs @ 12.67 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min Routed to Link 3Lv : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 1Lv: POI #1

Summary for Link 2Lc: POI #2

Inflow Area =1.802 ac, 12.49% Impervious, Inflow Depth =0.04" for 1-YR eventInflow =0.01 cfs @13.68 hrs, Volume=0.006 afPrimary =0.01 cfs @13.68 hrs, Volume=0.006 af, Atten= 0%, Lag= 0.0 minRouted to Link 3Lc : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 2Lc: POI #2

Summary for Link 2Lv: POI #2

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 0.03" for 1-YR event Inflow = 0.01 cfs @ 15.60 hrs, Volume= 0.005 af Primary = 0.01 cfs @ 15.60 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min Routed to Link 3Lv : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 2Lv: POI #2

Summary for Link 3Lc: TOTAL SITE

Inflow Area =3.454 ac, 13.61% Impervious, Inflow Depth =0.05" for 1-YR eventInflow =0.02 cfs @13.04 hrs, Volume=0.016 afPrimary =0.02 cfs @13.04 hrs, Volume=0.016 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 3Lc: TOTAL SITE

Summary for Link 3Lv: TOTAL SITE

Inflow Area =3.454 ac,3.85% Impervious, Inflow Depth =0.06" for 1-YR eventInflow =0.03 cfs @12.67 hrs, Volume=0.018 afPrimary =0.03 cfs @12.67 hrs, Volume=0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 3Lv: TOTAL SITE

Time span=0.00-98.00 hrs, dt=0.02 hrs, 4901 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: PRE-DEV POI #1	Runoff Area=1.652 ac 8.05% Impervious Runoff Depth=0.60" Flow Length=245' Tc=27.7 min CN=60 Runoff=0.65 cfs 0.083 af
Subcatchment2S: PRE-DEV POI #2	Runoff Area=1.802 ac 0.00% Impervious Runoff Depth=0.40" Flow Length=275' Tc=24.5 min CN=55 Runoff=0.38 cfs 0.060 af
Subcatchment3S: POST-DEVPOI #1	Runoff Area=1.205 ac 6.22% Impervious Runoff Depth=0.60" Flow Length=245' Tc=22.7 min CN=60 Runoff=0.54 cfs 0.060 af
Subcatchment4S: POST-BioretentionLot 1	Runoff Area=0.152 ac 51.32% Impervious Runoff Depth=1.76" Tc=6.0 min CN=80 Runoff=0.48 cfs 0.022 af
Subcatchment5S: POST-BioretentionLot 2	Runoff Area=0.295 ac 31.19% Impervious Runoff Depth=1.29" Tc=6.0 min CN=73 Runoff=0.68 cfs 0.032 af
Subcatchment6S: POST-DEVPOI #2	Runoff Area=1.338 ac 0.52% Impervious Runoff Depth=0.48" Flow Length=275' Tc=24.2 min CN=57 Runoff=0.39 cfs 0.053 af
Subcatchment7S: POST-BioretentionLot 3	Runoff Area=0.464 ac 46.98% Impervious Runoff Depth=1.62" Tc=6.0 min CN=78 Runoff=1.34 cfs 0.063 af
Pond 1P: BioretentionLot 1	Peak Elev=299.64' Storage=525 cf Inflow=0.48 cfs 0.022 af Outflow=0.03 cfs 0.012 af
Pond 2P: Bioretention Lot 2	Peak Elev=291.63' Storage=758 cf Inflow=0.68 cfs 0.032 af Outflow=0.03 cfs 0.017 af
Pond 3P: Bioretention Lot 3	Peak Elev=295.68' Storage=1,846 cf Inflow=1.34 cfs 0.063 af Outflow=0.03 cfs 0.028 af
Link 1Lc: POI #1	Inflow=0.55 cfs 0.089 af Primary=0.55 cfs 0.089 af

22352 2890 River Road Subdivision	Type I	I 24-hr 10-YR Rainfall=3.66"
Prepared by Engineering Ventures, Inc		Printed 12/8/2023
HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Soft	ware Solutions LLC	Page 36
Link 1Lv: POI #1		Inflow=0.65 cfs 0.083 af
		Primary=0.65 cfs 0.083 af
Link 2Lc: POI #2		Inflow=0.39 cfs 0.081 af
		Primary=0.39 cfs 0.081 af
Link 2Lv: POI #2		Inflow=0.38 cfs 0.060 af
		Primary=0.38 cfs 0.060 af
Link 3Lc: TOTALSITE		Inflow=0.94 cfs 0.170 af
		Primary=0.94 cfs 0.170 af
Link 3Lv: TOTAL SITE		Inflow=1.03 cfs 0.143 af
		Primary=1.03 cfs 0.143 af
	Total Runoff Area = 6.908 ac Runoff Volume = 0.373 af 91.27% Pervious = 6.305 ac	Average Runoff Depth = 0.65" 8.73% Impervious = 0.603 ac

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: PRE-DEV POI #1

Runoff = 0.65 cfs @ 12.28 hrs, Volume= Routed to Link 1Lv : POI #1 0.083 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 10-YR Rainfall=3.66"

Area	(ac) C	N De	scription						
0.	974 :	55 Wo	Woods, Good, HSG B						
0.	545 6	51 >75	% Grass c	over, Good	, HSG B				
0.	133 9	98 Pa	ed parking	, HSG B					
1.	652 6	50 We	iahted Ave	rade					
1.	519	91.	95% Pervic	ous Area					
0.	133	8.0	5% Impervi	ous Area					
Tc	Length	Slope	Velocity	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
6.3	29	0.0170	0.08		Sheet Flow, 29' Lawn Sheet Flow at 1.7%				
					Grass: Dense n= 0.240 P2= 2.57"				
19.4	71	0.0170	0.06		Sheet Flow, 71' Sheet Flow at 1.7%				
					Woods: Light underbrush n= 0.400 P2= 2.57"				
1.1	64	0.0360	0.95		Shallow Concentrated Flow, 64' Shallow Concentrated Flow at 3.6%				
					Woodland Kv= 5.0 fps				
0.9	81	0.0900	1.50		Shallow Concentrated Flow, 81' Shallow Concentrated Flow at 9.0%				
					Woodland Kv= 5.0 fps				
27.7	245	Total							

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Type II 24-hr 10-YR Rainfall=3.66" Printed 12/8/2023 Page 38 Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 2S: PRE-DEV POI #2

Runoff = 0.38 cfs @ 12.27 hrs, Volume= Routed to Link 2Lv : POI #2 0.060 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 10-YR Rainfall=3.66"

Area	(ac) C	N Desc	cription			
1.	802 5	5 Woo	ds, Good,	HSG B		_
1.	802	100.	00% Pervi	ious Area		_
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
21.6	100	0.0260	0.08		Sheet Flow, 100' Sheet Flow at 2.6%	_
2.9	175	0.0400	1.00		Woods: Light underbrush n= 0.400 P2= 2.57" Shallow Concentrated Flow, 175' Shallow Concentrated Flow at 4% Woodland Kv= 5.0 fps	
24.5	275	Total				

Flow (cfs)

0.04 0.02

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Subcatchment 2S: PRE-DEV POI #2

Time (hours)

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 3S: POST-DEV POI #1

Runoff = 0.54 cfs @ 12.20 hrs, Volume= Routed to Link 1Lc : POI #1 0.060 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 10-YR Rainfall=3.66"

	Area	(ac) (CN	Desc	ription		
	0.	563	55	Wood	ds, Good,	HSG B	
	0.	567	61	>75%	6 Grass co	over, Good	, HSG B
*	0.	075	98	Impe	rvious, HS	SG C	
	1.	205	60	Weig	hted Aver	age	
	1.	130		93.78	3% Pervio	us Area	
	0.	075		6.229	% Impervi	ous Area	
					-		
	Тс	Length	S	Slope	Velocity	Capacity	Description
	(min)	(feet)		(ft/ft)	(ft/sec)	(cfs)	
	4.3	29	0.	0170	0.11		Sheet Flow, 29' Lawn Sheet Flow at 1.7%
							Grass: Short n= 0.150 P2= 2.57"
	12.0	39	0.	0170	0.05		Sheet Flow, 39' Sheet Flow at 1.7%
							Woods: Light underbrush n= 0.400 P2= 2.57"
	4.7	32	0.	0170	0.11		Sheet Flow, 32' Sheet Flow at 1.7%
							Grass: Short n= 0.150 P2= 2.57"
	0.8	64	0.	0360	1.33		Shallow Concentrated Flow, 64' Shallow Concentrated Flow at 3.6%
							Short Grass Pasture Kv= 7.0 fps
	0.9	81	0.	0900	1.50		Shallow Concentrated Flow, 81' Shallow Concentrated Flow at 9.0%
							Woodland Kv= 5.0 fps

22.7 245 Total

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Subcatchment 4S: POST-Bioretention Lot 1

Runoff = 0.48 cfs @ 11.97 hrs, Volume= Routed to Pond 1P : Bioretention Lot 1

0.022 af, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 10-YR Rainfall=3.66"

	Area (ac)	CN	Desc	cription		
	0.0)67	98	Pave	d parking	, HSG B	
	0.0)74	61	>75%	6 Grass co	over, Good,	HSG B
*	0.0)11	98	Futu	re Impervi	ous Area	
	0.1	152	80	Weig	hted Aver	age	
	0.0)74		48.6	8% Pervio	us Area	
	0.0)78		51.3	2% Imperv	/ious Area	
	Тс	Lengt	h :	Slope	Velocity	Capacity	Description
	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry, Assumed Minimum

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Subcatchment 5S: POST-Bioretention Lot 2

Runoff = 0.68 cfs @ 11.98 hrs, Volume= Routed to Pond 2P : Bioretention Lot 2

0.032 af, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 10-YR Rainfall=3.66"

	Area	(ac)	CN	Desc	ription					
	0.	081	98	Pave	Paved parking, HSG B					
0.203 61 >75% Grass cover, Good, HSG B					HSG B					
*	0.	011	98	Futu	re Impervi	ous Area				
	0.	295	73	Weig	hted Aver	age				
	0.	0.203 68.81% Pervious Area								
0.092 31.19% Impervious Area					9% Imperv	vious Area				
	Тс	Lengt	h	Slope	Velocity	Capacity	Description			
_	(min)	(feet	t)	(ft/ft)	(ft/sec)	(cfs)				
	6.0						Direct Entry, Assumed Minimium			

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc

HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 6S: POST-DEV POI #2

Runoff = 0.39 cfs @ 12.24 hrs, Volume= Routed to Link 2Lc : POI #2 0.053 af, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 10-YR Rainfall=3.66"

Ar	ea (ac	;) C	N De	scription		
	0.954	4 5	5 Wo	ods, Good,	HSG B	
0.377 61 >75% Grass cover, Good						, HSG B
0.007 98 Paved parking, HSG B					, HSG B	
	1.338	85	57 We	ighted Ave	rage	
	1.331	1	99.	48% Pervic	ous Area	
	0.007	7	0.5	2% Impervi	ous Area	
_			~			
	IC Le	ength	Slope	Velocity	Capacity	Description
(mi	n) ((feet)	(ft/ft	(ft/sec)	(cfs)	
21	.6	100	0.0260	0.08		Sheet Flow, 100' Sheet Flow at 2.6%
						Woods: Light underbrush n= 0.400 P2= 2.57"
1	.5	93	0.0400	1.00		Shallow Concentrated Flow, 93' Shallow Concentrated Flow at 4%
						Woodland Kv= 5.0 fps
0	.7	62	0.0400	1.40		Shallow Concentrated Flow, 62' Shallow Concentrated Flow at 4%
-	•		0.040	4.65		Short Grass Pasture Kv= 7.0 fps
0	.3	20	0.0400	1.00		Shallow Concentrated Flow, 20' Shallow Concentrated Flow at 4%
						Woodland KV= 5.0 fps
04	0	075	T			

24.2 275 Total

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Subcatchment 7S: POST-Bioretention Lot 3

Runoff = 1.34 cfs @ 11.98 hrs, Volume= Routed to Pond 3P : Bioretention Lot 3

0.063 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 10-YR Rainfall=3.66"

	Area (ac)	CN	Desc	cription					
	0.2	207	98	Pave	Paved parking, HSG B					
	0.2	209	61	>75%	>75% Grass cover, Good, HSG B					
	0.0)37	55	Woods, Good, HSG B						
*	0.0	011	98	Futu	re Impervi	ous Area				
	0.4	164	78	Weig	hted Aver	age				
	0.2	246		53.02	2% Pervio	us Area				
	0.218 46.98% Impervious Area				8% Imperv	vious Area				
	Тс	Lengt	h :	Slope	Velocity	Capacity	Description			
	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)				
6.0							Direct Entry, Assumed Minimum			
							-			

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Pond 1P: Bioretention Lot 1

 Inflow Area =
 0.152 ac, 51.32% Impervious, Inflow Depth =
 1.76" for 10-YR event

 Inflow =
 0.48 cfs @
 11.97 hrs, Volume=
 0.022 af

 Outflow =
 0.03 cfs @
 12.65 hrs, Volume=
 0.012 af, Atten= 93%, Lag= 40.2 min

 Primary =
 0.03 cfs @
 12.65 hrs, Volume=
 0.012 af

 Routed to Link 1Lc : POI #1
 0.012 af
 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Peak Elev= 299.64' @ 12.65 hrs Surf.Area= 583 sf Storage= 525 cf

Plug-Flow detention time=286.2 min calculated for 0.012 af (54% of inflow) Center-of-Mass det. time=165.3 min (998.1 - 832.8)

Volume	Inve	ert Ava	il.Storage	Storage Description					
#1	296.5	0'	1,139 cf	Custom Stage Data (Prismatic) Listed below (Recalc)					
Elevatio (fee	n s t)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
296.5	0	417 417	0.0	0 209	0 209				
299.5 300.0	0 0	545 686 842	100.0 100.0	241 308 382	449 757 1 130				
Device	Routing	042 In	ivert Out	let Devices	1,139				
#1	Primary	296.00' 6 . In n:)" Round Culvert L= 38.0' CPP, square edge headwall, Ke= 0.500 et / Outlet Invert= 296.00' / 295.81' S= 0.0050 '/' Cc= 0.900 0.010 PVC, smooth interior, Flow Area= 0.20 sf					
#2 #3	Limited to weir flow at low heads Limited to weir flow at low heads								

Primary OutFlow Max=0.03 cfs @ 12.65 hrs HW=299.64' (Free Discharge)

1=Culvert (Passes 0.03 cfs of 1.59 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.03 cfs @ 1.25 fps)

3=Orifice/Grate (Controls 0.00 cfs)

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC


Summary for Pond 2P: Bioretention Lot 2

 Inflow Area =
 0.295 ac, 31.19% Impervious, Inflow Depth =
 1.29" for 10-YR event

 Inflow =
 0.68 cfs @
 11.98 hrs, Volume=
 0.032 af

 Outflow =
 0.03 cfs @
 13.41 hrs, Volume=
 0.017 af, Atten= 95%, Lag= 85.7 min

 Primary =
 0.03 cfs @
 13.41 hrs, Volume=
 0.017 af

 Routed to Link 1Lc : POI #1
 0.017 af

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Peak Elev= 291.63' @ 13.41 hrs Surf.Area= 824 sf Storage= 758 cf

Plug-Flow detention time= 330.5 min calculated for 0.017 af (53% of inflow) Center-of-Mass det. time= 196.9 min (1,050.5 - 853.6)

Volume	Inve	ert Ava	il.Storage	Storage Description					
#1	288.5	0'	1,609 cf	Custom Stage Data (Prismatic)Listed below (Recalc)					
Elevatio (fee	n t)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
288.5	0 0	608 608	0.0 20.0	0 304	0 304				
291.5 292.0 292.5	0 0 0	776 955 1,151	100.0 100.0 100.0	346 433 527	650 1,083 1,609				
Device	Routing	In	vert Out	let Devices					
#1	Primary 288.00' 6.0' Inle		Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 / Outlet Invert= 288.00' / 287.75' S= 0.0089 '/' Cc= 0.900 0.10 PV/C smooth interior Flow Area= 0.20 sf						
#2 #3	Device 1 Device 1	vice 1 291.50' 3.0" vice 1 292.40' 6.0 "		' Vert. Orifice/Gra ' Horiz. Orifice/Gr	/ert. Orifice/Grate C= 0.600 Limited to weir flow at low heads Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads				

Primary OutFlow Max=0.03 cfs @ 13.41 hrs HW=291.63' (Free Discharge)

1=Culvert (Passes 0.03 cfs of 1.73 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.03 cfs @ 1.25 fps)

3=Orifice/Grate (Controls 0.00 cfs)

22352 2890 River Road Subdivision

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Pond 3P: Bioretention Lot 3

 Inflow Area =
 0.464 ac, 46.98% Impervious, Inflow Depth =
 1.62" for 10-YR event

 Inflow =
 1.34 cfs @
 11.98 hrs, Volume=
 0.063 af

 Outflow =
 0.03 cfs @
 15.59 hrs, Volume=
 0.028 af, Atten= 98%, Lag= 216.8 min

 Primary =
 0.03 cfs @
 15.59 hrs, Volume=
 0.028 af

 Routed to Link 2Lc : POI #2
 12

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Peak Elev= 295.68' @ 15.59 hrs Surf.Area= 1,832 sf Storage= 1,846 cf

Plug-Flow detention time=474.8 min calculated for 0.028 af (44% of inflow) Center-of-Mass det. time= 347.1 min (1,185.9 - 838.8)

Volume	Inver	t Ava	il.Storage	Storage Description				
#1	292.50)'	3,539 cf	Custom Stage I	Data (Prismatio	Listed below (Recalc)		
Elevatio (fee	n S	Surf.Area (sɑ-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)			
292.5	0 0	1,450	0.0	0 725	0			
295.5 296.0 296.5	0 0 0	1,726 2,016 2,321	100.0 100.0 100.0	794 936 1,084	1,519 2,455 3,539			
Device	Routing	In	vert Out	let Devices				
#1	1 Primary 292.00' 6.0 Inle		' Round Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 t / Outlet Invert= 292.00' / 291.75' S= 0.0083 '/' Cc= 0.900					
#2 Device 1 295.50' 2.0' #3 Device 1 296.40' 6.0'		" Vert. Orifice/Gra " Horiz. Orifice/Gr	Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads					

Primary OutFlow Max=0.03 cfs @ 15.59 hrs HW=295.68' (Free Discharge)

1=Culvert (Passes 0.03 cfs of 1.71 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.03 cfs @ 1.52 fps)

3=Orifice/Grate (Controls 0.00 cfs)

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Link 1Lc: POI #1

Inflow Area =1.652 ac, 14.83% Impervious, Inflow Depth =0.65" for 10-YR eventInflow =0.55 cfs @12.21 hrs, Volume=0.089 afPrimary =0.55 cfs @12.21 hrs, Volume=0.089 af, Atten= 0%, Lag= 0.0 minRouted to Link 3Lc : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 1Lc: POI #1

Summary for Link 1Lv: POI #1

Inflow Area = 1.652 ac, 8.05% Impervious, Inflow Depth = 0.60" for 10-YR event Inflow = 0.65 cfs @ 12.28 hrs, Volume= 0.083 af Primary = 0.65 cfs @ 12.28 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min Routed to Link 3Lv : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 1Lv: POI #1

Summary for Link 2Lc: POI #2

Inflow Area =1.802 ac, 12.49% Impervious, Inflow Depth =0.54" for 10-YR eventInflow =0.39 cfs @12.24 hrs, Volume=0.081 afPrimary =0.39 cfs @12.24 hrs, Volume=0.081 af, Atten= 0%, Lag= 0.0 minRouted to Link 3Lc : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 2Lc: POI #2

Summary for Link 2Lv: POI #2

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 0.40" for 10-YR event Inflow = 0.38 cfs @ 12.27 hrs, Volume= 0.060 af Primary = 0.38 cfs @ 12.27 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min Routed to Link 3Lv : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 2Lv: POI #2

Summary for Link 3Lc: TOTAL SITE

Inflow Area = 3.454 ac, 13.61% Impervious, Inflow Depth = 0.59" for 10-YR event Inflow = 0.94 cfs @ 12.23 hrs, Volume= 0.170 af

Primary = 0.94 cfs @ 12.23 hrs, Volume = 0.170 alPrimary = 0.94 cfs @ 12.23 hrs, Volume = 0.170 al, Atten = 0%, Lag = 0.0 min

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 3Lc: TOTAL SITE

Summary for Link 3Lv: TOTAL SITE

 Inflow Area =
 3.454 ac,
 3.85% Impervious, Inflow Depth =
 0.50" for 10-YR event

 Inflow =
 1.03 cfs @
 12.27 hrs, Volume=
 0.143 af

 Primary =
 1.03 cfs @
 12.27 hrs, Volume=
 0.143 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 3Lv: TOTAL SITE

Time span=0.00-98.00 hrs, dt=0.02 hrs, 4901 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: PRE-DEV POI #1	Runoff Area=1.652 ac 8.05% Impervious Runoff Depth=1.99" Flow Length=245' Tc=27.7 min CN=60 Runoff=2.82 cfs 0.274 af
Subcatchment2S: PRE-DEV POI #2	Runoff Area=1.802 ac 0.00% Impervious Runoff Depth=1.58" Flow Length=275' Tc=24.5 min CN=55 Runoff=2.48 cfs 0.237 af
Subcatchment3S: POST-DEV POI #1	Runoff Area=1.205 ac 6.22% Impervious Runoff Depth=1.99" Flow Length=245' Tc=22.7 min CN=60 Runoff=2.34 cfs 0.200 af
Subcatchment4S: POST-BioretentionLot 1	Runoff Area=0.152 ac 51.32% Impervious Runoff Depth=3.88" Tc=6.0 min CN=80 Runoff=1.03 cfs 0.049 af
Subcatchment5S: POST-BioretentionLot 2	Runoff Area=0.295 ac 31.19% Impervious Runoff Depth=3.18" Tc=6.0 min CN=73 Runoff=1.67 cfs 0.078 af
Subcatchment6S: POST-DEV POI #2	Runoff Area=1.338 ac 0.52% Impervious Runoff Depth=1.74" Flow Length=275' Tc=24.2 min CN=57 Runoff=2.11 cfs 0.194 af
Subcatchment7S: POST-BioretentionLot 3	Runoff Area=0.464 ac 46.98% Impervious Runoff Depth=3.68" Tc=6.0 min CN=78 Runoff=2.99 cfs 0.142 af
Pond 1P: Bioretention Lot 1	Peak Elev=300.35' Storage=1,019 cf Inflow=1.03 cfs 0.049 af Outflow=0.20 cfs 0.039 af
Pond 2P: Bioretention Lot 2	Peak Elev=292.45' Storage=1,556 cf Inflow=1.67 cfs 0.078 af Outflow=0.28 cfs 0.063 af
Pond 3P: Bioretention Lot 3	Peak Elev=296.48' Storage=3,503 cf Inflow=2.99 cfs 0.142 af Outflow=0.23 cfs 0.107 af
Link 1Lc: POI #1	Inflow=2.82 cfs 0.302 af Primary=2.82 cfs 0.302 af

22352 2890 River Road Subdivision	Type II 2	24-hr 100-YR Rainfall=6.11"
Prepared by Engineering Ventures, Inc		Printed 12/8/2023
HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD So	oftware Solutions LLC	Page 64
Link 1Lv: POI #1		Inflow=2.82 cfs 0.274 af
		Primary=2.82 cfs 0.274 af
Link 2Lc: POI #2		Inflow=2.21 cfs 0.302 af
		Primary=2.21 cfs 0.302 af
Link 2Lv: POI #2		Inflow=2.48 cfs 0.237 af
		Primary=2.48 cfs 0.237 af
Link 3Lc: TOTAL SITE		Inflow=5.02 cfs 0.604 af
		Primary=5.02 cfs 0.604 af
Link 3Lv: TOTAL SITE		Inflow=5.29 cfs 0.512 af
		Primary=5.29 cfs 0.512 af
	Total Runoff Area = 6.908 ac Runoff Volume = 1.176 af 91.27% Pervious = 6.305 ac	Average Runoff Depth = 2.04" 8.73% Impervious = 0.603 ac

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: PRE-DEV POI #1

Runoff = 2.82 cfs @ 12.23 hrs, Volume= Routed to Link 1Lv : POI #1

0.274 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 100-YR Rainfall=6.11"

Area	(ac) C	N D	escription		
0.	974 !	55 V	oods, Good	HSG B	
0.	545 6	61 >	75% Grass d	over, Good	, HSG B
0.	133 9	98 P	aved parking	I, HSG B	
1.	652 6	60 V	eighted Ave	rage	
1.	519	9	1.95% Pervic	ous Area	
0.	133	8	05% Imperv	ious Area	
_					
IC	Length	Slo	e Velocity	Capacity	Description
(min)	(teet)	(ft/	t) (ft/sec)	(cts)	
6.3	29	0.01	0.08		Sheet Flow, 29' Lawn Sheet Flow at 1.7%
					Grass: Dense n= 0.240 P2= 2.57"
19.4	71	0.01	0.06		Sheet Flow, 71' Sheet Flow at 1.7%
					Woods: Light underbrush n= 0.400 P2= 2.57"
1.1	64	0.03	i 0.95		Shallow Concentrated Flow, 64' Shallow Concentrated Flow at 3.6%
					Woodland Kv= 5.0 fps
0.9	81	0.09	00 1.50		Shallow Concentrated Flow, 81' Shallow Concentrated Flow at 9.0%
					Woodland Kv= 5.0 tps
07.7	0.45	- ·			

27.7 245 Total

22352 2890 River Road Subdivision

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 2S: PRE-DEV POI #2

Runoff = 2.48 cfs @ 12.21 hrs, Volume= 0.237 Routed to Link 2Lv : POI #2

0.237 af, Depth= 1.58"

Area	(ac) C	N Desc	cription							
1.	1.802 55 Woods, Good, HSG B									
1.	802	100.	00% Pervi	ious Area						
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
21.6	100	0.0260	0.08		Sheet Flow, 100' Sheet Flow at 2.6%					
2.9	175	0.0400	1.00		Woods: Light underbrush n= 0.400 P2= 2.57" Shallow Concentrated Flow, 175' Shallow Concentrated Flow at 4% Woodland Kv= 5.0 fps					
24.5	275	Total								

22352 2890 River Road Subdivision

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 3S: POST-DEV POI #1

Runoff = 2.34 cfs @ 12.17 hrs, Volume= Routed to Link 1Lc : POI #1 0.200 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Type II 24-hr 100-YR Rainfall=6.11"

	Area	(ac) C	N D	escription		
	0.	563	55 W	oods, Good	, HSG B	
	0.	567	61 >7	5% Grass c	over, Good	, HSG B
*	0.	075	98 In	pervious, H	SG C	
	1.	205	60 W	eighted Ave	rage	
	1.	130	93	.78% Pervic	ous Area	
	0.	075	6.	22% Imperv	ious Area	
	Тс	Length	Slop	e Velocity	Capacity	Description
	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)	
	4.3	29	0.017	0 0.11		Sheet Flow, 29' Lawn Sheet Flow at 1.7%
						Grass: Short n= 0.150 P2= 2.57"
	12.0	39	0.017	0 0.05		Sheet Flow, 39' Sheet Flow at 1.7%
						Woods: Light underbrush n= 0.400 P2= 2.57"
	4.7	32	0.017	0 0.11		Sheet Flow, 32' Sheet Flow at 1.7%
						Grass: Short n= 0.150 P2= 2.57"
	0.8	64	0.036	0 1.33		Shallow Concentrated Flow, 64' Shallow Concentrated Flow at 3.6%
						Short Grass Pasture Kv= 7.0 fps
	0.9	81	0.090	0 1.50		Shallow Concentrated Flow, 81' Shallow Concentrated Flow at 9.0%
						Woodland Kv= 5.0 fps

22.7 245 Total

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Subcatchment 4S: POST-Bioretention Lot 1

Runoff = 1.03 cfs @ 11.97 hrs, Volume= Routed to Pond 1P : Bioretention Lot 1

0.049 af, Depth= 3.88"

	Area (a	ac)	CN	Desc	ription		
	0.0	67	98	Pave	d parking	, HSG B	
	0.0	74	61	>75%	6 Grass co	over, Good	HSG B
*	0.0	11	98	Futu	re Impervi	ous Area	
	0.1	52	80	Weig	hted Aver	age	
	0.0	74		48.68	8% Pervio	us Area	
	0.0	78		51.32	2% Imperv	/ious Area	
	Tc I	Length	n S	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry, Assumed Minimum



Summary for Subcatchment 5S: POST-Bioretention Lot 2

Runoff = 1.67 cfs @ 11.97 hrs, Volume= Routed to Pond 2P : Bioretention Lot 2

0.078 af, Depth= 3.18"

_	Area (ac)	CN	Desc	ription		
	0.0)81	98	Pave	ed parking,	HSG B	
	0.2	203	61	>75%	6 Grass co	over, Good,	HSG B
*	0.0)11	98	Futu	re Impervie	ous Area	
	0.2	295	73	Weig	hted Aver	age	
	0.2	203		68.8	1% Pervio	us Area	
	0.0)92		31.19	9% Imperv	vious Area	
	Tc	Length	n S	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry, Assumed Minimium



Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 6S: POST-DEV POI #2

Runoff = 2.11 cfs @ 12.19 hrs, Volume= Routed to Link 2Lc : POI #2 0.194 af, Depth= 1.74"

Area	(ac) C	CN	Desc	cription						
0.	954	55	Noo	Voods, Good, HSG B						
0.	377	61 :	>75%	6 Grass co	over, Good	, HSG B				
0.	007	98	Pave	ed parking	HSG B					
1.	338	57	Weig	hted Aver	age					
1.	331	9	99.4	8% Pervio	us Area					
0.	007	(0.529	% Impervi	ous Area					
Тс	Length	Slo	ppe	Velocity	Capacity	Description				
(min)	(feet)	(f	t/ft)	(ft/sec)	(cfs)					
21.6	100	0.02	260	0.08		Sheet Flow, 100' Sheet Flow at 2.6%				
						Woods: Light underbrush n= 0.400 P2= 2.57"				
1.5	93	0.04	100	1.00		Shallow Concentrated Flow, 93' Shallow Concentrated Flow at 4%				
						Woodland Kv= 5.0 fps				
0.7	62	0.04	100	1.40		Shallow Concentrated Flow, 62' Shallow Concentrated Flow at 4%				
						Short Grass Pasture Kv= 7.0 fps				
0.3	20	0.04	100	1.00		Shallow Concentrated Flow, 20' Shallow Concentrated Flow at 4%				
						Woodland Kv= 5.0 tps				
24.2	275	Tota	al							

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Subcatchment 7S: POST-Bioretention Lot 3

Runoff = 2.99 cfs @ 11.97 hrs, Volume= Routed to Pond 3P : Bioretention Lot 3

0.142 af, Depth= 3.68"

_	Area (ac)	CN	Des	cription		
	0.207	98	B Pave	ed parking	, HSG B	
	0.209	6	×75 ا	% Grass co	over, Good	HSG B
	0.037	55	5 Woo	ds, Good,	HSG B	
*	0.011	98	3 Futu	re Impervi	ous Area	
	0.464	78	3 Weig	ghted Aver	age	
	0.246		53.0	2% Pervio	us Area	
	0.218		46.9	8% Imperv	/ious Area	
	Tc Lei	ngth	Slope	Velocity	Capacity	Description
_	<u>(min)</u> (f	eet)	(ft/ft)	(ft/sec)	(cfs)	
	6.0					Direct Entry, Assumed Minimum

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Pond 1P: Bioretention Lot 1

 Inflow Area =
 0.152 ac, 51.32% Impervious, Inflow Depth = 3.88" for 100-YR event

 Inflow =
 1.03 cfs @
 11.97 hrs, Volume=
 0.049 af

 Outflow =
 0.20 cfs @
 12.14 hrs, Volume=
 0.039 af, Atten= 80%, Lag= 10.2 min

 Primary =
 0.20 cfs @
 12.14 hrs, Volume=
 0.039 af

 Routed to Link 1Lc : POI #1
 1
 1

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Peak Elev= 300.35'@ 12.14 hrs Surf.Area= 796 sf Storage= 1,019 cf

Plug-Flow detention time= 166.2 min calculated for 0.039 af (79% of inflow) Center-of-Mass det. time= 81.8 min (892.1 - 810.3)

Volume	Inve	rt Ava	il.Storage	Storage Description					
#1	296.50	0'	1,139 cf	Custom Stage Data (Prismatic)_isted below (Recalc)					
Elevatio (fee	n S t)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
296.5	0	417	0.0	0	0				
299.0	0	417	20.0	209	209				
299.5	0	545	100.0	241	449				
300.0	0	686	100.0	308	757				
300.5	0	842	100.0	382	1,139				
Device	Routing	In	vert Out	let Devices					
#1	1 Primary 296.00' 6.0' Inle		Round Culvert t / Outlet Invert= 2 0.010 PVC, smoot	Round Culvert L= 38.0' CPP, square edge headwall, Ke= 0.500 / Outlet Invert= 296.00' / 295.81' S= 0.0050 '/' Cc= 0.900 0.010 PVC smooth interior Flow Area= 0.20 sf					
#2 Device 1 2 #3 Device 1 3		299 300	9.50' 3.0 ').40' 6.0 '	" Vert. Orifice/Gra " Horiz. Orifice/G	ate C= 0.600 rate C= 0.600	Limited to weir flow at low heads Limited to weir flow at low heads			

Primary OutFlow Max=0.20 cfs @ 12.14 hrs HW=300.35' (Free Discharge)

1=Culvert (Passes 0.20 cfs of 1.75 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.20 cfs @ 4.11 fps)

3=Orifice/Grate (Controls 0.00 cfs)

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Pond 2P: Bioretention Lot 2

 Inflow Area =
 0.295 ac, 31.19% Impervious, Inflow Depth = 3.18" for 100-YR event

 Inflow =
 1.67 cfs @
 11.97 hrs, Volume=
 0.078 af

 Outflow =
 0.28 cfs @
 12.17 hrs, Volume=
 0.063 af, Atten= 83%, Lag= 12.1 min

 Primary =
 0.28 cfs @
 12.17 hrs, Volume=
 0.063 af

 Routed to Link 1Lc : POI #1
 1
 1

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Peak Elev= 292.45' @ 12.17 hrs Surf.Area= 1,133 sf Storage= 1,556 cf

Plug-Flow detention time= 171.9 min calculated for 0.063 af (81% of inflow) Center-of-Mass det. time= 90.6 min (917.8 - 827.2)

Volume Inv		rt Avail.Storage		Storage Description					
#1 288.5)'	1,609 cf	Custom Stage Data (Prismatic)Listed below (Recalc)					
Elevatio (feet	n S	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
288.5	0	608	0.0	0	0				
291.0	0	608	20.0	304	304				
291.5	0	776	100.0	346	650				
292.0	0	955	100.0	433	1,083				
292.5	0	1,151	100.0	527	1,609				
Device	Routing	In	vert Ou	tlet Devices					
#1	Primary	288.00'		0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500					
#2	Device 1 291.5		Inle n= 1.50' 3.0	Inlet / Outlet Invert= 288.00' / 287.75' S= 0.0089 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf 0' 3.0'' Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads					
#3	Device 1	292	2.40' 6.0	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads					

Primary OutFlow Max=0.28 cfs @ 12.17 hrs HW=292.45' (Free Discharge)

1=Culvert (Passes 0.28 cfs of 1.93 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.22 cfs @ 4.38 fps)

-3=Orifice/Grate (Weir Controls 0.06 cfs @ 0.75 fps)

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Pond 3P: Bioretention Lot 3

 Inflow Area =
 0.464 ac, 46.98% Impervious, Inflow Depth = 3.68" for 100-YR event

 Inflow =
 2.99 cfs @
 11.97 hrs, Volume=
 0.142 af

 Outflow =
 0.23 cfs @
 12.55 hrs, Volume=
 0.107 af, Atten= 92%, Lag= 34.7 min

 Primary =
 0.23 cfs @
 12.55 hrs, Volume=
 0.107 af

 Routed to Link 2Lc : POI #2
 12.55 hrs, Volume=
 0.107 af

Routing by Stor-Ind method, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs Peak Elev= 296.48' @ 12.55 hrs Surf.Area= 2,312 sf Storage= 3,503 cf

Plug-Flow detention time= 377.5 min calculated for 0.107 af (75% of inflow) Center-of-Mass det. time= 285.3 min (1,100.6 - 815.3)

Volume Invert		rt Ava	il.Storage	Storage Description					
#1 292.50')'	3,539 cf	Custom Stage I	Data (Prismatio	Listed below (Recalc)			
Elevatio (fee	n S t)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
292.5	0	1,450	0.0	0	0				
295.5	0	1,726	100.0	723	1,519				
296.0 296.5	0 0	2,016 2,321	100.0 100.0	936 1,084	2,455 3,539				
Device	Routing	In	vert Out	let Devices					
#1	Primary	nary 292.00		6.0" Round Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.00' / 291.75' S= 0.0083 '/' Cc= 0.900 n= 0.010 PVC, smooth interior. Flow Area= 0.20 sf					
#2 #3	Device 1 Device 1	Device 1 295.50' 2.0" Device 1 296.40' 6.0"		Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads					

Primary OutFlow Max=0.23 cfs @ 12.55 hrs HW=296.48' (Free Discharge)

1=Culvert (Passes 0.23 cfs of 1.90 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.10 cfs @ 4.57 fps)

-3=Orifice/Grate (Weir Controls 0.13 cfs @ 0.95 fps)

22352 2890 River Road Subdivision

Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC



Summary for Link 1Lc: POI #1

Inflow Area =1.652 ac, 14.83% Impervious, Inflow Depth =2.20" for 100-YR eventInflow =2.82 cfs @12.17 hrs, Volume=0.302 afPrimary =2.82 cfs @12.17 hrs, Volume=0.302 af, Atten= 0%, Lag= 0.0 minRouted to Link 3Lc : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 1Lc: POI #1

Summary for Link 1Lv: POI #1

Inflow Area =1.652 ac,8.05% Impervious, Inflow Depth =1.99" for 100-YR eventInflow =2.82 cfs @12.23 hrs, Volume=0.274 afPrimary =2.82 cfs @12.23 hrs, Volume=0.274 af, Atten= 0%, Lag= 0.0 minRouted to Link 3Lv : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 1Lv: POI #1

Summary for Link 2Lc: POI #2

Inflow Area =1.802 ac, 12.49% Impervious, Inflow Depth =2.01" for 100-YR eventInflow =2.21 cfs @12.20 hrs, Volume=0.302 afPrimary =2.21 cfs @12.20 hrs, Volume=0.302 af, Atten= 0%, Lag= 0.0 minRouted to Link 3Lc : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 2Lc: POI #2

Summary for Link 2Lv: POI #2

Inflow Area =1.802 ac,0.00% Impervious, Inflow Depth =1.58" for 100-YR eventInflow =2.48 cfs @12.21 hrs, Volume=0.237 afPrimary =2.48 cfs @12.21 hrs, Volume=0.237 af, Atten= 0%, Lag= 0.0 minRouted to Link 3Lv : TOTAL SITE

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 2Lv: POI #2
Summary for Link 3Lc: TOTAL SITE

Inflow Area = 3.454 ac, 13.61% Impervious, Inflow Depth = 2.10" for 100-YR event

Inflow = 5.02 cfs @ 12.18 hrs, Volume= 0.604 af

Primary = 5.02 cfs (2) 12.18 hrs, Volume= 0.604 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 3Lc: TOTAL SITE

22352 2890 River Road Subdivision Prepared by Engineering Ventures, Inc HydroCAD® 10.20-3g s/n 02106 © 2023 HydroCAD Software Solutions LLC

Summary for Link 3Lv: TOTAL SITE

 Inflow Area =
 3.454 ac,
 3.85% Impervious, Inflow Depth =
 1.78" for 100-YR event

 Inflow =
 5.29 cfs @
 12.22 hrs, Volume=
 0.512 af

 Primary =
 5.29 cfs @
 12.22 hrs, Volume=
 0.512 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-98.00 hrs, dt= 0.02 hrs



Link 3Lv: TOTAL SITE

Attachment 7

2890 River Road Subdivision Stormwater Calculations

WQv Calculations Minimum RRv Calculation Bioretention Area Calculations

No

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

Design Point:	POS 1 and 2		Manually onter P. Total Area and Imparyious Cover								
P=	1.10	inch									
		Breakdow	n of Subcatchme	nts							
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft ³)	Description					
1	0.15	0.08	51%	0.51	311	Bioretention Lot 1					
2	0.30	0.09	31%	0.33	390	Bioretention Lot 2					
3	0.46	0.22	47%	0.47	876	Bioretention Lot 3					
4											
5											
6											
7											
8											
9											
10											
Subtotal (1-30)	0.91	0.39	43%	0.43	1,576	Subtotal 1					
Total	0.91	0.39	43%	0.43	1,576	Initial WQv					

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

Recalcula							
	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Runoff Coefficient Rv	WQv (ft ³)		
"< <initial td="" wqv"<=""><td>0.91</td><td>0.39</td><td>43%</td><td>0.43</td><td>1,576</td><td></td><td></td></initial>	0.91	0.39	43%	0.43	1,576		
Subtract Area	0.00	0.00					
WQv adjusted after Area Reductions	0.91	0.39	43%	0.43	1,576		
Disconnection of Rooftops		0.00					
Adjusted WQv after Area Reduction and Rooftop Disconnect	0.91	0.39	43%	0.43	1,576	0.04	af
WQv reduced by Area Reduction techniques					0	0.00	af

Minimum RRv

Enter the Soils Da	ta for the site	
Soil Group	Acres	S
A		55%
В	0.91	40%
C		30%
D		20%
Total Area	0.91	
Calculate the Mini	imum RRv	
S =	0.40	
Impervious =	0.39	acre
Precipitation	1.1	in
Rv	0.95	
Minimum RRv	589	ft3
	0.01	af

(For use on HSG C or D Soils with underdrains) Af=WQv*(df)/[k*(hf+df)(tf)]

k

- Af Required Surface Area (ft2)
- 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)

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 &

Design Point:	POS 1 and 2						
	Enter	Site Data For	Drainage Are	a to be 1	Freated by	Practice	
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft ³)	Precipitation (in)	Description
1	0.15	0.08	0.51	0.51	310.66	1.10	Bioretention Lot 1
Enter Imperviou by Disconnectio	s Area Reduced n of Rooftops	0.00	51%	0.51	311	< <wqv ac<br="" after="">Disconnected R</wqv>	ljusting for ooftops
Enter the portic routed to this p	on of the WQv th ractice.	at is not reduc	ed for all prac	ctices	0	ft ³	
			Soil Inform	ation			
Soil Group		В					
Soil Infiltration	Rate	0.00	in/hour	Okay			
Using Underdra	ins?	Yes	Okay				
		Calcula	ite the Minim	um Filte	er Area		
				V	alue	Units	Notes
	WQv			311		ft ³	
Enter Depth of Soil Media			df	2.5		ft	2.5-4 ft
Enter Hydraulic Conductivity			k		0.5	ft/day	
Enter Ave	erage Height of I	Ponding	hf	C).25	ft	6 inches max.
E	nter Filter Time		tf	2		days	
Re	quired Filter Are	a	Af		282	ft ²	
		Determi	ne Actual Bio	-Retenti	on Area		
Filter Width		16	ft	ļ			
Filter Length		25	ft	 			
Filter Area		400	ft ²	ļ			
Actual Volume	Provided	440	ft ³				
		Dete	ermine Runof	f Reduct	tion		
Is the Bioretent	ion contributing	flow to	No	Select	t Practice		
another practic	e?	1					
RRv		176					
RRv applied		176	ft ³	This is 4 whiche	10% of the . ver is less.	storage provide	d or WQv
Volume Treated	ł	135	ft ³	This is the portion of the WQv that is not reduced in the practice.			
Volume Directe	d	0	ft ³	This vol	ume is dire	cted another p	ractice
Sizing √		ОК		Check to be sure Area provided $\geq Af$			

(For use on HSG C or D Soils with underdrains) Af=WQv*(df)/[k*(hf+df)(tf)]

k

- Af Required Surface Area (ft2)
- 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)

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 & Schueler, 1996)

Design Point:	POS 1 and 2								
	Enter	Site Data For	Drainage Are	a to be 1	reated by	Practice			
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft ³)	Precipitation (in)	Description		
2	0.30	0.09	0.31	0.33	389.52	1.10	Bioretention Lot 2		
Enter Imperviou by Disconnectio	s Area Reduced n of Rooftops	0.00	31%	0.33	390	< <wqv ac<br="" after="">Disconnected R</wqv>	ljusting for ooftops		
Enter the portic routed to this p	on of the WQv th ractice.	nat is not reduc	ced for all prac	ctices	0	ft ³			
			Soil Inform	ation					
Soil Group		В							
Soil Infiltration	Rate	0.00	in/hour	Okay					
Using Underdra	ins?	Yes	Okay						
		Calcula	ate the Minim	um Filte	r Area				
				V	alue	Units	Notes		
	WQv				390	ft^3			
Enter	Depth of Soil M	edia	df		2.5	ft	2.5-4 ft		
Enter H	lydraulic Conduc	ctivity	k		0.5	ft/day			
Enter Ave	erage Height of I	Ponding	hf	C).25	ft	6 inches max.		
E	nter Filter Time		tf	2		days			
Ree	quired Filter Are	a	Af		354	ft ²			
		Determi	ne Actual Bio	-Retenti	on Area				
Filter Width		20	ft						
Filter Length		30	ft						
Filter Area		600	ft^2						
Actual Volume	Provided	660	ft ³						
		Dete	ermine Runof	f Reduct	tion				
Is the Bioretent	ion contributing	, flow to		Select	Practice				
another practic	e?								
RRv		264							
RRv applied		264	ft ³	This is 4 whiche	0% of the ver is less.	storage provide	d or WQv		
Volume Treated	k	126	ft ³	This is the portion of the WQv that is not reduced in the practice.					
Volume Directe	d	0	ft^3	This volume is directed another practice					
Sizing √		ОК		Check to be sure Area provided $\geq Af$					

(For use on HSG C or D Soils with underdrains) Af=WQv*(df)/[k*(hf+df)(tf)]

k

- Af Required Surface Area (ft2)
- 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)

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 &

Design Point:	POS 1 and 2							
	Enter	Site Data For	Drainage Are	a to be 1	Freated by	Practice		
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft ³)	Precipitation (in)	Description	
3	0.46	0.22	0.47	0.47	876.06	1.10	Bioretention Lot 3	
Enter Imperviou by Disconnection	s Area Reduced n of Rooftops	0.00	47%	0.47	876	< <wqv ac<br="" after="">Disconnected R</wqv>	ljusting for ooftops	
Enter the portic routed to this p	on of the WQv th ractice.	at is not reduc	ced for all prac	ctices	0	ft ³		
			Soil Inform	ation				
Soil Group		В						
Soil Infiltration	Rate	0.00	in/hour	Okay				
Using Underdra	ins?	Yes	Okay					
		Calcula	ite the Minim	um Filte	er Area			
				V	alue	Units	Notes	
	WQv			876		ft ³		
Enter	Depth of Soil M	edia	df	2.5		ft	2.5-4 ft	
Enter H	lydraulic Conduc	ctivity	k		0.5	ft/day		
Enter Ave	erage Height of I	Ponding	hf	C).25	ft	6 inches max.	
E	nter Filter Time		tf	2		days		
Re	quired Filter Are	a	Af		796	ft ²		
		Determi	ne Actual Bio	-Retenti	on Area			
Filter Width		29	ft	 				
Filter Length		50	ft	 				
Filter Area		1450	ft ²					
Actual Volume	Provided	1595	ft [°]		-			
		Dete	ermine Runof	f Reduct	tion			
Is the Bioretent	ion contributing	flow to		Select	Practice			
another practice	e?							
RRV		638					1 1/0	
RRv applied		638	ft ³	This is 4 whichev	ver is less.	storage provide	d or WQv	
Volume Treated	k	238	ft ³	This is the portion of the WQv that is not reduced in the practice.				
Volume Directe	d	0	ft ³	This vol	ume is dire	ected another p	ractice	
Sizing √		ОК	Ĩ	Check to be sure Area provided $\geq Af$				

Total RRv Applied	1,078.00
Total Area	0.91
Total Impervious Area	0.39
Total Volume Treated	498.24
Rooftop Disconnect Impervious Area Total	0.00

Attachment 8

2890 River Road Minor Subdivision Plans

- C001 Site Legend and Notes
- C101 Existing Conditions and Demolition Plan
- C102 Overall Subdivision Plan
- C103 Subdivision Plan
- C104 Erosion and Sediment Control Plan
- C501 Site Details
- C502 Stormwater Details
- C503 Erosion and Sediment Control Details (1 of 2)
- C504 Erosion and Sediment Control Details (2 of 2)





GENERAL NOTES

EXACT OBJECT LOCATIONS MAY DIFFER FROM THAT AS SHOWN, AND ADDITIONAL SUB-SURFACE AND SURFACE AND STRUCTURES MAY EXIST. THE CONTRACTOR IS TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK.

- UTUTES SHOWN DO NOT PURPORT TO CONSTITUTE OR REPRESENT ALL UTUTES LOCATED IPON OR ADMOSTIT TO THE SUMPETED PREMIESS. DUTING UTUTIV LOCATIONS ARE APPROXIME ONLY. THE CONTRACTOR SHULL PELE PERFY ALL UTUTES. ALL DOSEPARATES SHULL & REPORTIDO THE OWNER AND ENDERER. SITE CONTRACTOR SHULL UTUTIV DOCAMENT SENSION AND UTUTIV DOMEST 72 HOURS, DOCUME OF WEEPENDS AND HALDARS, PROR TO ANY DOCAMENT SENSION.
- Than 10 off looping, detailing on document A. DG Syre ([14] (411) B. Inin DG Syre Weibber Aculty operators if known, (a list of dig Syre Members By State Can be found on the OS syre big stremmospherody) C. Town of Niskatuma Water and Sener Department (518–386–4520)
- 3. The encineer shall be notified in writing of any conditions that vary from those shown on the plans, the contractor's work shall not vary from the plans without the expressed approval from the encineer.
- THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB STEE DURING THE PERFORMANCE OF THIS CONTRACT.
- THE CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, CULVERTS, SIGNS AND OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO EXISTING CONDITIONS OR BETTER AS DETERMINED BY THE ENGINEER. ANY DAMAGED TREES, SHRUBS AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, UNLESS NOTED OTHERWISE.

6. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.

- THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL BUILDING PERMITS. THE CONTRACTORS SHALL BE RESPONSIBLE FOR ALL WORK PERMITS, INSPECTIONS, AND CERTIFICATES.
- 8. THE CONTRACTOR WILL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENABLER OR OWNER SHALL BE REFLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A New YORK STATE LUCHESED LAND SUPERVICE.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS, AND COORDINATE WORK WITH ALL CONTRACTS FOR THE SITE.

10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT EXPLORATORY TEST PITS AS MAY BE REQUIRED TO DETERMINE UNDERGROUND CONDITIONS.

All Trench excavation and any required sheeting and shoring shall be done in accordance with the latest osha regulations for construction.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK. DEWATERING METHOD MUST BE APPROVED BY THE OWNER AND COORDINATED WITH THE CITY OF GLIDE FILLS DEWATERING OF FUELU CORKS

13. MAINTAIN FLOW FOR ALL EXISTING UTILITIES, UNLESS NOTED OTHERWISE.

14. CONTRACTOR TO GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND IMPERVIOUS SURFACES.

15. THE CONTINUEDR SINUL BE RESPONSELE FOR PROMOUG ALL FELD LIVOUT. THE CONTINUEDR SINUL PROME WRKED-UP AS-BULT PLANS FOR ALL UILUITES SYMMING COMPACTIONS, BEING, WALVS, LEWETHS OF LINES MUN WRKED. KS-BULT PLANS SINUL BE REVENDED IF THE OWNER AND HIS REPRESENTATIVES BEFORE UILUITES WILL BE ACCEPTED.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION, MONTORING, MAINTENINGE AND REMOVAL OF ALL TEMPORARY ERGISINI CONTROL MESSURES AND TAKING PRECAUTIONARY STEPS TO AVOID ANY SEDMENT TRANSFER TO NORHORDING STEPS OR WHETES OF THE STATE.

17. BY ISSUANCE OF A BUILDING PERMIT, THE TOWN OF NISKAYUNA DOES NOT ASSUME ANY LUBLITY FOR STORM INVER DAMAGE BY GENERAL APPROVAL OF THESE PLANS. THE OWNER MUST ASSUME ANY AND ALL LUBLITIES FOR DAMAGE CLANNED ANSING OUT OF INCREASED STORM INTERF FLOX.

ALL ON-SITE SANITATION AND WATER SUPPLY FACILITIES SHALL BE DESIGNED TO MEET THE MINIMUM SPECIFICATIONS OF THE STATE DEPARTMENT OF HEALTH.



<u>Shee</u>t index

CO01 SITE LEGEND AND NOTES C101 EXISTING CONDITIONS AND DEMOLITION PLAN

C101 EXISING CONDITIONS AND DEMOLTION FUNN C103 EXIBONISON PLAN – PROPOSED 3-L01 C104 EXISTON PLAN – PROPOSED 3-L01 C104 EXISTON MOS SEDWERT CONTROL PLAN C501 STORM DEFAULS C502 EROSION AND SEDWERT CONTROL DETAUS (0 of 2) EROSION AND SEDWERT CONTROL DETAUS (0 of 2)

C503 EROSION AND SEDIMENT CONTROL DETAILS (2 OF 2)

SUBJECT PROPERTY:

TAX MAP PARCELS 51.-1-7.1 AND 51.9-2-1.1

APPLICANT/OWNER:

RPL FAMILY TRUST 2505 WHANER LANE NISKAYUNA, NY 12309

SURVEY NOTES

2890 RIVER RD TOWN OF NISKAYUNA, SCHENECTADY COUNTY, NEW YORK

3. CONTOUR INTERVAL DEPICTED HEREIN IS TWO (2) FOOT.

1. EXISTING PHYSICAL FEATURES, BOUNDARIES, AND TOPOGRAPY SHOWN HEREIN ARE BASED OF

2. Engineering ventures has not performed any boundary or topographic surveys. The property lues, sessionants, and other real property desorptions provided on these plans to not define lead. Regits or head to lead any sensitivity for a lund survey as desorbed in my statutes, and small hot be used as the basis of any lund transferr or estimationant of any property read.

4. UTILITES SHOWN DO NOT PURPORT TO CONSTITUTE OR REPRESENT ALL UTILITES LOCATED UPON OR AUACENT TO THE SURFYED PREMESS. EXISTING UTILITES SHORM ON THE FLANS WEET TAKEN FROM FED DESEMBNOIS OF VISIBLE UTILITES AND PREVIOUS MAPS AND RECORD UTILITY DRAWINGS AND NOT GUAPANTEED TO BE ACCURATE OR COMPLETE.

A PLAN ENTITLED "SURVEY LANDS OF RPL FAMILY TRUST #2890 RIVER ROAD", PREPARED BY GILBERT WANGUILDER LAND SURVEYOR, PLLC AND DATED DECEMBER 01, 2022.

SHEET SHEET TITLE

SYMBOL LEGEND



SCALE: 1 =400



LINETYPE LEGEND

PROPOSED FEATURES EXISTING FEATURES MAJOR CONTOL 100 MAJOR CONTOUR ____ 98 ___ - MNOR CONTOUR ----- 98 ------- MINOR CONTOUR - PROPERTY LINE PROPERTY I MA · ---- SETBACK . _____ SETRACK _____ · ____ · ____ EASEMENT - CENTERLIN - CENTERLIN - EDGE OF PAVEMEN EDGE OF PAVEMENT ------ EDGE OF GRAVEL - EDGE OF CONCRETE - EDGE OF CONCRETE - CURB CURB X X KARABED WRE FENCE (RADDED WADE) - o - o Fence (Chain Link) - FENCE (CHAIN LINK) - o ----- o ----- FENCE (WOODEN) FENCE (WOODEN) . TREE LINE STONE WALL STONE WALL SANITARY SEWER SAMITARY SEWER SANITARY SEWER APPRO ____ SEWER FORCEMAIN SEWER FORCEMAN STORM LIN _____ ____ STORM LINE STORM LINE APPROX. UNDER DRAI UNDER DRAN FOUNDATION DRAIN FOUNDATION ORAN ____ ROOF DRAIN . ROOF DRAW UNDERGROUND, TELECOMM INDERGROUND TELECOMM - OVERHEAD TELECOMM UNDERGROUND ELECTRIC UNDERGROUND ELECTRIC -OHE ---------- OVERHEAD ELECTRIC - OVERHEAD ELECTRIC -6" WATER LINE WATER LINE . WATER APPROX -8" w ------- 8" WATER LINE ____ __ NRCS SOIL BOUNDARY Planning Board Chairman Date Town Engineer Date



101 Mary Plan



N

Start The SITE LEGEND AND NOTES	Project This:	2890 RIVER ROAD MINOR SUBDIVISI	TONAL OF MICKAVINIA COUGNECTADY COUNTY AV
.v Project #			230
Designed Days			

C

ecked By:

C001

AS NOTE











GRAVITY AND SEWER FORCE MAIN TRENCH DETAIL

NOT TO SCALE 2

6.

7.



SDR-35 PVC PIPE



HERE: I MUSC on othere for the case of case of the ca

DURING COGRIMICITION NAD FREE OF UNSUITABLE MUEDINGS SEG EDINGS IN THE LUMMINERY SECTIONICIDS RULLED ON THESE 1. ON MICHINGUL MUEDINGS SUILLE COMPARIZIES NAS EPPER 5 NOT DURINGS THESE TO 8. POCIELL MUEDINGS SUILLE COMPARIZIES NA 12' LUMES TO 523 OF MUEDIES POCIERA (SUIL 1557) DINHINIS S'EET OF MUEDIES DURINGE MUEDIES NOT MUEDIES NOT SUILLE COMPARIZIES NAS AUGUSTES DINGS NOT MUEDIES 5. STOCIEDE PROCEIRA (SUILISTIS) MOIN LUMIN OR THER MUEDIELLOPED SPACE THE UPPER 3 TEST SUILLE COMPARIZIES NA 1. STOCIEDE PROCEIRA (SUILISTIS) MOIN LUMIN OR THER MUEDIELLOPED SPACE THE UPPER 3 TEST SUILLE COMPARIZIES 10 52% MUEDIES PROCEIRA.

WATER TRENCH DETAIL NOT TO SCALE 4



NOT TO SCALE 5



COPPER SERVICE CONNECTION DETAI OT TO SCALE (6)



hecked By:

C501









- Thee protection notes: 1. To oluculate the critical root radius, estimate the tree's height and multiple by 40 percent (avd). The result is the approximate distance from the tree trunk to the edge of the construction fercing.
- FENCE SPECIMEN TREES AND GROUPS OF TREES. WHERE ROOT LOSS WILL OCCUR, ROOT PRUME ONE FOOT BEYOND THE CONSTRUCTION FENCE USING A VIBRATING KINFE OR NARROW TRENCHER ALWAYS WITH SHARP BLADES TO MAKE CLEAN CUTS. BACKFILL MANEDATELY AND COVER WITH 3 INCHES OF MALCH.
- INSTALL SILT FENCE ON THE INTERIOR OF THE CONSTRUCTION FENCING TO KEEP SOIL FROM DISTURBED AREAS OUT OF THE ROOT ZONES OF TREES TO BE SAVED.
- 4. FERTILIZE, WATER, AERATE AND OTHERWISE AID TREE HEALTH.
- COORDINATE THE FINAL LOCATION OF THE CONSTRUCTION FENCING AND ROOT PRUNING WITH THE OWNER.

TREE PROTECTION FENCING DETAIL





CONCRETE WASHOUT AREA NOTES

- ALL CONCETE INSOLUTI FACILITIES SAVE, ER INSPECTID DURT, DAWED DR LEARDIN FACILITIES SAVEL ER DUCHTIMICA DR REVENT/SPARLED BRENERT, DESS BRANKETTER IM INS ACQUALITATE DURF MARINED CONCETTE SAVEL IR FAMILIES THAT A STRAETER ARA, SLOV KA A ANSE TITTE TIMP. STRAETER STATUTES SAVEL IR FAMILIES THAT AND A STRAETER AND A STRAETER STRAETER STRAETER STATUTES SAVEL IN AND STRAETER AND A STRAETER STRAETER STRAETER HERE STRAETER SAVEL IN AND STATUTES AND A STRAETER STRAETER STRAETER HERE STRAETER STRAETER STRAETER IN A MONOSINT FACILITY. ON ESSE DATA HERE STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER ALLORD TO THE STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER MARINE STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER ALLORD TO THE STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER MARINE STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER MARINE STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER MARINE STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER MARINE STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER STRAETER MARINE STRAETER STRAE 1. ALL CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY. DAWAGED OR LEAKING FACILITIES SHALL BE

concrete washout sign on









3.

4

- IN PLANS. SET SPROME OF CHEOR DAWS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAW IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAW. EXTRO THE STORE A MINIMUL OF 15 AFTER BEROND THE DIFORT BAWNS TO PROVENT CUTTING AROUND THE DAW. REDITED THE CONNECT DOWNSTREAM OF THE LOWEST DAW FROM SCOLA AND EROSON WITH STONE OR
- House in the convect outershown of the cures i due hour source and existing thin stoke of Liker as Appropriate. Ensure that owned, papertenances such as cuvert entrances below check dang are not subject to dang of Buckard from USPAUCE stokes. Remove accounting schement behad check dang when 1/2 the height of the dang. Replace Stokes as necessary.



GENERAL EROSION CONTROL NOTES

- 2020EL WOTS 1. NET MORE TERSION CONTROL FLAW CORRENATOR[®] SHILL EF PRESENT ON-STIE FROM DAY-TO-DAY, AND SHILL EF 1. NET MORE FOR EDRAWING THE TE BODGING CONTROL MURGINES RECORDED OF THE ETBODGING CONTROL MURG. THE MORE TRANSPORTENT VERSLED AND MUNREE. THE GODGING CONTROL FLAW, EDRALIS MORE TRANSPORTENT VERSLED AND MUNREE. THE GODGING CONTROL FLAW, EDRALIS MORE TRANSPORTENT VERSLED AND MUNREE. THE GODGING CONTROL FLAW, AND ONE MORE TRANSPORTENT VERSLED AND MUNREE. THE GODGING CONTROL FLAW, AND ONE MORE TRANSPORTENT VERSLED AND MURLINEE. CONTROL FLAW, AND ONE MORE TRANSPORTENT VERSLED AND MURLINEE VERSLED AND THE THE FORM CONTROL FLAW, AND MORE TRANSPORTENT VERSLED AND FUEL AND THE THE FORM CONTROL FLAW, AND THE MORE TRANSPORTENT VERSLED AND FUEL AND THE THE FORM CONTROL FLAW, AND THE MORE TRANSPORTENT VERSLED AND FUEL AND THE FORMATION OF THE FORMATI
- EROSION CONTROL MEASURES SHALL BE CONDUCTED IN ACCORDANCE WITH THE "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROLS", DATED NOVEMBER 2016, OR LATEST EDITION.
- DISTURBANCE UNITS ARE TO BE WARKED, AND THE FOLLOWING MANAGEMENT PRACTICES INSTALLED, PRIOR TO BEGINNING EARTH WORK IN ANY GIVEN AREA: SILT FENCE, CONSTRUCTION ENTRANCE, INLET PROTECTION, AND TREE PROTECTION FENCING 4. THE PERIOD BETWEEN OCTOBER 15TH AND APRIL 15TH IS CONSIDERED THE "WINTER CONSTRUCTION PERIOD". A PLAN FOR WINTER CONSTRUCTION MUST BE DEVILOPED BY THE CONTINUETOR, AND SUBMITED TO THE ENGINEER AT LEAST 30 DAYS IN ADVINCE OF PROPOSED LEARN IDSTRUMENCE DURING THIS FERSON.
- 5. ALL GENERAL MACE ARE TO BE SUBJECT (THEREAVER OR INVE). WHILE 7 DO REF WITH THE STORAGES ANTE THE THE THE MACE MACE THE STORAGES ANTE THE DO STORAGES ANTE THE TRUDNED DOSTRONG.
 5. SUBJECTION IS IN FORCINGE TO PROVIDE STO DOSTRUE THE ARE A MIRIN 24 HOURS MON DO PROSTRONG IS A STORAGES ANTE THE DO STORAGES AND PROSTRONG IS AND PROVIDED DOSTRONG.
 5. BUT ON STORAGES ANTE THE ASSOCIATION OF A STORAGES ANTE THE DO STORAGES ANTE THE DO STORAGES AND PROSTRONG IS AND
- 6. The contractor is responsible for daly inspection of the adjacent roadways for off-site tracking of soil, materials, soil, stone, and derive to the readout of the readout (when found) by safeting at the end of each construction bay, or nore regional tracked to prevent invects to adjacent radius and
- IF DEWATERING IS REQUIRED FOR CONSTRUCTION, THE CONTRACTOR MUST UTILIZE SEDMENT FILTER BAGS (OR ALTERNATE APPROVED BY THE ENGINEER) TO PREVENT DISCHARGE OF SEDMENT-LAGEN WATER OFF SITE.
- TEMPORARY/CONSTRUCTION EROSION CONTROL MEASURES 1. THE SMALLEST PRACTICAL AREA OF LIND SHALL BE DISTURBED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LIND IS DISTURBED, THE DISTURBANCE SHALL BE KEPT THE SHORTEST PRACTICAL DURATION AS APPROVED BY THE ENGINEER.
- DUST SHALL BE CONTROLLED WITH WATER DISTRIBUTED BY A TRUCK-MOUNTED SPRAY BAR. CALCIUM CHLORDE (AASHTO M 144) OR SODIUM CHLORDE (AASHTO M 143) SHALL BE USED AS DIRECTED BY THE ENGINEER.
- 3. SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE PLANS Sul fermas shrild be instructed generally to feel than the bage of the fill sources, on as shrint and these shall ready in placed to the fill her product stre has been strendlyzed. Sourdant shall be provided fro berhad the slit fence when it becomes 6 inches deep at the fence. The slit fence will be repared as necessary to warran a report scidnet barrer.
- EXCAVATED MATERIAL FROM EARTH EXCAVATION AND DITCH DIGGING SHALL BE PLACED ONSITE IN A LOCATION TO APPROVED OF BY THE OWNER AND/OR THE ENGINEER OR USED FOR PROJECT FILL MATERIAL IF DETERMINED SU THE OWNER'S REPRESIVATION.
- stockpled waterw, (topsol, borrow, etc.) swal, hwo sly fedre constructed around the perinter. The stockpled waterw, swal, be seened no walance as scon as possible to propert sou, broskn no stochardnik, or stiel locate stockples on the light as de of istimers parks, fe possible, comen way conditions, stockpled waterw, swal, be covered or waterd appropriately to prevent wind eroson.

PERMANENT EROSION CONTROL MEASURES 1. WHEN FINAL GRADES ARE REACHED IN AN AREA, IT SHALL BE SEEDED AND MULCHED WITHIN 48 HOURS.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUED MAINTEININCE OF ALL DISTURBED AREAS, INCLUDING WATERING UNTIL THE AREA IS INSPECTED AND ACCEPTED BY THE OWNER OR ENGINEER.
- 3. AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED
- 5. ALL STABILIZATION INVOLVING SEEDING IS TO BE COMPLETED BY SEPTEMBER 15TH.



NOTES: 1. All project dematering pumps small discharge into a pumped sediment control dence. 2. Gedevitie Bag Materia, Based on particle size in pumped water, i.e., for coarse particles a woven

- 2. GUIDELE DER MURICHE DERE UN FWINZLE SICH IN VOMEN MURICH, ELL FOR CURREN PRINTERS A MORTH MURITERU, FOR SICH SICH AND MURICHEN STUDIES UND FOR PRESSARZED DER GE UST HERTEN AUCH VOMEN PRESSARZED DER GE UST EENTEN DAVIG AVAN VA POSSBELF FORM STERUNG, METHANS, OTHER RESSARZES MID FORMS OF CONCENTIONED FORM. ANAL VA POSSBELF FORM STERUNG, METHANS, OTHER RESSARZES MID FORMS OF CONCENTIONED FORM.
- FLOOR, GRASS LAWN OR COARSE GRAVEL/STONE. DISCHARGE LOCATION SHALL WET HALL REQULATORY SETRACKS FROM WETLANDS AND OTHER WATER COURSES. HEAVY EQUIPMENT ACCESS TO THE THE PUMPED SEDWENT CONTROL DEVICE SITE SHALL BE MAINTAINED FOR REPLACEMENT AND DISPOSAL.

NOT TO SCALE 5

9 FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION CLEANING AND REMOVAL PUMPED WATER FILTER BAG

WINTER EROSION CONTROL NOTES

- whiter construction standards and erosion and sediment control measures apply to all construction activities would with ongoing land disturbance and diposure between october 15th to the following appl. 15t.
- WINTER CONSTRUCTION PROCEDURES. 1. DURING WINTER CONSTRUCTION, INSPECTIONS BY THE ON-SITE PLAN COORDINATOR SHALL OCCUR DALLY WHEN AREYS ARE UN-STABLE, AND WEEKLY PROR TO ANY FOREASTED RAIN, THAW OR SPRING NELT WHEN TEMPORARY STABILIZATION IS IN PLACE.
- IF THE SITE WILL NOT HAVE EARTH DISTUREING ACTIVITIES ONGOING DURING THE WINTER CONSTRUCTION PERSON, ALL BREE EPIPOSED SOL, MUST ES STABLUZDE PET STABLISHING VEGETINION, STRAW GR OTHER ACCEPTAGE MULCIN, MUTTINI, ROCK, OR OTHER APPORTUNED MUSTING SUCH AS ROLLED BOSON ONTONIC PRODUCTS. SEEDING GR AREAS WITH MULCH COVER IS IMPETIRED BUT SEEDING ALONE IS NOT ACCEPTINGLE FOR PROPER STABLIZZIONE.
- PREPARE A SNOW MANAGEMENT PLAN WITH ADEQUATE STORAGE FOR SNOW AND CONTROL OF MELT WATER, REDURING CLEARED SNOW TO BE STORED IN A MANNER NOT AFFECTING ONCOMING CONSTRUCTION ACTIVITIES
- Enlarge and stabilize access points to provide for snow management and stockplung. Snow management activities must not destroy or degrade installed erosion and sediment control practices. 5. LINITS OF DISTURBANCE SHALL BE WOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK.
- A MINIMUM 25-FT BUFFER SHALL BE MANTAINED FROM ALL PERMETER CONTROLS (SUCH AS SLT FENCE) TO ALLOW FOR CLEARING AND MAINTENANCE. MARK SLT FENCE WITH TALL STAKES THAT ARE VISIBLE ABOVE THE SHOW PACK.
- SNOW IS TO BE REMOVED FROM ALL STRUCTURAL EROSION AND SEDMENT CONTROL MEASURES FOLLOWING EACH SIGNIFICANT SNOWFALL NO SNOW STORAGE UP-GRADENT OF DISTURBANCE. NO SNOW DISFOAL IN SEDMENT PONDS/MISING. IF RECESSARY, SNOW/CE MUSIC BE REMOVED PONDR TO STRUCTURING OF DISTURBED AREAS. 8. EDGES OF DISTURBED AREAS THAT DRAIN TO A WATERBODY WITHIN 100 FT SHALL HAVE 2 ROWS OF SILT FENCE, 5
- DRAINAGE STRUCTURES SHALL BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS. ALL DEBRIS, ICE DAMS, OR DEBRIS FROM PLOWING OPERATIONS, THAT RESTRICT THE FLOW OF RUNOFF AND MELTWATER, SHALL BE REMOVED
- SEDIMENT BARRIERS MUST BE INSTALLED AT ALL APPROPRIATE PERMETER AND SENSITIVE LOCATIONS. SLT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE MUST BE INSTALLED BEFORE THE GROUND FREEZES.
- STOCKPILES MUST BE PROTECTED BY THE USE OF ESTABLISHED VEGETATION, ANCHORED STRAW MULCH, ED STABLIZATION MATTING, OR OTHER DURABLE COMERNO. A BARRER MUST BE INSTALLED AT LEAST 15 FT I THE TOE OF THE STOCKPILE TO PREVENT SOL INGRATION AND TO CAPTURE LOOSE SOL.
- 13. IF STRAM MULCH ALONE IS USED FOR TEMPORARY STABLIZATION, IT SHALL BE APPLED AT DOUBLE THE STANDARD RATE OF 2 TONS PER ACRE, MANNE THE APPLGATION RATE 4 TONS PER ACRE. OTHER MANUFACTURED MULCHES SHOLLD BE APPLED AT DOUBLE THE MANUFACTURER'S RECOMMENDER ART.
- 14. TO ENSURE ADEQUATE STABILIZATION AND COVER OF DISTURBED SOL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOL, SHOULD BE STABILIZED AT THE END OF EACH WORK DAY WITH THE FOLLOWING EXCEPTIONS: a. WORK WILL RESULUE WITH 24 HOURS IN THE SWE AREA AND NO PREPENTION IS FOREZOFT OR; b. THE WORK IS IN DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS OPEN UTILITY TRENCHES, FOUNDATION EXCANATIONS, OR WATER MANAGEMENT AREAS.
- 15. USE STONE PATHS TO STABILIZE ACCESS PERIMETERS OF BULDINGS UNDER CONSTRUCTION AND AREAS WHERI CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED. STONE PATHS SHOULD BE A MINIMUM 10 FT IN WOTH BUT WIDER AS DECESSARY TO ACCOMMODIFE EQUIPARIT.
- ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE BY OCTOBER 15, OR IF NOT POSSIBLE, THEN PRIOR TO GROUND FREEZE.
- 17. SNOW AND ICE SHALL BE REMOVED TO LESS THAN 1" THICKNESS PRIOR TO STABILIZATION

CONSTRUCTION SEQUENCING

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A DETAILED CONSTRUCTION SEQUENCE DETAILING THE SPECIFIC WORK THAT WILL BE PERFORMED. THE SEQUENCE PROVIDED IS FOR GENERAL WORK ITEMS TO ENSURE THAT SEDIMENT LADEN RUNOFF IS NOT DISCHARGED FROM SITE. CONTRACTOR TO ENSURE THAT NO MORE THAN 5 ACRES IS DISTURBED AT ANY ONE TIME WITHOUT AREAS BEING FULLY STABILIZED.

- OBTAIN ALL INCESSARY APPROVALS AND PERMITS FROM THE APPROPRIATE AGENCIES INCLUDING THE NYSDEC, ACOE, AND THE TOWN OF INSKAYUNA.
- 2. HOLD PRE-CONSTRUCTION MEETING WITH ALL NECESSARY PARTICIPANTS AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION
- 3. INSTALL STABILIZED CONSTRUCTION ENTRANCE. MARK LIMITS OF DISTURBANCE WITH FLAGGING/TAPING OF APPROPRIATE MEASURES, INSTALL SILT FENONG DOWNSLOPE OF WORK AREAS AS SHOWN ON THE PLAN, INSTALL INLET PROTECTION ON EXISTING CATCH BASIN IN SENECA ROAD.
- 4. CLEAR AND GRUBB EXISTING VEGETATION TO THE LIMITS SHOWN ON THE PLAN
- SUITABLE BY ENGINEER
- STRP TOPSOIL FROM AND BEGIN FOUNDATION EXCAVATION AND ROUGH GRADING. FUTURE BIO-RETENTION BASIN AREAS NOT TO BE EXCAVATED AT THIS TIME TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE BASINS.
- BEGIN CONSTRUCTION OF BUILDING FOUNDATIONS. CONCRETE INSHOUT AREA TO BE INSTALLED AND FUNCTIONING PROR TO ANY CONCRETE BEING FOURED FOR THE BUILDING FOUNDATION. BUILDING WORK MAY CONTINUE THROUGH REMAINING DURATION OF PROLECT.
- 9. INSTALL ALL REMAINING UNDERGROUND UTILITIES, INCLUDING STORM CONVEYANCE SYSTEMS.
- 10. FINAL GRADE PAVEMENT AREAS AND INSTALL PAVEMENT BASE COURSES.
- . Once all upslope tributary areas have been stabilized, the bio-retention basins may be installed. Special care to be taken to not compact the native soils at the bottom of the bio-retention basins
- 12. INSTALL LANDSCAPING AND IMMEDIATELY STABILIZE ALL 3:1 SLOPES WITH EROSION CONTROL BLANKET.
- 13 INSTALL ANY REMAINING HARDSCARE
- ONCE ALL DISTURBED AREAS HWE ACHEVED FINAL STABILIZATION, THE REMAINING EROSION CONTROL FEATURES SINAL BE REMOVED. STABILIZE MY MERIS DISTURBED DURING THE REMOVAL OF TEMPORARY EAS MEDISURES. INSTALL PERMINENT SEED AND MUCHO IN MY MERIS NOT ALEADY STABILIZED.
- 15. INSTALL BINDER AND WEARING COURSES FOR ALL PAVEMENT AREAS



101

Mar Bar

IGINEERING

rust ane 2309 Family Whamer Una, NY -

RPL 2505 Niska

- බ

I AND SEDIMENT DETAILS (2 OF 2

EROSION / CONTROL E

cked By:

ROAD MINOR SUBDIVISION

RIVER

2890

223

AS NOTE

- 5. BEGIN DEMOLITION OF EXISTING STRUCTURES AND UTILITIES AS SHOWN ON THE DEMOLITION PLAN. CONTRACTOR TO STORE EXCMATED SUBBASE MATERIAL FOR RE-USE ON SITE IN DESIGNATED STAGING AREA, IF DEEMED
- 8. INSTALL PROPOSED WATERLINE AND SANITARY SEWER LINE



- aject #

Attachment 9

Endangered Species Habitat Suitability Assessment Phase 1 Archeological Survey NYS Historic Preservation Office (SHPO) Letter

Gilbert VanGuilder Land Surveyor, PLLC

988 Route 146, Clifton Park, NY 12065 383-0634 FAX 371-8437

<u>Members</u> Robert Wilklow, PLS Kevin Weed, PLS

September 22, 2023

Endangered Species Habitat Suitability Assessment Report

To whom it may concern,

This letter and enclosed information were prepared in summary of a habitat study performed on September 22, 2023, TMP # 51.-1-7.1 (2890 River Road). The subject parcel is located on the southwest side of River Road, and the north side of Seneca Road in the Town of Niskayuna. The parcel is approximately $5.26\pm$ acres in size, currently consists of a single-family home, associated asphalt driveway, lawn area, brushy areas with the remaining land being forested. The proposed project includes approximately $1.30\pm$ acres of tree clearing/grubbing, with the construction of four single family residential homes, associated private driveways, with connection to public water and sanitary services.

An inquiry was submitted to U.S. Fish and Wildlife Service through the IPaC website to identify any potential threatened/endangered species that may occur within the subject parcel. The Service identified the Northern Long-eared Bat (*Myotis septentrionalis*) as potentially being present.

<u>Species Requirements:</u> Northern Long- Eared Bat:

According to the U.S. Fish and Wildlife Service's website, "Suitable summer habitat for the NLEB consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags \geq 3 inches DBH that have exfoliating bark, cracks, crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. NLEBs are nocturnal foragers and use hawking (catching insects in flight) and gleaning (picking insects from surfaces) behaviors in conjunction with passive acoustic cues (Nagorsen and Brigham 1993, p. 88; Ratcliffe and Dawson 2003, p. 851). NLEB seem to prefer intact mixed-type forests with small gaps (i.e., forest trails, small roads, or forest-covered creeks) in forest with sparse or medium vegetation for foraging and commuting rather than fragmented habitat

or areas that have been clear cut (USFWS 2015, p. 17992). Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1,000 feet of other forested/wooded habitat28. The NLEB has also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. NLEBs typically occupy their summer habitat from mid-May through mid-August each year30 and the species may arrive or leave some time before or after this period. Examples of unsuitable habitat: Individual trees that a greater than 1,000 feet from forested/wooded areas; Trees found in highly developed urban areas (e.g., street trees, downtown areas); and A pure stand of less than 3-inch DBH trees that are not mixed with larger trees. Suitable roosting habitat is defined as forest patches with trees of 5-inch (12.7 cm) DBH or larger."

Habitat Suitability:

For the proposed project there is approximately $1.30\pm$ acres of tree clearing proposed. The majority of trees present within the project APE consist of trees with relatively smooth bark such as Red Maple (*Acer rubrum*), White Pine (*Pinus strobus*), Aspen Big Tooth (*Populus grandidentata*) and Northern Red Oak (*Quercus rubra*) which do not exhibit characteristics of suitable habitat. However, there are four trees within the project APE that possess exfoliating bark or crevice's that are proposed to be harvested. Within the wetland onsite there is an abundance of standing dead timber that possess crevices or exfoliating bark that are not proposed to be harvested and will remain intact. If tree clearing is conducted within winter months when Northern Long-eared Bats are likely to be in a hibernaculum and are not likely to occur in forested habitat (November 1 – March 31), we feel this project will have minimal effect on Northern Long-eared Bat roosting habitat.

The wetlands onsite will provide an abundance of flying insects, and therefore potential foraging habitat for the Bat. For the proposed project there are two small areas of wetland impact proposed, the majority of the wetlands onsite will remain intact. Therefore, we feel this project will have minimal effect on Northern Long-eared Bat foraging habitat for the Bat. There are no known maternal roost trees onsite, and the project site is not located within 0.25 miles of a hibernaculum.

The project sponsor proposes to minimize and mitigate for potential impacts by, 1.) Site clearing will occur during winter months November 1 - March 31. 2. Installation of construction fence around the perimeter of the proposed clearing to eliminate incidental additional clearing. 3.) Prohibiting the use of pesticides and herbicides onsite. 4.) Construction activities will not be performed after sunset.

Respectfully, Jackie Pitts Jackie Pitts Environmental Technician



Figure 1: N.Y.S.D.E.C. Rare Plant or Animals Mapping

NYSDEC Rare Plants or Animals Layer

Figure 2: IPaC Resource List

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Schenectady County, New York



Local office

New York Ecological Services Field Office

(607) 753-9334
(607) 753-9699

■ (007) 753-9099
■ <u>fw5es_nyfo@fws.gov</u>

3817 Luker Road Cortland, NY 13045-9385



This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

- 1. Draw the project location and click CONTINUE.
- 2. Click DEFINE PROJECT.
- 3. Log in (if directed to do so).
- 4. Provide a name and description for your project.
- 5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the <u>Ecological Services Program</u> of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact <u>NOAA Fisheries</u> for <u>species under their jurisdiction</u>.

1. Species listed under the <u>Endangered Species Act</u> are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the <u>listing status page</u> for more information. IPaC only shows species that are regulated by USFWS (see FAQ). 2. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species.	Endangered
https://ecos.fws.gov/ecp/species/9045	
Insects NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. <u>https://ecos.fws.gov/ecp/species/9743</u>	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

0

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the <u>Bald and Golden Eagle Protection Act</u> and the <u>Migratory Bird Treaty Act</u>.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described <u>below</u>.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds <u>https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds</u>
- Nationwide conservation measures for birds <u>https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf</u>

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list,click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON

Bald Eagle Haliaeetus leucocephalus

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Golden Eagle Aquila chrysaetos

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <u>https://ecos.fws.gov/ecp/species/1680</u> Breeds Jan 1 to Aug 31

Breeds Dec 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey

effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

- 1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
- 2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
- 3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (=)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (l)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

			■ p	robabili	ty of pre	esence	bree 🗧	ding sea	ason	l survey e	effort	— no data
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Bald Eagle Non-BCC Vulnerable

Golden Eagle Non-BCC Vulnerable

****** **** **** **** **** **** **** **** ******

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the <u>Avian Knowledge Network (AKN)</u>. The AKN data is based on a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science datasets</u> and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (<u>Eagle Act</u> requirements may apply). To see a list of all birds potentially present in your project area, please visit the <u>Rapid Avian Information Locator (RAIL) Tool</u>.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS <u>Birds of Conservation Concern (BCC)</u> and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the <u>Avian Knowledge</u> <u>Network (AKN)</u>. The AKN data is based on a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science</u> <u>datasets</u> and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (<u>Eagle Act</u> requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the <u>Rapid Avian Information Locator (RAIL) Tool</u>.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the <u>Eagle Act</u> should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act^{1} and the Bald and Golden Eagle Protection Act^{2} .

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described <u>below</u>.

- 1. The <u>Migratory Birds Treaty Act</u> of 1918.
- 2. The <u>Bald and Golden Eagle Protection Act</u> of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <u>https://www.fws.gov/program/migratory-birds/species</u>
- Measures for avoiding and minimizing impacts to birds <u>https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds</u>
- Nationwide conservation measures for birds <u>https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf</u>

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the <u>E-bird data mapping tool</u> (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found <u>below</u>.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Belted Kingfisher Megaceryle alcyon This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 15 to Jul 25

Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9399</u>	Breeds May 15 to Oct 10
Blue-winged Warbler Vermivora pinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30
Bobolink Dolichonyx oryzivorus	Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	4
Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Cerulean Warbler Dendroica cerulea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/2974</u>	Breeds Apr 20 to Jul 20
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Eastern Meadowlark Sturnella magna This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 25 to Aug 31
Eastern Whip-poor-will Antrostomus vociferus	Breeds May 1 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	
Evening Grosbeak Coccothraustes vespertinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10

Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9679</u>	Breeds elsewhere
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Upland Sandpiper Bartramia longicauda This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <u>https://ecos.fws.gov/ecp/species/9294</u>	Breeds May 1 to Aug 31
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey

effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

- 1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
- 2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
- 3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (=)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (l)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

			■ p	robabili	ty of pre	esence	bree 📕	ding sea	ason	l survey e	effort	— no data
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Bald Eagle Non-BCC Vulnerable	↓↓ ↓↓				 	ŧŧŧŧ	* * * *		****	***	₩₩┼₩	+‡‡‡
Belted Kingfisher BCC - BCR	₩ #+₩	+#+#	* <mark> </mark>			111	1111		****			
Black-billed Cuckoo BCC Rangewide (CON)	++++	++++	++++	++++	+ <mark>₩₩</mark> ₩	 <u> </u> + <u> </u> + + <u> </u> + + <u> </u> + <u> + </u> + <u> + </u> +	+ + + +	ŧŧŦŧ	ŧ ŧ¦¦	<mark>∳</mark> ∔++	++++	++++
Blue-winged Warbler BCC - BCR	++++	++++	++++	++++	+ +++	++++	• ++ •	₩ +++	** ++	++++	++++	++++
Bobolink BCC Rangewide (CON)	++++	++++	++++	++++	++++	∎ <u></u> <u></u>	++++	┼╪╪┼	# +++	++++	++++	114)
Canada Warbler BCC Rangewide (CON)	++++	++++	++++	++++	++##	++++	++++	<mark> </mark>	M	<u>t</u> tt	1111	++++
Cerulean Warbler BCC Rangewide (CON)	++++	++++	++++	┼┼╂╂	+++++	+++++	<u>H</u>	++++	++++	++++	++++	++++
Chimney Swift BCC Rangewide (CON)	++++	++++	+++++	HI	IJН	1111			## #+	++++	++++	++++
Eastern Meadowlark BCC - BCR	++++	+++	++++	┼┿┿╂	++++	1111	₩ ₩₩	++++	++++	┼╪┼┼	₩ <u>+</u> ++	++++
Eastern Whip- poor-will BCC Rangewide (CON)	++++	++++	++++	++++	 	ŧŧ++	++++	 +	++++	++++	++++	++++
Evening Grosbeak BCC Rangewide (CON)	++++	++++	++++	┼┿┼┿	┼╂╂┼	++++	++++	<mark>┼┼</mark> ┼┼	++++	 +#+	+ # +#	₩ +++
Golden Eagle Non-BCC Vulnerable	┼┼┼┼	++++	∳ ╂┼┼	┼┼┼┼	++++	++++	++++	++++	++++	++++	++++	++++
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Lesser Yellowlegs BCC Rangewide (CON)	++++	++++	++++	┼┼┿♥	* **+	++++	++++	+###	* **†	• +++	++++	++++


Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

<u>Nationwide Conservation Measures</u> describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. <u>Additional measures</u> or <u>permits</u> may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS <u>Birds of Conservation Concern (BCC)</u> and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the <u>Avian Knowledge</u> <u>Network (AKN)</u>. The AKN data is based on a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science</u> <u>datasets</u> and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (<u>Eagle Act</u> requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the <u>Rapid Avian Information Locator (RAIL) Tool</u>.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the <u>Avian Knowledge Network (AKN)</u>. This data is derived from a growing collection of <u>survey</u>, <u>banding</u>, <u>and</u> <u>citizen science datasets</u>.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the <u>RAIL Tool</u> and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

- 1. "BCC Rangewide" birds are <u>Birds of Conservation Concern</u> (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
- 2. "BCC BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
- 3. "Non-BCC Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the <u>Eagle Act</u> requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the <u>Northeast Ocean Data</u> <u>Portal</u>. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the <u>NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird</u> <u>Distributions and Abundance on the Atlantic Outer Continental Shelf</u> project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the <u>Diving Bird Study</u> and the <u>nanotag studies</u> or contact <u>Caleb Spiegel</u> or <u>Pam Loring</u>.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to <u>obtain a permit</u> to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the <u>National Wildlife Refuge</u> system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of</u> <u>Engineers District</u>.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the <u>NWI map</u> to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies.

Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



PHASE 1 ARCHAEOLOGICAL SURVEY 2890 RIVER ROAD TOWN OF NISKAYUNA SCHENECTADY COUNTY 23PR05721

prepared by

Timothy J. Abel, PhD 33512 SR 26 Carthage, NY 13619

for RPL Family Trust 2505 Whamer Ln Niskayuna, NY 12309

November 21, 2023

MANAGEMENT SUMMARY

PROJECT NAME/PIN: 2890 River Road/23PR05721

PROJECT TYPE/FUNDING: new construction/ private CULTURAL RESOURCE SURVEY TYPE: Phase 1 archaeological survey

LOCATION: Town of Niskayuna, Schenectady County

SURVEY AREA (APE): 2.3 ha (5.7 ac) U.S.G.S. QUAD NAME: Niskayuna, NY

SENSITIVITY ASSESSMENT: Prehistoric: High based on proximity to known sites and streams Historic: High based on MDS

ARCHAEOLOGICAL SURVEY METHODS: Number of STPs: 66 Number of Units: 0 Surface survey: n/a

RESULTS OF ARCHAEOLOGICAL SURVEY: Number of prehistoric sites identified: 0 Number of historic sites identified: 0 Number of NR listed/eligible sites that may be impacted: 0

AUTHOR: Timothy J. Abel, PhD

DATE: November 21, 2023

SPONSOR: SEQRA

TABLE OF CONTENTS

1.0 INTRODUCTION	1
1.1 Project Area Definition	3
1.2 Physical Setting	3
1.3 Current Land Use and Integrity	5
2.0 BACKGROUND RESEARCH	5
2.1 Site File Review	5
2.2 Historic Map Review	5
2.3 Occupation History	6
3.0 ARCHAEOLOGICAL ASSESSMENT	6
3.1 Prior Surveys	10
3.2 Site Walkover	10
3.3 Assessment	10
4.0 ARCHAEOLOGICAL SURVEY	10
4.1 Survey Methods	10
4.2 Survey Results	10
5.0 IMPACTS AND RECOMMENDATIONS	10
REFERENCES CITED	13
APPENDIX 1– SHOVEL TEST RECORDS	

LIST OF FIGURES

Figure 1– General project location	1
Figure 2 - Project setting	3
Figure 3- Project area and Area of Potential Effect	4
Figure 4– Project Area Soils	4
Figure 5–10- Historic maps	7-9
Figure 11- Survey maps	12

1.0 INTRODUCTION

This report documents a Phase 1 archaeological survey of 2890 River Road, Niskayuna, New York (NY), a residential parcel of 5.74 ac (tax lot 51.00-1-7.1) (Figure 1, Photo 1-2). The survey was requested by NYS Office of Parks, Recreation and Historic Preservation (OPRHP) to aid in their review of project 23PR05721, 2890 River Road Subdivision and One New Single Family Home. The survey was performed under contract with the lot owner, RPL Family Trust of Niskayuna, NY.

All aspects of the investigation were directed by Timothy J. Abel, PhD, who is the author of this report. The author is qualified as a consulting archaeologist under Section 36 CFR 61 of the National Parks Service Regulations, and under Section 14.09 of the State Parks, Recreation and Historic Preservation Law.

The purpose of the Phase 1 archaeological survey is to determine the effect of the proposed undertaking on archaeological resources within an area or potential effect (APE). The APE was defined based on client request and consultation with OPRHP. The survey was conducted in accordance with OPRHP's *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (OPRHP 1994).



Figure 1– General project area location in Schenectady County.



Photo 1–View of typical ground cover within the PA.



Photo 2–View of overgrowth within the PA.



Figure 2– Project area location on the 1980 USGS 7.5" topographic map.

1.1 Project Area/Area of Potential Effect Definition

The project area (PA) is situated within the Town of Niskayuna, Schenectady County, NY, encompassing tax lot 51.00-1-7.1. The PA is located on the southwest side of River Road at the Seneca Road intersection. The lot encompasses 5.74 ac.

The area of potential effect (APE) for this undertaking was determined based on development plans provided by the client. It includes the entire tax parcel bounded by River Road on the northeast and parcel boundaries on all other sides. The APE encompasses 2.3 ha (5.74 ac) (Figure 3).

1.2 Physical Setting

The PA is situated within the Mohawk Valley section of the Hudson-Mohawk Lowland physiographic region (Cressey 1977). This region formed a significant corridor for transportation, commerce and communication throughout human history. The area is characterized by floodplains, terraces and lowland hills along the Mohawk River. Though the river flows in a narrow channel, the section is generally 16-48 km (10-30 mi) wide, bounded by steep erosion escarpments on either side that slope upward to the Appalachian and Adirondack Uplands.

The PA is situated on rolling lake plain topography between 86-91 m (282-300) ft above mean sea level (Figure 2). Slopes within the PA generally range from 3-8%. The PA drains into an unnamed wetland and swale that runs east-west through the PA and slopes eastward into the Mohawk River (Figure 2).

The soils of the PA are silt loams and channery silt loams created by run-off and sedimentation following the last deglaciation (Figure 4). These soils consist of a silty loam to loam topsoil, or in this case a plow zone, roughly 20-30 cm (10-12 in) in depth, above a silty loam to clay loam subsoil. Characteristics of the soils are summarized in Table 1. Deposition generally ended c. 15,300 cal BP with the drainage of the last of the pro-glacial lakes in the Mohawk Valley (Franzi, et al. 2016).



Figure 3– Project area boundaries.



Figure 4– Project area soils.

Table 1- Project area	soils data summary.
-----------------------	---------------------

Soil Type/ Symbol	Soil Horizon Depth	Color	Texture	Slope	Drainage	Landform
Fluvaquents, loamy; FL	A1- 0-13 cm (0-5 in) A2- 13-183 cm (5-72 in)	7.5YR2/1 10YR2/1	MuSiLo VGvSa	0-3%	Well	Floodplains
Madalin silt loam; Ma	Ap-0-23 cm (0-9 in) Eg-23-35 cm (9-14 in) Btg1-35-51 cm (14-20 in)	10YR3/2 10YR4/2 10YR5/2	SiLo SiLo SiCl	0%	poor to very poor	Lake Plains
Mardin chan- nery silt loam; MrD	Ap- 0-20 cm (0-8 in) BE- 20-30 cm (8-12 in) Bw1- 30-41 cm (12-16 in) Bw2- 41-51 cm (16-20 in) Bx1- 51-91 cm (20-36 in)	10YR4/3 2.5YR5/4 10YR5/4 10YR4/3 10YR4/4	Ch Si Lo Ch Si Lo Ch Si Lo Ch Si Lo Ch Si Lo	15-25%	Moderately well	Hills, slopes
Scio silt loam; ScB	Ap- 0-23 cm (0-9 in) Bw1- 23-48 cm (9-19 in) Bw2-48-79 cm (19-32 in) C- 79-102 cm (32-40 in) 2Cg- 102-183 cm (40-72 in)	10YR4/2 10YR5/6 10YR5/4 10YR5/3 2.5Y5/2	SiLo SiLo SiLo SiLo GvLoSa	3-8%	Moderately well	Outwash plains
Unadilla silt loam; UnB	Ap- 0-20 cm (0-8 in) Bw1- 20-30 cm (8-12 in) Bw2- 30-46 cm (12-18 in) Bw3- 46-79 cm (18-31 in) BC- 79-102 cm (31-42 in) 2C- 102-150 cm (42-65 in)	10YR4/3 10YR6/4 10YR5/6 10YR6/4 10YR5/4 10YR4/2	SiLo SiLo SiLo SiLo SaLo GvSa	3-8%	well	Lake Plain

1.3 Current Land Use and Integrity

The PA is situated in a suburban setting on a single residence lot. The residence at 2890 River Road has been unoccupied for some time, and is now condemned by the local Health Department. The rest of the lot is overgrown with woods and dense scrub thicket dominated by honeysuckle. There is a modern occupied residence adjacent to the north, and another across River Road to the east.

2.0 BACKGROUND RESEARCH

2.1 Site File Review

A search of the CRIS system at the time of survey revealed that the PA is within the polygon of one precontact archaeological site (NYSM 4750/9303.000128). The site is described as traces of occupation along the Mohawk River (Parker 1920). No further documentation is provided. These "traces" generally refer to reports of scattered artifact finds in an area, and not to discretely-defined sites. There may or may not be archaeological deposits present within the PA. There are five other inventoried archaeological sites within 1.6 km (1 mi) of the PA (Table 2).

There is one inventoried structure within the PA (2890 River Road/09303.000330). It is described as a single-family residence that has been determined National Register *not eligible*. There is one inventoried structure (2851 River Road/09303.000332) adjacent to the PA that is of undetermined National Register status. There are 25 other inventoried structures within 1.6 km (1 mi) of the PA. There are no properties listed on or eligible for the National Register of Historic Places within or adjacent to the PA.

2.2 Historic Map Review

Seven historic maps were reviewed for this survey ranging from 1856 to 1980 (Figures 2, 5-10). The lot appears in a rural agrarian setting from at least 1856. No structures are depicted within the PA on maps before 1930. Beginning in 1930, what is likely the extant residence at 2890 River Road is depicted consistently through 1980. Two farmsteads, one of which is consistent with the above inventoried structure at 2851 River Road, are depicted across River Road from the PA throughout the map sequence as W. van Vranken and J. van Vranken.

Table 2– List of known archaeological sites within 1.6 km (1 mi) of the project area.

USN	Name	Within/Adjacent	NR Status
9103.000102	UNNAMED SITE (NYSM 6235)		Undetermined
9303.000128	UNNAMED SITE (NYSM 4750)	Within	Undetermined
9303.000131	UNNAMED SITE (NYSM 6236)		Undetermined
9303.000132	UNNAMED SITE (NYSM 6237)		Undetermined
9303.000134	UNNAMED SITE (NYSM 6239)		Undetermined
9303.000245	Whitmyer Drive Precontact Site		Undetermined

2.3 Occupation History

There is little information available to assess the occupation history of the PA. Site file reviews document precontact occupation in the area generally, but few discrete archeological sites have been recorded. Though there are several precontact sites inventoried within 1.6 km (1 mi) of the PA, few have documented diagnostic artifacts associated with them. The area has generally been occupied by Native Americans since the end of the last glaciation c. 14,500 cal BP (Lothrop et al. 2016).

The Dutch, invited by the Mahicans, established Fort Orange at Albany in 1614. The Mahicans ceded territory in the lower Mohawk Valley to the Mohawk, and Fort Orange became a major trade link between the Mohawks and the Dutch. The Mohawk increasingly allowed Dutch settlement around the fort to develop. The settlement of Beverwijck around Fort Orange grew quickly, and Dutch settlers clamored for more land. Large parcels south of the Mohawk River and west of Beverwijck were secured by the Dutch Crown from the Mohawk by the mid-17th century and carved up for sale to Dutch aristocrats. Among the early settlers around the PA were the Clutes, Vedders, van Vrankens, Groots, Tymesons, Pearces, Jansens, and van Bockhoovens. The van Vrankens depicted on mid-19th century maps are no doubt descendants of those early van Vranken Dutch settlers (French 1860; Howell and Munsell 1886).

A major Dutch settlement developed at Schenectady beginning in 1661. When the English assumed control of Dutch lands in New York in 1664, they allowed Dutch settlers to stay, as long as they became English subjects. Schenectady gained municipal status in 1684. Throughout the early 18th century, the area was terrorized by attacks from French and French-allied Native Americans, and the city became a refuge for displaced area farmers and their families. These hostilities culminated in the French and Indian War, which ended in 1764 with the British in sole control of the northeast Americas. Schenectady was incorporated as a borough a year later.

With French depredations in the Valley resolved, settlement and development in the area resumed until the outbreak of hostilities between the colonies and Great Britain. The Mohawk sided with the British in the Revolutionary War and were forced to seek refuge with them in Canada. From bases in the St. Lawrence Valley, Mohawks under Joseph Brant and British under Sir John Johnson waged guerilla warfare against the Rebel settlers of the Mohawk Valley. Settlements were again abandoned or curtailed during the conflict.

After the Revolutionary War, settlement quickly returned to the Mohawk Valley. As a major artery into the western portions of New York, it was quickly developed as a transportation route bringing the young nation's rich agricultural produce to world markets. The Albany-Schenectady Turnpike opened in 1797, followed by the Erie Canal, completed in 1825. The Erie Canal crossed the Mohawk River on a great aqueduct just east of the PA. The Hudson-Mohawk Railroad followed in 1831. With these improvements, settlement in the Mohawk Valley exploded, and the infrastructure for manufacturing and freight transport was firmly developed.

The area that became the Town of Niskayuna remained in a rural agrarian setting throughout much of the 19th and early 20th century. Beginning in the mid-20th century, the area around the PA developed a suburban context as the City of Schenectady continued to grow. Much of what was farmland in the town is now, or soon will be consumed by housing developments.

3.0 ARCHAEOLOGICAL ASSESSMENT

3.1 Prior Surveys

A search within the CRIS system reveals that there have been no Phase 1b archaeological surveys conducted within the APE. No Phase 1b archaeological surveys have been conducted since 2000 in areas adjacent to the APE. There have been only two block Phase 1 archaeological surveys in the general vicinity, neither of which produced significant evidence of archaeological potential.

Mº Kay's Tav. A Earing chenectady. an Vranke WFan Franken Fan Franken Vedder J.Fan Franker A Veilder I Clark J.C.Van Franken J.H. Patman FQuadens Veddor & J.Chute J.B. Van Plan Vranke lirequer John Finn France W Bradt Jan Banken Plan Freis Pearce .V.Vanderburgh Marus Winne M. Green 5. Cregie E Winne 2 Winne J.Croguer aw Mill

Figure 5– Project area location on the Fagan 1856 map..



Figure 6– Detail of the Beers and Beers 1866 map.



Figure 7– Detail of the 1895 USGS map.



Figure 8– Detail of the 1930 USGS map.



Figure 9– Detail of the 1947 USGS map.



Figure 10– Detail of the 1954 USGS map.

3.2 Site Walkover

Prior to survey the PA was walked to locate significant landmarks and define the PA boundary. Corners of the PA were located by survey markers. All landmarks were geo-referenced using a Trimble R1 handheld GPS receiver.

The residence at 2890 River Road was photodocumented (Photo 3-4). It is a two story, side-gable and rear wing frame house on a concrete foundation with cellar. The foundation appears to be plank-formed, which is consistent with a 1920s construction. The structure has seen a number of recent updates including vinyl windows, an asphalt shingle roof, vinyl siding and wood decks. It has been abandoned for some time. There is modern (less than 20 years old) trash strewn on the surface all around the structure.

3.3 Assessment

The PA has not been previously surveyed for archaeological deposits. Given its history, topography and the results of the CRIS and map review, it seems likely that there would be undocumented archaeological resources within the PA. The PA was likely deciduous mast forest prior to agricultural development in the early 19th century, but since then it appears to have remained consistently agricultural until the 1920s. The lack of archaeological sites in the area is likely due to the a lack of systematic archaeological surveys. A Phase 1b field reconnaissance was determined to be warranted for this investigation.

4.0 ARCHAEOLOGICAL SURVEY

4.1 Survey methods

The field reconnaissance was conducted by the author and Ryan Devanny between 11/4-11/11/2023. All personnel meet 36CFR61 standards for their roles in this reconnaissance. Based on the topography and layout, it was determined that the archaeological reconnaissance of the PA could be best accomplished by a systematic shovel test survey.

Shovel test units (STPs) were excavated at 15 m (50 ft) intervals along each of 13 transects (A-M). Transects A-F were based 20 off Seneca Road from the north running south and heading 43° mag parallel to the north parcel boundary with the Town of Niskayuna recreation park. Transects G-M ran from north to south beginning 15 m (50 ft) off the shoulder of River Road. At the northeast corner of the APE. The STPs were numbered sequentially along each transect.

Each STP was excavated by hand to a depth sufficient to reach sterile subsoils, unless stopped by rocks or roots. Soils from each STP were screened through 1/4 inch mesh to search for artifacts. Notes were made of the depth and stratigraphy of each STP.

4.2 Survey results

Archaeologists excavated 66 STPs across the APE. The tested area covered 69% of the PA. The remaining 1.6 ac was not tested because it lay within delineated wetland and will not be developed, or it was at the east end of the APE, which will not be developed. Almost all STPs reached sterile subsoils. Those that did not could be explained by visual disturbance.

The STPs had a uniform profile characterized by 10-30 cm (4-12 in) of dark yellow-brown (10YR4/2) silty loam above a tan to brown (10YR6/4-6/6) silty loam subsoil. These profiles were considered to be typical for the soil types documented within the PA.

There were surprisingly few artifacts in any of the STs. ST B7 was disturbed and contained modern construction fill (PVC and modern nails). ST H2 encountered rock that may be part of a garage foundation. STs I2 and I3 contained 20th century window glass, coal and light bulb sockets consistent with the age of the residence. ST J2 contained coal ash. ST J3 contained modern glass and nails consistent with the age of the remodel. The cultural material evinces a light-density architectural midden within the A horizon of the parcel, concentrated around the structure. It is of limited research potential.

5.0 IMPACTS AND RECOMMENDATIONS

The Phase 1b systematic reconnaissance of the APE revealed evidence of a light density architectural midden within the A horizon surrounding the structure at 2890 River Road in Niskayuna, NY. The survey encountered no unexpected deposits. The midden is of limited research potential based on the recovered assemblage. No site was inventoried.



Photo 3–View of 2890 River Road, looking southwest.



Photo 4– View of 2890 River Road from the rear, looking toward the road.



Based on this investigation, there appear to be no cultural resources within the APE eligible for listing on the National Register of Historic Places. It is recommended that the proposed undertaking will have no impact on any currently listed or eligible National Register properties. This recommendation refers to the area defined as the APE in Section 1.1, and is contingent upon this and any future undertakings remaining within the footprint of that APE. If future regulated undertakings are proposed that lie outside of the APE defined in Section 1.1, the OPRHP will need to be consulted for further action.

Like all surveys, this one has relied on a sampling of the project area based on an accepted standard methodology. No sampling strategy can be 100% failsafe against the possibility of cultural resources being actually found in the course of construction. Should this occur, the client is advised to stop construction and contact the OPRHP immediately for recommendations before continuing with construction. If any human remains should be discovered, all work should cease immediately. Contact the OPRHP and the local coroner to begin mitigation procedures.

REFERENCES CITED

Beers, S.N. and D.G. Beers

1866 *New Topographical Atlas of the Counties of Albany and Schenectady, New York.* Stone & Stewart, Philadelphia.

Cressey, G. B.

1977 Land Forms. In Geography of New York State, edited by J. H. Thompson, pp. 19-53. Syracuse University Press, Syracuse, NY.

Fagan, L.

- 1856 Map of Schenectady County, New York. Dumcke & Keil, New York, NY.
- Franzi, David A., John C. Ridge, Donald L. Pair, David DeSimone, John A. Rayburn and David J. Barclay
- 2016 Post-Valley Heads Deglaciation of the Adirondack Mountains and Adjacent Lowlands. *The Adirondack Journal of Environmental Studies* 21:119-146.

French, J.H.

1860 Historical and Statistical Gazetteer of the State of New York, 1860. R.P. Smith, Syracuse.

Howell, George Rogers and John H. Munsell

1886 History of the County of Schenectady, N. Y., From 1662 to 1886. W.W. Munsell & Co., New York.

Lothrop, Jonathan C., Darrin L. Lowery, Arthur E. Spiess and Christopher J. Ellis

2016 Early Human Settlement of Northeastern North America. PaleoAmerica 2(3):192-251.

OPRHP

1994 Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State. The New York Archaeological Council, Albany. APPENDIX 1– SHOVEL TEST PROFILE DATA

	DEPTH (cm)	DEPTH (cm)	DEPTH (cm)
STP	SOIL	SOIL	SOIL
	ARTIFACTS	ARTIFACTS	ARTIFACTS
	40	50	
Al	dk gr br si lo	vl br si lo	
	20	30	
A2	dk or br si lo	vl br si lo	
	30	40	
A3	dk or br si lo	vl br si lo	
	20	30	
A4	dk or br si lo	vl br si lo	
	30	40	
A5	dk or br si lo	vl br si lo	
	25	35	
A6	dk or br si lo	vl br si lo	
	25	35	
A7	dk or br si lo	vl br si lo	
	45	y1 01 31 10	
B1	dk or br si lo		
	25	35	
B2	dk or br si lo	vl br si lo	
	20	30	
B3	dk or br si lo	vlbrsilo	
	20	30	
B4	dk or br si lo	vlbrsilo	
	20	30	
B5	dk or br si lo	vlbrsilo	
	25	25	
B6	dk or br si lo	vl br si lo	
	30	y1 01 31 10	
D 7	nott dk ar br	£11	
D/	si lo	1111	
	50		
C1	dk or br si lo		
	12 12	25	
C2	dk or br si lo	vl br si lo	
	25	35	
C3	dk or br si lo	vl br si lo	
	24	35	
C4	dk or br si lo	vl br si lo	
	12	25	
C5	dk or br si lo	vl br si lo	
	25	35	
C6	dk or br si lo	vl br si lo	
	30	40	
D1	dk or br si lo	vl br si lo	
	17	27	
D2	dk or br si lo	vl br si lo	
	25	25	
D3	dk or br si lo	vl br si lo	
	25	35	
D4	dk or br si lo	vl br si lo	
	25	35	
D5	dk or br si lo	vlbrsilo	
L		y1013110	1

	DEPTH (cm)	DEPTH (cm)	DEPTH (cm)
STP	SOIL	SOIL	SOIL
	ARTIFACTS	ARTIFACTS	ARTIFACTS
D	25	35	
D6	dk gr br si lo	yl br si lo	
E 1	20	30	
EI	dk gr br si lo	yl br si lo	
EO	30	40	
E2	dk gr br si lo	yl br si lo	
E2	50		
ЕЗ	dk gr br si lo		
E4	30	40	
E4	dk gr br si lo	yl br si lo	
Б2	20	30	
ES	dk gr br si lo	yl br si lo	
БJ	20	30	
ΓZ	dk gr br si lo	yl br si lo	
Е2	20	30	
гэ	dk gr br si lo	yl br si lo	
F/	20	30	
1.4	dk gr br si lo	yl br si lo	
E5	23	roots	
1.2	dk gr br si lo	10015	
G1	30	40	
UI	dk gr br si lo	yl br si lo	
G2	20	30	
02	dk gr br si lo	yl br si lo	
G3	20	30	
05	dk gr br si lo	yl br si lo	
G4	30	40	
UT	dk gr br si lo	yl br si lo	
	30	40	
G5	mott dk gr br	vl br si lo	
	si lo	y1 01 31 10	
H1	30	40	
111	dk gr br si lo	yl br si lo	
Н2	30	40	poss
112	dk gr br si lo	yl br si lo	foundation
H3	30	40	
115	dk gr br si lo	yl br si lo	
H4	20	30	
	dk gr br si lo	yl br si lo	
H5	20	30	
	dk gr br si lo	yl br si lo	
I1	30	40	
	dk gr br si lo	yl br si lo	
	25	2-	
I2	dk gr br si lo	35	
	coal, window	yl br sı lo	
	glass		
	25	25	
I3	dK gr br si lo	35	
	light bulb	yl br si lo	
	glass		

	DEPTH (cm)	DEPTH (cm)	DEPTH (cm)
STP	SOIL	SOIL	SOIL
	ARTIFACTS	ARTIFACTS	ARTIFACTS
14	25	35	
14	dk gr br si lo	yl br si lo	
15	30	40	
15	dk gr br si lo	yl br si lo	
T1	20	30	
J1	dk gr br si lo	yl br si lo	
12	25	35	
JZ	dk gr br si lo	yl br si lo	
	30	40	
J3	dk gr br si lo	vlbrsilo	
	nails, glass	y1 01 31 10	
14	40	nush	
J4	dk gr br si lo	pusii	
K1	23	33	
	dk gr br si lo	yl br si lo	
K 2	40		
K2	coal ash		
K3	35	45	
KJ	dk gr br si lo	yl br si lo	
T 1	30	40	
	dk gr br si lo	yl br si lo	
12	15	30	
L2	dk gr br si lo	yl br si lo	
13	20	30	
LJ	dk gr br si lo	yl br si lo	
T A	23	33	
LŦ	dk gr br si lo	yl br si lo	
15	25	35	
LJ	dk gr br si lo	yl br si lo	
М1	45	fi11	
1011	dk gr br si lo	1111	
M2	30	40	
1012	dk gr br si lo	yl br si lo	
МЗ	30	40	
1013	dk gr br si lo	yl br si lo	
M4	27	37	
1014	dk gr br si lo	yl br si lo	

KEY : dk-dark ; br=brown ; gr=grey ; yl=yellow ; mott=mottled ; lo=loam ; si=silt



New York State Parks, Recreation and Historic Preservation

KATHY HOCHUL Governor ERIK KULLESEID Commissioner

December 4, 2023

Hannah Buscemi Staff Engineer Engineering Ventures 414 Union St Schenectady, NY 12305

Re: USACE 2890 River Road Subdivision and Three New Single-effecFamily Homes 2890 River Rd, Niskayuna, NY 12309 23PR05721

Dear Hannah Buscemi:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the provided documentation in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include other environmental impacts to New York State Parkland that may be involved in or near your project.

SHPO has reviewed the Phase I Archaeological Survey Report prepared for this project (November 2023; 23SR00626). No archaeological sites were identified by the survey. Therefore, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.

If you have any questions, I can be reached at Jessica.Schreyer@parks.ny.gov.

Sincerely,

Servica E. Schreyn

Jessica Schreyer Archaeology Unit Program Coordinator

Attachment 10

Erosion and Sediment Control

Owner Certification Preparer Certification Contractor Certification Pre-Construction Meeting Documents Construction Duration Inspections Monthly Summary of Site Inspections Activities Bioretention Area Construction Inspection Checklist Bioretention Area Post-Construction Inspection Checklist



Department of Environmental Conservation

Owner/Operator Certification Form

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

Project/Site Name:	2890 River Road Subdivision			
eNOI Submission N	umber:			
eNOI Submitted by:	Owner/Operator	SWPPP Preparer	Other	

Certification Statement - Owner/Operator

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

Owner/Operator First Name

M.I. Last Name

Signature

Date



SWPPP Preparer Certification Form

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

Project Site Information Project/Site Name

2890 River Road Subdivision

Owner/Operator Information

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

RPL Family Trust

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.

Michael		н	Dussault	
First name		MI	Last Name	
Mudhad Signature	Annauts		12/6/2023 Date	STATE OF NEW LORA

CONTRACTOR, SUB-CONTRACTOR, AND TRAINED CONTRACTOR CERTIFICATION

Prior to the commencement of construction activities, 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 the implementation of the SWPPP, known as the *Trained Contractor*. The *Owner or Operator* shall ensure that at least one (1) *Trained Contractor* is on site on a daily basis when soil disturbance activities are being performed.

To be completed by each Contractor and Sub-Contractor:

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.

Name & Title (PRINT)	
Signature:	Date:
Specific Elements of SWPPP that Contractor/Subcontractor is Responsible for:	
Name & Title of Trained Contractor (PRINT):	
Signature:	Date:
Company Name:	
Address:	
Phone:	
Project Site Location/Address:	

I. PRE-CONSTRUCTION MEETING	DOCUMENTS
Project Name	
Permit No.	Date of Authorization
Name of Operator	
Prime Contractor	

a. Preamble to Site Assessment and Inspections

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified professional¹ conduct an assessment of the site prior to the commencement of construction² and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization³ using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Operators Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Name (please print):			
Title		Date:	
Address:			
Phone:	Email:		
Signature:			

c. Qualified Professional's Credentials & Certification

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (please pr	int):	
Title		Date:
Address:		
Phone:	Email:	
Signature:		

d. Pre-construction Site Assessment Checklist (NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

- [] [] Has a Notice of Intent been filed with the NYS Department of Conservation?
- [] [] [] Is the SWPPP on-site? Where?
- [] [] [] Is the Plan current? What is the latest revision date?
- [] [] Is a copy of the NOI (with brief description) onsite? Where?
- [] [] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

- [] [] Are construction limits clearly flagged or fenced?
- [] [] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
- [] [] [] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

- [] [] Clean stormwater runoff has been diverted from areas to be disturbed.
- [] [] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
- [] [] Appropriate practices to protect on-site or downstream surface water are installed.
- [] [] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Entrance

Yes No NA

- [] [] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
- [] [] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
- [] [] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Perimeter Sediment Controls

Yes No NA

- [] [] Silt fence material and installation comply with the standard drawing and specifications.
- [] [] Silt fences are installed at appropriate spacing intervals
- [] [] Sediment/detention basin was installed as first land disturbing activity.
- [] [] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

- [] [] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
- [] [] The plan is contained in the SWPPP on page
- [] [] Appropriate materials to control spills are onsite. Where?

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project. Required Elements:

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

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

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

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

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

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

SITE PLAN/SKETCH

Inspector (print name)

Date of Inspection

Qualified Professional (print name)

Qualified Professional Signature

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

Maintaining Water Quality

Yes No NA

- [] [] Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
- [] [] Is there residue from oil and floating substances, visible oil film, or globules or grease?
- [] [] All disturbance is within the limits of the approved plans.
- [] [] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA

- [] [] [] Is construction site litter and debris appropriately managed?
- [] [] [] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
- [] [] [] Is construction impacting the adjacent property?
- [] [] [] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA

- [] [] Maximum diameter pipes necessary to span creek without dredging are installed.
- [] [] Installed non-woven geotextile fabric beneath approaches.
- [] [] Is fill composed of aggregate (no earth or soil)?
- [] [] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

Runoff Control Practices

1. Excavation Dewatering

Yes No NA

- [] [] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
- [] [] Clean water from upstream pool is being pumped to the downstream pool.
- [] [] Sediment laden water from work area is being discharged to a silt-trapping device.
- [] [] [] Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader

Yes No NA

- [] [] [] Installed per plan.
- [] [] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
- [] [] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

- [] [] Installed per plan with minimum side slopes 2H:1V or flatter.
- [] [] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
- [] [] Sediment-laden runoff directed to sediment trapping structure

CONSTRUCTION DURATION INSPECTIONS Runoff Control Practices (continued)

4. Stone Check Dam

Yes No NA

[] [] Is channel stable? (flow is not eroding soil underneath or around the structure).

[] [] [] Check is in good condition (rocks in place and no permanent pools behind the structure).

[] [] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[] [] [] Installed per plan.

[] [] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

- [] [] [] Stockpiles are stabilized with vegetation and/or mulch.
- [] [] [] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

- [] [] [] Temporary seedings and mulch have been applied to idle areas.
- [] [] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Stabilized Construction Entrance

Yes No NA

- [] [] [] Stone is clean enough to effectively remove mud from vehicles.
- [] [] Installed per standards and specifications?
- [] [] Does all traffic use the stabilized entrance to enter and leave site?
- [] [] Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence

Yes No NA

- [] [] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
- [] [] Joints constructed by wrapping the two ends together for continuous support.
- [] [] [] Fabric buried 6 inches minimum.
- [] [] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation is ___% of design capacity.
CONSTRUCTION DURATION INSPECTIONS

Sediment Control Practices (continued)

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices) **Yes No NA**

- [] [] Installed concrete blocks lengthwise so open ends face outward, not upward.
- [] [] Placed wire screen between No. 3 crushed stone and concrete blocks.
- [] [] Drainage area is 1acre or less.
- [] [] [] Excavated area is 900 cubic feet.
- [] [] Excavated side slopes should be 2:1.
- [] [] [] 2" x 4" frame is constructed and structurally sound.
- [] [] Posts 3-foot maximum spacing between posts.
- [] [] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
- [] [] Posts are stable, fabric is tight and without rips or frayed areas.
- Sediment accumulation <u>%</u> of design capacity.

4. Temporary Sediment Trap

Yes No NA

- [] [] Outlet structure is constructed per the approved plan or drawing.
- [] [] Geotextile fabric has been placed beneath rock fill.

Sediment accumulation is ___% of design capacity.

5. Temporary Sediment Basin

Yes No NA

[] [] Basin and outlet structure constructed per the approved plan.

[] [] Basin side slopes are stabilized with seed/mulch.

<u>Note</u>: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

^{[] []} Drainage structure flushed and basin surface restored upon removal of sediment basin facility. Sediment accumulation is ____% of design capacity.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or

2. The SWPPP proves to be ineffective in:

- a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
- b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and

3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

III. Monthly Summary of Site Inspection Activities

Name of Permitted Facility:	Today's Date:	Reporting Month:
Location:	Permit Identification #:	
Name and Telephone Number of Site Inspector:		

Date of Inspection	Regular / Rainfall based Inspection	Name of Inspector	Items of Concern

Owner/Operator Certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

Signature of Permittee or Duly Authorized Representative

Name of Permittee or Duly Authorized Representative Date

Duly authorized representatives <u>must have written authorization</u>, submitted to DEC, to sign any permit documents.

Bioretention Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	Satisfactory/ Unsatisfactory	Comments	
1. Pre-Construction			
Pre-construction meeting			
Runoff diverted			
Facility area cleared			
If designed as exfilter, soil testing for permeability			
Facility location staked out			
2. Excavation			
Size and location			
Lateral slopes completely level			
If designed as exfilter, ensure that excavation does not compact susoils.			
Longitudinal slopes within design range			

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	Comments	
3. Structural Components			
Stone diaphragm installed correctly			
Outlets installed correctly			
Underdrain			
Pretreatment devices installed			
Soil bed composition and texture			
4. Vegetation			
Complies with planting specs			
Topsoil adequate in composition and placement			
Adequate erosion control measures in place			
5. Final Inspection			
Dimensions			
Proper stone diaphragm			
Proper outlet			
Soil/ filter bed permeability testing			
Effective stand of vegetation and stabilization			
Construction generated sediments removed			
Contributing watershed stabilized before flow is diverted to the practice			

Comments:

Actions to be Taken:	
Actions to be Taken:	

Bioretention Operation, Maintenance and Management Inspection Checklist

Proje	ect:
Loca	ation:
Site	Status:

Date:

Time:

Inspector:

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

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

Comments:

Actions to be Taken:

Attachment 11

Copy of General Permit 0-20-001



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. I	PERMIT COVERAGE AND LIMITATIONS	1
Α.	Permit Application	1
В.	Effluent Limitations Applicable to Discharges from Construction Activities	1
C.	Post-construction Stormwater Management Practice Requirements	4
D.	Maintaining Water Quality	8
E.	Eligibility Under This General Permit	9
F.	Activities Which Are Ineligible for Coverage Under This General Permit	9
Part II. I	PERMIT COVERAGE	12
Α.	How to Obtain Coverage	12
В.	Notice of Intent (NOI) Submittal	13
C.	Permit Authorization	13
D.	General Requirements For Owners or Operators With Permit Coverage	15
E.	Permit Coverage for Discharges Authorized Under GP-0-15-002	17
F.	Change of Owner or Operator	17
Part III.	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)	18
Α.	General SWPPP Requirements	18
В.	Required SWPPP Contents	20
C.	Required SWPPP Components by Project Type	24
Part IV.	INSPECTION AND MAINTENANCE REQUIREMENTS	24
Α.	General Construction Site Inspection and Maintenance Requirements	24
В.	Contractor Maintenance Inspection Requirements	24
C.	Qualified Inspector Inspection Requirements	25
Part V.	TERMINATION OF PERMIT COVERAGE	29
Α.	Termination of Permit Coverage	29
Part VI.	REPORTING AND RETENTION RECORDS	31
Α.	Record Retention	31
В.	Addresses	31
Part VII	. STANDARD PERMIT CONDITIONS	31
Α.	Duty to Comply	31
В.	Continuation of the Expired General Permit	32
C.	Enforcement	32
D.	Need to Halt or Reduce Activity Not a Defense	32
E.	Duty to Mitigate	33
F.	Duty to Provide Information	33
G.	Other Information	33
Η.	Signatory Requirements	33
I.	Property Rights	35
J.	Severability	35

K.	Requirement to Obtain Coverage Under an Alternative Permit	35
L.	Proper Operation and Maintenance	36
M.	Inspection and Entry	36
N.	Permit Actions	37
Ο.	Definitions	37
Ρ.	Re-Opener Clause	37
Q.	Penalties for Falsification of Forms and Reports	37
R.	Other Permits	38
APPEN	IDIX A – Acronyms and Definitions	39
Acro	nyms	39
Defir	nitions	40
APPEN	IDIX B – Required SWPPP Components by Project Type	48
Table	e 1	48
Table	e 2	50
APPEN	IDIX C – Watersheds Requiring Enhanced Phosphorus Removal	52
APPEN	IDIX D – Watersheds with Lower Disturbance Threshold	58
APPEN	IDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)	59
APPEN	IDIX F – List of NYS DEC Regional Offices	65

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.

 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

- 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

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

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

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

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

- (iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
 - (1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
 - (2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.
- (iv) Overbank Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
 - (1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
 - (2) A downstream analysis reveals that *overbank* control is not required.
- (v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
 - (1) the site *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 **<u>not</u>** 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 *discharge*s 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 *discharge*s 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
 - 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

- 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

 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 <u>all</u> 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 (<u>http://www.dec.ny.gov/</u>) 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*:
 - 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

- 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

 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

- 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

- 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;
- 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
- I. 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.
- 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:
 - Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;
 - 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 postdevelopment 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, <u>with the exception of</u>:
 - 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 <u>not</u> located

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

- 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 <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E;
- 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;
- 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 postconstruction stormwater management practice(s);
- k. Identification and status of all corrective actions that were required by previous inspection; and

- I. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.
- 5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.
- 6. All inspection reports shall be signed by the *qualified inspector*. Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

- 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; <u>and</u> all areas of disturbance have achieved *final stabilization*; <u>and</u> all temporary, structural erosion and sediment control measures have been removed; <u>and</u> 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; <u>and</u> all areas disturbed as of the project shutdown date have achieved *final stabilization*; <u>and</u> all temporary, structural erosion and sediment control measures have been removed; <u>and</u> all postconstruction 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-ofway(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

(Part VII.A)

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:

- 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

- 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

<u>All definitions in this section are solely for the purposes of this permit.</u> <u>Agricultural Building</u> – 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 postdevelopment 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 has received four (4) hours of the licensed 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 supervision of the licensed Professional Engineer or Registered Landscape Architect 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

Appendix A

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 <u>not</u> located in one of the watersheds listed in Appendix C or <u>not</u> *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.

- 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

Appendix B

Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP

THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

- 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

- 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

- 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

BEEKMAN EAST FISHKILI PAWLING R3 PATTERSON KENT SOUTHEAST PUTNAM VALLE BREWSTER CARMEL NORTH SALEM SOMERS CORTLAND EWISBORC RKTOWN BEDFORD PO MOUNTKICO EW CASTLE NORTH CAST MOUNT_PLEASAN HARRISON **EOH** Watershed

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

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

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

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

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

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

<u>Region</u>	<u>Covering the</u> Following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) <u>PERMIT ADMINISTRATORS</u>	DIVISION OF WATER (DOW) <u>Water (SPDES) Program</u>
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21st St. Long Island City, Ny 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, Ny 11101-5407 Tel. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 South Putt Corners Road New Paltz, Ny 12561-1696 Tel. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 North Westcott Road Schenectady, Ny 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, Ny 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 STATE ROUTE 86, Ро Вох 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 – List of NYS DEC Regional Offices



KATHY HOCHUL Governor ERIK KULLESEID Commissioner

December 4, 2023

Hannah Buscemi Staff Engineer Engineering Ventures 414 Union St Schenectady, NY 12305

Re: USACE 2890 River Road Subdivision and Three New Single-effecFamily Homes 2890 River Rd, Niskayuna, NY 12309 23PR05721

Dear Hannah Buscemi:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the provided documentation in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include other environmental impacts to New York State Parkland that may be involved in or near your project.

SHPO has reviewed the Phase I Archaeological Survey Report prepared for this project (November 2023; 23SR00626). No archaeological sites were identified by the survey. Therefore, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.

If you have any questions, I can be reached at Jessica.Schreyer@parks.ny.gov.

Sincerely,

Jessica E. Schreyen

Jessica Schreyer Archaeology Unit Program Coordinator



TOWN OF NISKAYUNA PLANNING BOARD AND ZONING COMMISSION

AGENDA STATEMENT

AGENDA ITEM NO. VIII. 2

MEETING DATE: 1/8/2024

ITEM TITLE: DISCUSSION: 1430 Balltown Rd. – A site plan application for an addition to the existing building and expansion of the parking lot.

PROJECT LEAD: Leslie Gold

APPLICANT: John Roth, Highbridge Development

SUBMITTED BY: John Roth

REVIEWED BY:

Conservation Advisory Council (CAC)
Zoning Board of Appeals (ZBA)
Town Board
OTHER:

ATTACHMENTS:

□ Resolution ■ Site Plan □ Map □ Report □ Other:

SUMMARY STATEMENT:

Mr. Roth submitted an application for an addition to expand the existing 9,980 sq. ft. building by 2,700 sq. ft. (27%) and expand the parking lot area from approximately 39 to 61 parking spaces (64%). The building was most recently used as a law office building.

A TDE comment letter dated 12/13/23 was received in response to the revised site plan and supporting documents listed below dated 12/1/23. Modifications and or additional details are requested for the Traffic Summary, Site Plan Package, Stormwater Management Report and Basic SWPPP. As of 1/4/24 the applicant has not yet responded to the comment letter.

COMPREHENSIVE PLAN

The 2013 Comprehensive Plan includes several references to the area encompassing 1430 Balltown Rd.

- Page 21 The "Transportation" portion of the Comprehensive Plan states the importance of an efficient, safe and flexible system.
 - Page 22 states "The Balltown corridor continues to be an area of concern that affects the entire Town because it is the primary north south arterial. This is ranked as the highest priority for this section and encompasses the most complex set of problems."
- Page 94 Subarea Recommendations includes the following recommendation for subarea B5 (which includes the Town Center Overlay District (TCOD) and 1430 Balltown Rd.)
 - "Subarea B5: The Town Center is located in this subarea. The Town has adopted the Town Center Overlay District (TCOD) which includes design standards for any type of construction or renovation for any building located in the TCOD. The Town

should continue to uphold the existing zoning standards and encourage pedestrian friendly development."

BACKGROUND INFORMATION

The property is located in the C-N Neighborhood Commercial zoning district and Town Center Overlay District. Professional offices, non-medical, are permitted principal uses in the C-N district.

The following drawings and documents were provided with the application.

- A 2-page drawing set entitled "Preliminary Site Plan Layout Building Addition 1430 Balltown Rd." by ABD Engineers and Surveyors dated 11/3/23 with no subsequent revisions.
- 2. A Short Form Environmental Assessment Form (EAF) signed by Luigi A. Palleschi P.E. dated 11/2/23 with no subsequent revisions.
- 3. A Stormwater Management Report entitled "2,700 sq. ft. Building Addition & Parking Lot Expansion 1430 Balltown Rd., Town of Niskayuna, Schenectady County, NY" by Luigi A. Palleschi, P.E. ABD Engineers & Surveyors, LLP dated 11/3/23 with no subsequent revisions.
- A Stormwater Pollution Prevention Plan entitled "Basic Stormwater Pollution Prevention Plan Erosion & Sediment Controls Only for 2,700 sq. ft. Building Addition & Parking Lot Expansion 1430 Balltown Rd. Town of Niskayuna Schenectady County, New York" by Luigi A. Palleschi, P.E. ABD Engineers & Surveyors, LLP dated 11/3/23 with no subsequent revisions.
- 5. Two (2) colored elevation renderings showing the building with the proposed addition

The site plan drawing includes the following zoning code and pre and post development lot details.

ZONING:	C-N (NEIGHBORHOOD COMMER	CIAL)	
	REQUIRED	EXISTING	PROPOSED
LOT SIZE:	15,000 SF MIN.	86,179± SF (1.98± AC)	
LOT WIDTH:	100' MIN.	435.01'	
BLDG. HEIGHT:	100' MAX.	XX'	XX'
BLDG. COVERAGE:	20% MAX	9,980± SF (11.6%)	12,680± SF (14.7%)
SETBACKS:			
FRONT:	15'	115.1'	109.5'
SIDE:	10' (20' BOTH)	44.8', 63.2'	44.8', 24.5'
REAR:	20' MIN.	154.4'	154.4'

Parking

Building Area	Actual Parking	Required	Surplus /
(SF)	Spaces	Parking	Deficit
		Spaces	
		(1/225 SF)	
9,980	39	45	-6
12,680	61	57	+4

Niskayuna Zoning Code Schedule I-D C-N District Column 8 item 8 reads as follows: "There shall be a minimum 25% of the total land area of the site reserved as landscaped open space. At the discretion of the Planning Board, a portion of this open space shall be used to provide landscaping internal to required off-street parking areas." The proposed site plan should be reviewed relative to this requirement.

Article VIIIA Town Center Overlay District, Neighborhood Commercial and Highway Commercial Standards provides standards to "identify an identifiable center of the Town of Niskayuna", "define a sense of community", "promote a traditional architectural and visual environment" and "promote revitalization, not change it into a better place". The proposed building addition and parking lot expansion should be reviewed relative to the sections of the zoning code within Article VIIIA, including but not limited to the following.

Section 220-48.5 Pedestrian and streetscape amenities

- C (1) Sidewalks
- C (3) lighting
- C (4) Amenities: benches, bike racks, trash receptacles.
- C (5) Parking: screening shall be applied in the parking lot design along parcel boundaries in order to maintain an aesthetic quality
- C (6) Landscaping

<u>11/8/2023 Conservation Advisory Council (CAC)</u> – The CAC looked at this project preliminarily and had the following initial comments:

- 1. Requested a map showing tree removal and tree planting native species should be used
- 2. Recommend pesticide free practices for the property
- 3. Recommend installation of EV Charging stations at the parking lot
- 4. Requested whether new lighting will be added should be dark skies friendly
- 5. Requested whether or not solar panels can be added to the new roof addition
- 6. Requested knowing what type of office use was proposed wanted to know if it would increase the intensity of use of the building
- 7. Recommended more plantings and landscaping in front of the building to reduce the large lawn (lawns are high maintenance and poor habitat)

<u>11/13/23 Planning Board (PB) meeting</u> – Luigi Palleschi, P.E. of A.B.D. Engineers and Surveyors attended the meeting and presented the project to the Board. He noted that the investment in the building is part of a strategic plan to consolidate and relocate Niskayuna School District offices to this site for a period of approximately 8 - 10 years, until a permanent location is voted on in 2027 and ready to be occupied in approximately 2032. Mr. Palleschi referenced the site plan and systematically explained the following aspects of the design.

Stormwater

- The current parking lot drains to a small underground system that often overflows.
- A new system, designed to 25-year rainfall rates, is included in the proposed design
- The system includes underground stormwater storage in the southeast corner of the parking lot and a detention basin near the southeastern corner of the proposed addition.

Parking

• It was noted that additional parking spaces have been added to the site as required by the zoning code for the increase in gross floor area of the building.

Lighting

- It was noted that new lighting will be added.
- A photometric plot of light distribution was not included in the drawing set

Means of Access / Traffic

- Primary access to the site will remain off of Balltown Road.
- A trip count analysis or traffic study was not included in the documentation package.

Signage

• The rendering of the Balltown Road facing façade was displayed and it was noted that the Niskayuna logo would be added near the "1430" in the northwest corner of the façade.

Landscaping

- Mr. Palleschi noted that approximately 40% of the site is greenspace.
- It was noted that some existing trees and bushes will need to be removed for the proposed changes and the applicant will work with the Tree Council to develop a replanting plan.

Environmental Review

• Ms. Robertson summarized the comments from the 11/8/23 CAC meeting noted, above.

Town Designated Engineer (TDE) review

• Ms. Robertson noted a check for the fees associated with a TDE review of the proposed plan was expected on Tuesday 11/14/23 and the TDE would immediately be engaged.

After a discussion the Planning Board requested the following additional information.

- Stormwater analysis using 1, 10, 25 and 100-year rainfall rates.
- A photometric plot of the current and proposed light distribution on the site.
- A traffic count analysis based on the expanded building and proposed occupancy.
- Dimensioned drawings and renderings of proposed signage.

<u>11/27/23 Planning Board (PB) meeting</u> – Ms. Gold, PB project lead, provided a progress update on the project. It was noted that the TDE's 1st comment letter (4-pages) was received on the afternoon of 11/27/23 and had not been reviewed yet. Ms. Robertson noted that she would like to see a traffic trip count for the proposed project. The Board also requested a presentation describing how the proposed underground stormwater system is sized and functions and if any maintenance is required.

12/1/23 – 12/4/23 – In response to the 11/27/23 PB meeting, the applicant's engineer delivered a revised design package to the Planning Office that contained the following.

- 1. Revised site plan dated Rev. 1 12/1/23
- 2. Revised Stormwater Management Report dated 12/1/23
- 3. Revised SWPPP dated 12/1/23
- 4. A Traffic Summary dated 12/1/23
- 5. Revised renderings of the proposed building including signage

The Planning Office emailed the revised documents to the TDE for review. A preliminary videoconference review by office staff and the TDE revealed the following.

- 1. Revised site plan dated Rev. 1 12/1/23
 - a. The underground stormwater storage tanks are replaced with a stormwater detention basin on the eastern side of the lot near Balltown Road.
- 2. Revised Stormwater Management Report 12/1/23
 - a. The peak discharge rates in cfs for the post-development condition are less than the pre-development condition for all storm events up to and including the 100-year event as shown in the table below.

Drainage Area	1-Year	10-Year	25-Year	100-Year
Total Pre	3.18	7.08	8.95	11.85
Total Post	2.58	5.61	7.02	9.17
Net change	-0.60	-1.47	-1.93	-2.68

- 3. Revised SWPPP 12/1/23
 - a. To be reviewed by the TDE
- 4. Traffic Summary 12/1/23
 - a. Ref. Trip Generation Manual, 9th Edition, published by the Institute of Transportation Engineers (ITE), based on data for Land Use Code (LUC) 710 "General Office"
 - b. The 11th Edition (newest version) of this manual should be used. This version subdivides "General Office" into more descriptive areas. This may impact the expected trips associated with the use.
 - c. Proposed project expected to impact traffic as noted below. (9th edition data)

Trips	AM peak hr.	PM peak hr.
Total Pre	16	15
Total Post	20	19
Net change	+4	+4

- 5. Revised renderings / signage
 - a. To be reviewed by the Planning Office

Several items listed in the TDE's 1st comment letter dated 11/27/23 were not addressed in the revised design package dated 12/1/23. The Planning Office will work with the TDE to bring these issues to resolution. The list of areas to be addressed include but are not limited to: a photometric lighting plan, pedestrian access to the building from the parking lot and pedestrian and streetscape amenities as required in the Town Center Overlay District.

<u>12/6/23 Conservation Advisory Council (CAC) meeting</u> – The CAC reviewed the project and unanimously approved a motion to make a Negative SEQR recommendation to the Planning Board. In their opinion the project will not have a negative impact on the environment. During their review and discussion, the following comments and requests were made.

- Use white oaks for new tree plantings
- Minimize the visual impact of the stormwater basin to the Town Center Overlay District
- Include a sidewalk from Balltown Rd. up to the building
- Include EV charging stations on the site and continue exploring the use of green energy practices including solar panels.
- Consider a pesticide-free lawn maintenance program

The Council also noted the importance of managing the stormwater on the site. They requested that the Planning Office have the TDE review this portion of the site plan very carefully.

<u>12/11/23 Planning Board (PB) meeting</u> – Mr. Palleschi, P.E. attended the meeting and provided an update to the Board. He referenced his letter to the Planning Office dated 12/1/23 that includes the following.

- Responses to the 7 initial comments provided by the CAC
- Revised site plans dated 12/1/23
- Revised SWPPP that now includes the SMR dated 12/1/23
- Traffic summary prepared by ABD Engineers & Surveyors, LLP
- Renderings of proposed building signage

Mr. Palleschi stated that the revised design utilizes an at-grade stormwater detention basin rather than the subterranean vault proposed in the previous design. He also noted that the basin was sized using 100-year storm rainfall data. Additional updates included a reduction in the number of light poles due to the use of 2 fixtures per pole, the addition of a sidewalk running parallel to the driveway providing a pedestrian connection to the building from Balltown Road, a negative SEQR recommendation (no negative impact on the environment) from the CAC and a desired timeline to have the project completed in June of 2024.

12/13/23 -- 2nd TDE comment letter – A 2nd TDE comment letter (4-pages) dated 12/13/23 was received by the Planning Office and circulated to the applicant. The letter notes that it is in response to the following documents.

- A memo to LR re: Responses to Agenda Statement dated 12/1/23 by ABD Engineers.
- Site Plan Set (4-pages) revised 12/1/23 by ABD Engineers
- Stormwater Management Report revised 12/1/23 by ABD Engineers
- Basic SWPPP revised 12/1/23 by ABD Engineers
- A Traffic Summary, no date by ABD Engineers

Notable comments in the letter include but are not limited to the following.

- Traffic Summary
 - The applicant shall utilize the latest version (11th Edition) of the Trip Generation Manual, published by the Institute of Transportation Engineers (ITE). Current Land Use Codes (LUC's) shall be utilized for determining trips generated as a result of the proposed improvements.
- Site Plan Package
 - a. Sheet 1 of 4 Applicant shall provide accessible route from public right-of-way to building entrance.
 - o b. Sheet 1 of 4 Applicant shall consider species besides Red Maple (Acer rubrum).

- c. Sheet 1 of 4 Applicant shall specify native landscape (species, size and quantities).
- d. Sheet 1 of 4 Applicant shall identify where mulched area with perennials is located on site, and specify native landscape (species, size, and quantities).
- e. Sheet 2 of 4 Applicant shall verify if easement with Stormwater Facility is acceptable by Utility provider.
- \circ f. Sheet 2 of 4 An overflow crest shall be provided for detention basin #1.
- g. Sheet 4 of 4 Stormwater Detention Basin #1 10 yr. storm labeled as 439.85 compared to stormwater report of 439.86.
- h. Sheet 4 of 4 Stormwater Detention Basin #1 25 yr. storm labeled as 440.23 compared to stormwater report of 440.25.
- i. Sheet 4 of 4 Stormwater Detention Basin #1 100 yr. storm labeled as 440.74 compared to stormwater report of 440.76.
- Stormwater Management Report
 - Page 1 Applicant shall correct sentence. However, the Town of Niskayuna required that the site stormwater management system be designed to control peak discharge rates for the, 1, 10, 25 and 100-year storm events to less than or equal to those of the predevelopment condition. Post-development discharge within the drainage area is controlled to less than the pre-development condition with the retention and release of stormwater runoff up to and including the 100-year event.
 - Page 4 Post Area 1A-3 is not described. Applicant shall provide additional information.
 - Applicant shall include Stormwater Management Maintenance Agreement with Town of Niskayuna for maintenance of proposed features.
- Basic SWPPP Erosion & Sediment Controls Only
 - It is recommended that the SWPPP include the following components to ensure constructed measures area completed in compliance with the NYSDEC Stormwater Management Manual and proposed design plans. These components are to be submitted to the Town of Niskayuna for review/acceptance. (Note: NOI does not need to be submitted to NYSDEC, unless over 1 acre of disturbance.
 - Notice of Intent
 - Contractor Certification Statement
 - Notice of Termination
 - SWPPP Inspection Form
 - SWPPP Modification Form
 - Construction Inspection Checklist
 - Monthly Maintenance Inspection Checklist

The Project is on the Planning Board meeting this evening to provide the Board with a general status update and detailed update of the technical action items.



December 13, 2023

1 Winners Circle, Suite 130, Albany, NY 12205 Tel: 518.463.4400

Ms. Laura Robertson, Planner Town of Niskayuna One Niskayuna Circle Niskayuna, New York 12309-4381

Re: 1430 Balltown Road Applicant: Highbridge Development, John Roth Technical Review Comment – Letter #2 Town of Niskayuna, NY W&S Project No.: ENG23-3172

Dear Ms. Robertson:

As requested, we have performed a Town Designated Engineer (TDE) review of the abovereferenced project (Project) based on the following information made available to Weston & Sampson, PE, LS, LA, Architects, P.C. (Weston & Sampson, W&S) by the Town:

- Memo to Laura Robertson re: Responses to Agenda Statement dated 12.1.23 by ABD Engineers
- Site Plan Set (4 sheets), revised 12.1.23 by ABD Engineers
- Stormwater Management Report, revised 12.1.23 by ABD Engineers
- Basic SWPPP Erosion & Sediment Controls Only, revised 12.1.23 by ABD Engineers
- Traffic Summary, no date by ABD Engineers

Applicant shall review and respond to Weston & Sampson's Town Designated Engineer Letter #1 dated November 27, 2023.

Based on our technical review of the available information listed above, please accept the following comments for the Planning Department and Planning Board's consideration of this Project:

1. Comment Memo

a. No Comments.

2. Traffic Summary

a. Applicant shall utilize the latest version (11th Edition) of the Trip Generation Manual, published by the Institute of Transportation Engineers (ITE). Current Land Use Codes (LUC's) shall be utilized for determining trips generated as a result of the proposed improvements.

- 3. Site Plan Package
 - a. Sheet 1 of 4 Applicant shall provide accessible route from public right-of-way to building entrance.



b. Sheet 1 of 4 – Applicant shall consider species besides Red Maple (Acer rubrum).



c. Sheet 1 of 4 – Applicant shall specify native landscape (species, size, and quantities).



d. Sheet 2 of 4 – Applicant shall identify where mulched area with perennials is located on site, and specify native landscape (species, size, and quantities.

SCIENTIFIC NAME	COMMON NAME	QUANT.	SIZE	COMMENTS	1	r I
CER RUBRUM	RED MAPLE	2	2" C	848	-	-
PLANTING AND FLOW AND SEED ALL DIST	ER BEDS AS NOTED TURBED AREAS	6	MULC	HED AREA W/	PERENNIALS	
	ENUT E - FOOT				ACRES & S	



e. Sheet 2 of 4 – Applicant shall verify if easement with Stormwater Facility is acceptable by Utility provider.



- f. Sheet 2 of 4 An overflow crest shall be provided for detention basin #1.
- g. Sheet 4 of 4 Stormwater Detention Basin #1 10yr storm labeled as 439.85 compared to stormwater report of 439.86
- h. Sheet 4 of 4 Stormwater Detention Basin #1 25yr storm labeled as 440.23 compared to stormwater report of 440.25.
- i. Sheet 4 of 4 Stormwater Detention Basin #1 100yr storm labeled as 440.74 compared to stormwater report of 440.76.

4. Stormwater Management Report

- a. Page 1 Applicant shall correct sentence. However, the Town of Niskayuna required that the site stormwater management system be designed to control peak discharge rates for the 1, 10, 25, and 100-year storm events to less than or equal to those of the predevelopment condition. Post-development discharge within the drainage area is controlled to less than the pre-development condition with the retention and release of stormwater runoff up to and including the 100-year event.
- b. Page 4 Post Area 1A-3 is not described. Applicant shall provide additional information.
- c. Applicant shall include Stormwater Management Maintenance Agreement with Town of Niskayuna for maintenance of proposed features.



5. Basic SWPPP - Erosion & Sediment Controls Only

- a. It is recommended that the SWPPP include the following components to ensure constructed measures are completed in compliance with the NYSDEC Stormwater Management Manual and proposed design plans. These components are to be submitted to the Town of Niskayuna for review/acceptance. (Note: NOI does not need to be submitted to NYSDEC, unless over 1 acre of disturbance):
 - i. Notice of Intent
 - ii. Contractor Certification Statement
 - iii. Notice of Termination
 - iv. SWPPP Inspection Form
 - v. SWPPP Modification Form
 - vi. Construction Inspection Checklist
 - vii. Monthly Maintenance Inspection Checklist

If you have any questions regarding this correspondence, please contact me directly by phone at 518-463-4400 or email Biggsd@wseinc.com.

Sincerely,

WESTON & SAMPSON PE, LS, LA, Architects, P.C.

Daniel Biggs, RLA, ISA, CERP Associate | Regional Manager P:\NY\Niskayuna, NY\TDE Reviews\ENG23-3172 - 1430 Balltown Road\Technical\2023.12.13 TDE Letter2-1430 BalltownRd.docx











TOWN OF NISKAYUNA PLANNING BOARD AND ZONING COMMISSION

AGENDA STATEMENT

AGENDA ITEM NO. VIII. 3

MEETING DATE: 1/8/2024

ITEM TITLE: DISCUSSION – 2333 Nott St. E. -- A site plan application for a tenant change to a Market 32 grocery store.

PROJECT LEAD: Leslie Gold

APPLICANT: Kelly O'Neill, agent for the owner

SUBMITTED BY: Kelly O'Neill, agent for the owner

REVIEWED BY:

□ Conservation Advisory Council (CAC) □ Zoning Board of Appeals (ZBA) □ Town Board □ OTHER:

ATTACHMENTS:

□ Resolution ■ Site Plan □ Map □ Report □ Other:

SUMMARY STATEMENT:

Kelly O'Neill submitted a site plan application for a tenant change to a Market 32 grocery store at 2333 Nott St. E. The site was previously a Shop Rite grocery store until approximately 12/1/23.

A detailed analysis of the proposed signage for the Market 32 store is included. A drawing package was provided that describes proposed locations for shopping cart storage areas and grocery pickup parking spaces.

COMPREHENSIVE PLAN

The proposed application complies with the Economic Development section, beginning on page 73, of the 2013 Niskayuna Comprehensive Plan.

BACKGROUND INFORMATION

The property is located in a Planned Development District (PDD) within the C-N Neighborhood Commercial zoning district and Town Center Overlay District (TCOD). Grocery stores are allowable uses in the PDD.

The following documents were provided with the site plan application.

1. An untitled and undated 1-page layout of the land formerly known as Shop Rite Plaza showing access roads and parking spaces.

- A 1-page drawing entitled "Exterior Building Elevations Painting and Signage Scope of Work, Price Chopper 2333 Nott Street East, Niskayuna NY 12309" by Golub Corporation Engineering Department 461 Nott Street Schenectady NY 12308 dated 11/29/23 with no subsequent revisions.
- A 1-page drawing with a file name including "demo work" and entitled "EQD1, General Equipment Plan – Proposed – Not For Construction, Price Chopper "Niskayuna" 2333 Nott Street East, Niskayuna, NY 12309" by Golub Corporation Engineering Department 461 Nott Street Schenectady, NY 12308 dated 11/28/23 with no subsequent revisions.
- 4. A 1-page drawing with a file name including "new plan" and entitled "EQ01, General Equipment Plan Proposed Not For Construction, Price Chopper "Niskayuna" 2333 Nott Street East, Niskayuna, NY 12309" by Golub Corporation Engineering Department 461 Nott Street Schenectady, NY 12308 dated 11/28/23 with no subsequent revisions.

The aforementioned "new plan" drawing includes the following statistics comparing the
proposed Market 32 layout to the previous Shop Rite store.

Γ			
NISKAYUNA, NY			
	EXISTING	PROPOSED	DIFFERENCE
TOTAL BUILDING	58,564 S.F.	58,564 S.F.	0 S.F.
SALES AREA	38,760 S.F.	38,760 S.F.	0 S.F.
LINEAR FT OF SHELVING	2,458 LFT	2,153 LFT	-305 LFT
CENTER STORE	2,458 LFT	1,710 LFT	-748 LFT
HBC	0 LFT	331 LFT	+331 LFT
GREETING CARDS	0 LFT	112 LFT	+112 LFT
FROZEN FOOD	147 DOORS	143 DOORS	-4 DOORS
DAIRY	12 DR COOLER, 36 LFT L/M DECK, 48 DOORS	12 DR COOLER, 36 LFT L/M DECK, 48 DOORS	0 DR COOLER, 0 LFT L/M DECK, 0 DOORS
BEVERAGE	15 DOORS (38 LFT)	15 DOORS (38 LFT)	0 DOORS (0 LFT)
STORE PLANNER: ERF			
MILLWORK NEW RELOCATE WITHIN STORE WITHIN STORE OTHERS, I.E. BLDG. 13 DEMO MAYBE REUSE			

The applicant is appearing before the Board this evening to present the project and discuss typical site plan review topics including the following.

- Parking
- Site lighting
- Means of access
- Signs
- Landscaping
- Architectural features

<u>12/11/23 Planning Board (PB) meeting</u> – Ms. O'Neill attended the PB meeting and explained the project to the Board. She provided a top-level overview of the proposed Market 32 store. She noted that the company would like to open the store as quickly as possible and they do not plan to make any significant changes to the current layout. She explained that one of the appeals to the Golub Corporation about this site is the fact that it could be converted so quickly with minimal investment. A general discussion ensued regarding lighting, shopping cart storage locations, grocery pickup parking areas and landscaping. Chairman Walsh asked Ms. O'Neill to work with the Planning Office and the Project Lead, Ms. Gold, to address the typical site plan topics listed above.

12/12/23 – Ms. Robertson emailed Ms. O'Neill a list and map of things the Complete Streets and Tree Council identified for the formerly ShopRite Plaza that she mentioned during the 12/11/23 PB meeting. The list includes the following.

- Crosswalks painted at the plaza entrances where the multi-use path crosses parallel to Nott St and where the sidewalk crosses parallel to Balltown Road
- Install missing section of sidewalk/stairs between parking lot and Nott St and add corresponding crosswalks across parking lot and across Nott St (this was in original plaza designs)
- Refresh landscaping islands surrounding parking lot especially where there are dead or mostly dead trees.

<u>12/20/23</u> – The following updated design documents were provided to the Planning Office.

- A 1-page building (façade) signage drawing entitled "Market 32, Niskayuna, NY Exterior Signs 3-1" by Saxton Sign Co. dated 12/23/19
- A 1-page pylon signage drawing entitled "Market 32, Niskayuna, NY Exterior Signs 3-2" by Saxton Signs dated 12/23/19
- A 1-page drawing entitled "#229 Niskayuna Developer Pylon" by Watt Retail Integrated dated 12/7/23.
- A 4-page Power Point presentation with the file name "Niskayuna Site Signs and Cart Corral Location Plan 12.20.23" including two sheets of proposed directional signs.
- A 1-page drawing entitled "Exterior Building Elevations Painting and Signage Scope of Work 2333 Nott Street East, Niskayuna, NY" by Golub Corporation dated 12/14/23 with no subsequent revisions.

SUMMARY OF PROPOSED FACADE WAIVERS FOR MARKET 32

No.	Description	Code Allows	Proposed (sq. ft.)	Prior Waiver (sq. ft.)	New Waiver (sq. ft.)
1	Number of façade signs	1 per façade	15	6	8
2	Size of a façade sign	50 sq. ft.			
		max.			
	1		110.04	32.4	27.64
	1		110.04	0	60.04
	1		125	0	75
3	Height of 1 directional sign	4' high	6' high	0	2'

BACKGROUND

Shop Rite Signage – Approved 7/26/11

- Approximate building frontage = 281'
- Approximate square footage of façade signage / linear ft. of building frontage = 0.54

	Sign Name	Size (sq. ft.)	Waiver (sq. ft.)
1	Bottle Return	11.25	
2	Circle logo	15.9	
3	Entrance	7.5	
4	Shop Rite script (reduced from 140.1 sq. ft.)	82.4	82.4 - 50 = 32.4
5	Circle logo	15.9	
6	Pharmacy department within	12.5	
7	Entrance	7.5	
Total		152.95	152.95 - 50 = 102.95

7/26/11

- Waiver granted allowing 152.95 sq. ft. of total façade signage (waiver of 102.95 sq. ft.)
- Waiver granted allowing 7 façade signs (waiver of 6 façade signs)
- Waiver granted allowing 82.4 sq. ft. of Shop Rite Script façade sign (waiver of 32.4 sq. ft.)

Proposed Market 32 Signage

- Approximate building frontage = 281'
- Approximate square footage of façade signage / linear ft. of building frontage = 1.14

	Sign Name	Size (sq. ft.)	Waiver (sq. ft.)
1a	Market 32 Place	110.04	110.04 - 50 = 60.04
1b	Market 32 Place	110.04	110.04 - 50 = 60.04
2	Market 32	125	125 – 50 = 75
3	Grocery Pickup	9.58	
4	Dairy	3.5	
5	Recycling Center	11.18	
6	Bakery	4.5	
7	Deli & Cheese	7.5	
8	Butcher	4.8	
9	Seafood	4.8	
10	Foodfare	5.3	
11	Florist	4.4	
12	Welcome	22.5	
13	Produce	5.4	
14	Café	2.0	
Total		321.0	
	Shop Rite approved signage	152.95	102.95 waiver
	Market 32 signage increase from prior	168.05	102.95 + 168.05 = 271

Qty 6	Directional signs	6' high	2' (6' – 4')

1/8/24

- Shop Rite (previous tenant) obtained the following waivers
 - A waiver allowing 7 façade signs on the front façade (waiver of 6 façade signs)
 - A waiver allowing an 82.4 sq. ft. façade sign (waiver of 82.4 50 = 32.4)
 - A waiver allowing 152.95 total sq. ft. of façade signage (152.95 50 = 102.95)
- Market 32 is proposing the following waivers
 - A waiver allowing a total of 15 façade signs
 - Additional waiver of 14 6 = 8 signs
 - A waiver allowing 2 façade signs each measuring a total of 110.04 sq. ft.
 - 1 additional waiver of 27.64 sq. ft. (60.04 32.4 = 27.64)
 - 1 new waiver of 60.04 sq. ft. (110.04 50 = 60.04)
 - A waiver allowing 1 new façade sign measuring a total of 125 sq. ft.
 - A new waiver of 75 sq. ft. (125 50 = 75)
 - A waiver allowing 6 directional signs measuring 6 ft. above grade
 - A new waiver of 2 ft. of directional sign height (6 4 = 2)

REFERENCE

Market 32 Signage – Mohawk Commons Store

- Approximate building frontage = 343'
- Approximate square footage of façade signage / linear ft. of building frontage = 0.75

	Sign Name	Size (sq. ft.)	Waiver (sq. ft.)
1	Market	175.6	125.6 (175.6 – 50)
2	Welcome	22.45	
3	Florist	4.4	
4	Butcher	4.8	
5	Dairy	3.5	
6	Seafood	4.8	
7	Produce	5.4	
8	Bakery	4.5	
9	Deli & Cheese	7.5	
10	Food Fare	5.3	
11	Pharmacy +	19.57	
Total		257.82	

12	Market (West)	118.125	
Total		118.125	

Reference

- The Market 32 at Mohawk Commons is in the C-S Shopping Center Commercial district
- The Market 32 store at Mohawk Commons was granted the following waivers
 - A waiver allowing 11 façade signs on the front façade (waiver of 10 façade signs)
 - A waiver allowing a 175.6 sq. ft. façade sign (waiver of 82.4 50 = 32.4)
 - A waiver allowing 152.95 total sq. ft. of façade signage (152.95 50 = 102.95)

The PB should review and discuss the proposed changes to the parking lot and signage.



TOWN OF NISKAYUNA

One Niskayuna Circle Niskayuna, New York 12309-4381

Phone: (518) 386-4530

Application for Site Plan Review

Applicant (Owner or Agent):	Location:
Name Golub Corporation	Number & Street 2333 Nott Street East_
Address 461 Nott Street	Section-Block-Lot
Schenectady, NY 12308	
EMAIL:kellyoneill@pricechopper.com	
Telephone 518-379-1293 Fax	Zoning District
Proposal Description:	
Interior renvoations include: removal of and instal	llation of new interior decor, paint, and
cases. Removal or relocation of existing cases. Rem proposed demo plan (minor).	noval and addition of interior walls per

Proposed exterior changes include paint, signage and new entrance changes.

Mult Mil- Date: 12 Signature of applicant:

Signature of owner (if different from applicant):

Date: _____

DATE:	December 4, 2023

- TO: Town of Niskayuna 1 Niskayuna Circle Niskayuna, NY 12309
- FROM: Niskayuna Shopping Center, LLC C/O Robert Von Ancken 7 East 14th Street, Apt. 19S New York, NY 10003
- SUBJECT: Letter of Authorization/Consent Price Chopper/Market 32 #047 Niskayuna Renovation

I, Robert Von Ancken, Principal, own the property at 2333 Nott St. East, Niskayuna, NY 12309. The property is a retail supermarket leased by Price Chopper/Market 32, 461 Nott Street, Schenectady, NY 12308. I authorize Price Chopper/Market 32 and their selected contractor, Huntington Construction, to commence construction at 2333 Nott St. East, Niskayuna NY 12309.

Robert Von Ancken

.



NOTT STREET SITE PLAN



NOTT STREET SITE PLAN - GROCERY PICKUP WAY FINDING SIGNAGE PLAN





NOTT STREET SITE PLAN - ENLARGED SITE PLAN

NOTT STREET SITE PLAN - NEW MAIN ENTRANCE - PHOTO A



NOTT STREET SITE PLAN - NEW MAIN ENTRANCE - PHOTO B




NOTT STREET SITE PLAN - GROCERY PICKUP PARKING STALL SIGNS



Typical Grocery Pickup Parking Stall Sign



518-769-9410

Let us know you're here. Use the app or call

GROCERY PICKUP

know as DiBond

The material we print these on is E-Panel also

x 12" wide

The overall sign is 36" tall

The white section of the sign is 11" tall





















NOTE:

PANTONE 7503 APPROVED EQUIVALENT PANTONE 368 APPROVED EQUIVALENT PANTONE 7533 APPROVED EQUIVALENT

Target Colors:		PANTONE® 368C	PANTONE® 7503C	Approved: Advertising Approved: Engineering	
	PANTONE® 7533C			IMPORTANT NOTE: Fabricator / Printer to verify dimensions discrepancies to be confirmed with Wa All images and cropping are Watt reco images from their own library, please for and approval.	a against site conditions. Any tit and the client prior to installation, mmended. If the client is selecting orward selections to Watt for review

watt	Watt International Inc. 590 King St. West	T 418-364-9384 F 416-364-1098 Copyright 2022 wattisretail.com	Project Name: #229 Niskayuna Developer Pylon	Drawing Name: Niskayuna_DevPylon_Signage		Drawing Scale: NTS	Print Scale: 100%	Docket: 25054		Drawing Number:
Retailntegrated	Toronto, Ontario Canada M5V 3M1		File Name: CA0100C Niskayuna_DevPylon_Signage_DEC7.ai		Created By/Revised By pw	Round of Design 1	Date Issued: Dec 07_2023	Date Released:	BY PRICE CHOPPER	CA0100C

NOTT STREET SITE PLAN - GROCERY PICKUP SIGNAGE AND CART CORRAL PLANS



Overall Site Plan

NOTT STREET SITE PLAN - GROCERY PICKUP SIGNAGE AND CART CORRAL PLANS





NOTT STREET SITE PLAN - GROCERY PICKUP PARKING STALL SIGNS



Typical Grocery Pickup Parking Stall Sign

